School of Marketing

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Conceptualizing Consumer Acceptance of Innovations

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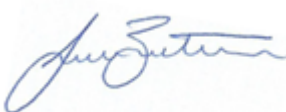
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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Human Ethics (For projects involving human participants/tissue, etc) The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number #.... SOM2011048...........

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Abstract:

This research examines for the first time the agents of change that drive consumers to break from their existing consumption status quo to accept a new product innovation. In doing so, this research unifies status quo bias theory (Samuelson and Zeckhauser, 1988), technology acceptance (i.e. the TPB, TAM, UTAUT, and CAT), and innovation diffusion (Rogers, 1983; 1995; 2003) frameworks to form the *FACE Model of Consumer Innovation Acceptance.*

Prior to testing the full theoretical framework, a substantial scale development is undertaken as a measure for the affect consumer's experience when exposed to an innovation. This process reveals through the *Consumer Innovation Affect* scale that such affect exists as a 17-item, bi-valenced hierarchical measurement model comprised of *Positive Affect* and *Negative Affect* at the superordinate level, with 6 basic emotions constructs at the first-order level.In testing the full *FACE* theoretical framework across two levels of perceived innovativeness (determined by respondents as mildly innovative and highly innovative products), it is discovered that the agents of change for these two degrees of innovations are somewhat distinct. The acceptance of mildly innovative products is influenced by a consumer's familiarity with the product domain through innovativeness, their attitudinal assessment of the innovation, and its compatibility with usage. The acceptance of highly innovative products is influenced in the same manner, with the exception that consumers' perceptions of behavioural control acts as an enabler of change, while the perception of enhanced usefulness no longer becomes a salient influencer of attitudes when the perception of innovativeness is high.

This research makes several valuable contributions, including unifying theoretical frameworks of technology and innovation adoption with status quo bias theory through the development of the *Consumer Innovation Affect* measure and its subsequent application in the broader *FACE Model of Consumer Innovation Acceptance*; successfully broadening the perspectives of behavioural intentions beyond purely "adoption" or "purchase" outcomes into *Resistance*, *Trial*, and *Purchase*; and the insights gained through eliciting the correct emotions during pre-adoption of product innovations and breaking the status quo across perceived innovativeness levels. For those looking to facilitate acceptance of new product adoption, such contributions are invaluable.

Keywords: innovations, emotions, status quo, familiarity, attitude, compatibility, enablers

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Table of contents

List of tables:

List of figures:

CHAPTER 1: INTRODUCTION:

This introduction chapter will provide an overview of key components of this research. This will begin with a discussion on the overview of the research process conducted, a brief introduction of the research background, industry justification of the research, a breakdown of the research question and objectives that this study attempts to address, its delimitation and scope, key theories, empirical constructs used, and the intended contributions of the research.

Research overview:

In light of the conspicuous gaps in the literature, this research for the first time examines the agents of change that drive consumers to break from their existing consumption status quo to accept a new product innovation. In doing so, this research unifies status quo bias theory (Samuelson and Zeckhauser, 1988), technology acceptance (i.e. the TPB, TAM, UTAUT, and CAT), and innovation diffusion (Rogers, 1983; 1995; 2003) frameworks to form the *FACE model of consumer innovation acceptance.* Such a framework deduces the influence of familiarity with the product domain, attitudinal assessments of the innovation, compatibility with usage, and the enablers of internal and external support on the consumer's acceptance of innovations. Furthermore, acceptance is dimensionalized through the enhanced measure of resistance, trial, and purchase intentions, which is a vital contribution beyond traditional measures of "adoption".

Prior to testing the full theoretical framework, a substantial scale development is undertaken as a measure for the affect consumer's experience when exposed to an innovation. This process reveals through the *C.I.A.* scale that such affect exists as a 17-item, bi-valenced hierarchical measurement model comprised of *Positive Affect* and *Negative Affect* at the superordinate level, with basic emotions constructs of *Joy*, *Wonder*, *Apathy*, *Melancholy*, *Trepidation* and *Cynicism* existing at the first-order level. This scale is employed in the subsequent research to examine the affective costs and benefits associated with breaking from the status quo through innovation acceptance.

In testing the full *FACE* theoretical framework across two levels of perceived innovativeness (determined by respondents as mildly innovative and highly innovative products), it is discovered that the agents of change for these two degrees of innovations are somewhat distinct. The acceptance of mildly innovative products is influenced by a consumer's familiarity with the product domain through

innovativeness, their attitudinal assessment of the innovation, and its compatibility with usage. The acceptance of highly innovative products is influenced in the same manner, with the exception that consumers' perceptions of behavioural control acts as an enabler of change, while the perception of enhanced usefulness no longer becomes a salient influencer of attitudes when the perception of innovativeness is high. Having confirmed the partial applicability of the developed *FACE* theoretical framework to the consumer's acceptance of innovations, subsequent testing confirmed the model does not suitably explain consumer acceptance of conventional (non-innovative) products. Through proving the inability of this control group to explain conventional acceptance, the validity of the model to this specific and under-examined research context is supported.

Through addressing the identified gaps in the academic literature pertaining to innovation acceptance, several substantial contributions are made by this study. From a conceptual perspective, unifying theoretical frameworks of technology and innovation adoption with status quo bias theory through the development of the *Consumer Innovation Affect* measure and its subsequent application in the broader *FACE Model of Consumer Innovation Acceptance* offers substantial value in determining what drives consumers to break from their status quo consumption options. However, successfully broadening the perspectives of behavioural intentions beyond purely "adoption" or "purchase" outcomes into *Resistance*, *Trial*, and *Purchase*, offers further conceptual and methodological significance. The methodological development of the *C.I.A.* measure and its extensive scale development scrutiny is of methodological salience, while utilizing industry sourced stimuli amidst a broad consumer sample ensures ecological validity from a methodological perspective parallel to enhancing value to practitioners. Such practice receives further value through confirmation that the acceptance of innovations and conventional products should not be treated the same way. In addition, breaking the status quo is also not the same across innovativeness levels. The substantial power obtained through eliciting the correct emotions during pre-adoption of product innovations is of substantial substance to those looking to market and promote new product innovations in a consumer market.

Although this research is limited through its focus on the consumer pre-adoption context of innovative products, it nonetheless provides substantial new value to the academic literature. The extent of understanding which is revealed through this research establishes a substantive foundation for further empirical and industry scholarship to grow this body of knowledge. The question of what causes consumers to break from their status quo and accept a new product innovation has been adequately addressed for the first time.

Research background:

Every consumer has one or many products that they currently own, purchase, borrow, or use, which satisfies their needs or wants. These products tend to be used over and over again and become the status quo for that individual. When faced with a new innovation to replace these options, one is likely to resist and retreat back to the familiarity and comfort of their status quo. However, some do succeed, if only for a short period of time, in breaking this pattern, and subsequent diffusion through consumer markets may result. Think to the archetypal innovations of the modern era. How many of these are branded with a certain fruit? The ubiquity of these innovations has re-shaped the way many people see the world around them and its ironically disconnected inhabitants. This is so much so much so that the brand name has rapidly increased the need for semantic meaning in data coding, thus requiring many to clarify the subject of their sentences, and even encouraged us to associate much more than just a good taste with hearing the name of this humble fruit.

Innovations are powerful. If a product can penetrate through the consumers' status quo, it can become a part of our lives, and with it, a regular resident of our bank statements. For example, *Apple* has sold 74.47 million *iPhones* in the first quarter of 2015 alone (*Global Apple iPhone sales 2007-2015, by quarter,* 2015), *Toyota* sold its millionth hybrid *Prius* within just under 9 years (Heussner, 2009), the online gaming streaming website *Twitch* was recently sold to *Amazon* for US$1 billion, and the online payment facilitator *Paypal* made US$7.9 billion in revenue in 2014 alone (*PayPal's annual revenue in 2013 and 2014 (fee-based),* 2014). Innovations are changing the world, and also changing our lives on a daily basis. In visiting any of the myriad of websites, blogs, social media pages, or community forums covering the thousands of innovations that hit the market every day (for example *Tech Crunch, Idea Connection, Consumerist, Trend Hunter, Shut Up And Take My Money*, and many more), let alone those in the prototype stage to be funded through crowd-funding websites (see *Kickstarter, Pozible, Indiegogo,* etc.*)*, it is clear that the consumer is now faced with an overwhelming array of choice and decision making.

In examining what makes an innovation a commercial success, every innovation is unique. In an attempt to keep pace with the innovative mass-product customization of *Nike ID, Adidas* has recently started utilizing robotics to offer better customization to consumers andto themselves, greater manufacturing efficiency *(Adidas to shift some production from Asia in robot revolution,* 2015). Nevertheless, this is a very common example of innovation acceptance on both the producer and

consumer's end. In 2014, the *Coolest* Cooler, an esky that combines speakers, a blender, and other party accessories, raised over $13 million (26,570% of its funding goal) through *Kickstarter,* while in the process mobilizing an inspired and intrigued customer base to spread the word about this relatively conventional product. Herein lies an important criterion to the success of an innovation though; although they often they build from the familiar so as to alleviate alienating costs (Wunker, 2015). However, innovations by nature possess a sharp difference of characteristics to those prior, and consumers are faced with change. This is something they often are not prepared to do, hence resistance is often favoured over the chance to break from the norm, and individuals will likely adopt at very different times in an innovation's life cycle.

Integral to future successes is the pre-adoption stage. While successful adoption and diffusion can position a brand at the top of a consumer's preferences and keep them there for a generation (for example the *iPod*, *Diet Coke*, or the *Sony Playstation*), the list of failed innovations is endless. From *Apple*'s *Newton* PDA, the *Sony Betamax* predecessor to the VHS, *Atari*'s *E.T. the Extra-Terrestrial* video game of which 728,000 copies were buried (and recently uncovered) in New Mexico landfill, *Virgin*'s Wedding Dresses, *Crystal Pepsi*, and countless others, many innovations never make it past the "pre-adoption" stage. Similarly, *Pfizer's Exubera* inhalable insulin device failed to ascertain the predicted billions of dollars of sales (rather the product lost billions) simply because it wasn't compatible with consumers' usage habits (Wunker, 2015). More recently, *Google Glasses* has received significant backlash through consumer-generated media and from tech journalists regarding the innovation's privacy concerns, its hefty price tag, and its inaccessibility to the average consumer (Elgar, 2015). The *Apple Watch* has also experienced much debate over its high price tag (reaching as high as US$17,000) and the rapid pace of its inevitable technical obsolescence. (Elgar, 2015). Consequently, in breaking from existing patterns of consumption by accepting something new, consumers are faced with some very tough decisions. So what makes an innovation successful, and what makes it a failure? This research attempts to address this by developing a theoretical framework to explain how consumers can be motivated to break the status quo and accept a new product innovation. However, the value of such is substantial for the vast array of established and up and coming marketers of innovations, and wider academia and practice alike.

Research justification:

Be it through social media, the referrals of friends, paid or owned media sources, or the all-to-ubiquitous mobile phone, consumers are constantly exposed to the newest, best, fastest, and the most effective new way of saving time and money, or enhancing one's performance. Thus, such promises are rarely met with aplomb though. As detailed in the aforementioned discussion, countless new products are introduced to consumer markets, and they barely manage to gather initial market share. In addition, they experience more failures in reaching the maturity stages of diffusion. Thus, unsurprisingly Srinivasan et al. (2009) reveal that despite developments in product designs, technology, and marketing, most new products fail as a result of firm's lack of understanding of consumer needs. What makes an individual want to purchase a product they consider new, or demonstrative of a sharp difference of characteristics to those prior is yet to be conceptually illuminated. Much research has examined the acceptance of technology (see Ajzen's (1991) Theory of Planned Behaviour, or Davis' (1989) Technology Acceptance Model as research catalysts), the diffusion of innovations (see Rogers, 1983, 1995, and 2003), and the tendency to remain with existing options through the status quo bias theory and its influence on user resistance (See Samuelson and Zeckhauser, 1988; Kim and Kankanhalli, 2009). However, a research gap exists pertaining to breaking from the status quo through consumer innovation acceptance. Evidently, the primary purpose of this research is to address this neglected academic residency of consumer behavior.

In light of the vast array of new products (technology demanding or not) introduced to markets every day, such an area of research will provide countless insights to practitioners and academics alike, allowing these important market facilitators to better understand the decision making of consumers exposed to the new and unfamiliar. Beyond this primary interest, this research will broaden the perspective of "acceptance" to include not only purchase, but also the often ignored, and potentially significant behavioural intentions of resistance and trial. In light of an individual's tendency to reject the unacquainted in preference for the more familiar status quo, these outcomes are likely to characterize many perspectives of the acceptance of innovations. Thus, such outcomes are explored for the first time with such rigour through the development of a theoretical framework that models consumer innovation acceptance amidst the status quo.

Research question and objectives:

To provide substantial contributions to both academia and practice alike, this research attempts to answer the following question: *What drives a consumer to break from their status quo and accept a new product innovation?* In achieveing such, the following research objectives are set:

- **RESEARCH OBJECTIVE 1:** To develop a theoretical framework that explains what drives consumer status quo destruction through the acceptance of new product innovations
- **RESEARCH OBJECTIVE 2:** To unify status quo bias theory with technology acceptance and innovation diffusion models
- **RESEARCH OBJECTIVE 3:** To develop a scale to dimensionalize the affect consumers experience when exposed to product innovations
- **RESEARCH OBJECTIVE 4:** To dimensionalize consumer acceptance of innovations through an ordinal outcome scale
- **RESEARCH OBJECTIVE 5:** To examine acceptance drivers across two levels of perceived innovativeness: mildly innovative and highly innovative
- **RESEARCH OBJECTIVE 6:** To confirm that this theoretical framework is suitable only for the context of innovative products

In achieving these objectives, this research addresses the following objectives through scrupulous empirical examination across six independent samples (totaling 1716 respondents). To achieve objective 3, an empirical measure of consumer innovation affect is scrutinized through three independent samples (one exploratory factor analysis, and two distinct confirmatory factor analyses) comprising of 316, 257, and 200 respondents respectively. To achieve objectives 1, 2, 4, and 5, the empirical analysis of the relevant theoretical constructs is undertaken with samples of 353, 348 respondents, across two levels of perceived innovativeness (mildly innovative, and highly innovative). To achieve research objective 6, the consumer innovation acceptance theoretical framework developed in this research is examined on an additional "conventional product" sample of 242 respondents.

As a theoretical underpinning of the entire study, status quo bias theory is unified with technology acceptance and innovation diffusion frameworks to develop a theoretical framework explaining the agents of change that drive consumer innovation acceptance. This is successfully achieved through a comprehensive theoretical framework that provides both industry and the academic literature with

essential new insights into why consumers choose to resist, trial, or purchase new product innovations. Consequently, such knowledge does not only bring the potential to better diffuse new goods and services through to consumer groups, but also new ideas and perspectives that could lead to significant positive changes to the world we live in, and what's more important than that?

Delimitation and scope:

This research examines consumer behaviour, and explores cognitive and affective drivers for the adoption of innovations. Thus, in the interest of controlling the scope of this research to achieve maximum academic and industry impact, this study imposes several constraints on the scope of this study. Such delimitations include:

- To ensure subject products are considered to be innovations, the perception of innovativeness is determined by respondents. If they do not believe it to be innovative, they are not included as part of the "treatment" research design samples
- To guarantee that the pre-adoption context of consumption is examined, this study is limited to non-adopters of the subject innovations who have not purchased or used the product before
- As a result of their large number of credence qualities, this research does not examine innovative services, just innovative products, as they are more suited to respondents' evaluation as part of a research experiment
- To ensure maximum ecological validity, the data used in this study is comprised of both student and non-student (general) samples
- Due to the practical limitations of the data collection process, this study utilizes a sample of respondents that are predominantly Australian and US residence
- To enhance ecological validity, all research stimuli are sourced directly from the industry, using actual promotional material created by these brands with minimal modification

Key theories:

In its pursuit of the development of a new theoretical framework to explain consumer innovation acceptance, this research attempts to unify several complementary yet divergent theories. These salient and often seminal frameworks and scales are discussed as follows:

Status quo bias theory:

Samuelson and Zeckhauser's (1988) status quo bias theory suggests individuals have a strong tendency towards the status quo when presented with an alternative option, asserting the presence of status quo bias in decision-making is explained through three classifications:

- *Cognitive misperception*: the psychological principle that minor losses from changing from a current situation may be perceived as being larger than they may actually be
- *Rational decision-making*: individuals evaluate the relative costs and benefits of new decisions, and when these costs are believed to outweigh the benefits, consumers are likely to retain the status quo
- *Psychological commitment*: the presence of sunk costs, social norms, and efforts to feel in control that are causing reluctance in switching to an alternative

Technology adoption frameworks:

Over a substantial period of time, many theoretical frameworks have examined the acceptance of technological products through a series of cognitive, and more recently, affective constructs. Herein, three widely established theoretical frameworks of technology adoption are drawn upon in this research:

- *Theory of planned behavior (TPB)*: conceptualizes behavioural adoption through consideration of control-related beliefs (perceived behavioural control), the influences of others (subjective norms), and one's own attitudinal assessment (Ajzen, 1991)
- *Technology acceptance model (TAM)*: an individual's perceptions pertaining to the instrumental evaluations of ease of use and usefulness are the salient beliefs that comprise one's attitude towards using a particular piece of technology. This attitude in turn determines one's behavioural adoption (Davis, 1989)
- *Consumer acceptance of technology (CAT)*: conceptualizes adoption beyond purely cognitive drivers, the CAT addresses inadequacies in acceptance models through unifying the (cognitive) TAM with the pleasure, arousal, and dominance paradigm of affect (PAD) (Kulviwat et al., 2007; Nasco et al., 2008)

Innovation diffusion theory:

Roger's (1983, 1995, 2003) innovation diffusion theory proposes that adoption of innovations is assessed through five characteristics of the innovation, as perceived by the consumer:

- *Relative advantage*: the degree to which an innovation is perceived to be better than its precursor, or delivers a certain advantage over preceding technologies or methods
- *Complexity*: the degree to which an innovation is perceived as being difficult to use or understand
- *Compatibility*: the extent to which an innovation is perceived as being consistent with the existing values, needs, or experiences of potential adopters
- *Trialability:* the degree to which an innovation can be experimented with on a limited basis prior to adoption
- *Observability:* the degree to which the results of an innovation are easily visible and communicable to others

Consumer affect:

An integral stage of the unification and evolution of innovation acceptance literature and methodologies undertaken by this research is its development and subsequent implementation of a measure of consumer affect. In developing its affective scale specific to the context of innovation acceptance, this research draws from the following existing measures of consumer affect:

- *Consumption emotions set (CES):* a measure that reliably and comprehensively captures the range of emotions most frequently experienced in a breadth of consumption situations (Richins, 1997)
- *Hierarchy of consumer emotions (HCE)*: builds upon psychology research and existing consumer affect studies to dimensionalize a bi-valenced, hierarchical measure of consumer affect (Laros and Steenkamp, 2005)

Constructs:

In successfully measuring consumer innovation acceptance through the newly established *FACE* theoretical framework, a wide assortment of cognitive and affective psychometric scales are employed. These include:

9

- *Complexity:* a key component of Rogers' (1995, 2003) innovation diffusion characteristics representing the degree to which an innovation is perceived as being difficult to use or understand

- *Social influences:* A surrogate of the TRA and TPB's subjective norms measure, the construct represents the perceived pressures, opinions, and influences from social networks in making or not making a particular decision (Taylor and Todd, 1995a,b)

- *Perceived value for money:* a sub-dimension of Sweeney and Soutar's (2001) perceived value measure, it represents a functional dimension encapsulating the utility derived from a product through the reduction of its perceived short and long-term costs

- *Usefulness:* derived from Davis et al.'s (1998) TAM, representing the degree to which an individual perceives something to enhance their productivity

- *Relative advantage:* a key component of Rogers' (1995, 2003) innovation diffusion characteristics representing the degree to which an innovation is perceived to be better than its precursor, or delivers a certain advantage over preceding technologies or methods

- *Image:* representing social benefits gained from acceptance, the construct is an aggregate of image (Moore and Benbasat, 1991), status (Han, Nunes, and Dreze, 2010), uniqueness (Tian, Bearden, and Hunter, 2001), and envy (Belk, 1985).

- *Knowledge:* distinct from objective measures of knowledge, this construct represents perceptions of how much an individual thinks they know about a particular product category (Flynn and Goldsmith, 1999)

- *Innovativeness:* a domain-specific measure of the risk-taking propensity in others through the early adoption of products from a particular product category (Agarwal and Prasad, 1998)

- *Perceived behavioural control:* a key component of Ajzen's (1991) TPB, the construct represents an individual's assessment of their perceived internal and external control-related capabilities in executing a behaviour

- *Compatibility:* another key component of Rogers' (1995, 2003) innovation diffusion characteristics which represents the extent to which an innovation is perceived as being consistent with the existing values, needs, or experiences of potential adopters

- *Credence:* representing a claim of belief or confidence, the construct is an aggregate of the subjectively determined expectation of potential losses occurring (risk) and the probability associated with such a likelihood (uncertainty) (Dholakia, 2001; Quintal, Lee and Soutar, 2010)

- *Attitude*: employed similarly through many adoption frameworks including the TPB, TAM, and CAT, the construct represents an enduring evaluation of a subject innovation with reference to both valence and strength (Berger, Rachford, and Haines Jr., 1994)
- *Acceptance*: an ordinal measure of intended behavioural outcomes with respect to resistance (Ram and Sheth, 1989), trial (Chang, 2004), and purchase (see adopt - Lu, Yao, and Yu, 2005; Yang et al., 2012) of the subject innovation

Significance:

Having identified a series of research gaps not yet sufficiently addressed, the successful implementation of this research in filling these gaps will provide several contributions to both academia and practice. These contributions represent valuable outcomes of the research, as proposed by the following:

- *Conceptual*: the development of the first consumer innovation affect measure, the establishment of the first theoretical framework to extensively model consumer innovation acceptance, examining such acceptance at two levels of perceived innovativeness, whilst dimensionalizing acceptance beyond traditional the "adoption" measures employed by most studies
- *Methodological*: the development of a bi-valenced measure of consumer innovation affect, dimensionalizing acceptance through an enhanced ordinal measure, examining acceptance in a widely applicable sample, through industry sourced stimuli pertaining to both utilitarian and hedonic product innovations
- *Practical*: establishing evidence that the acceptance of innovations is not comparable to that of non-innovative products, determine the extent to which status quo breakage differs across perceived levels of innovativeness, identify the components of affect that should be manipulated, and establishes the extent to which innovation acceptance is dependent upon trial

Chapter conclusion:

The introduction to this research successfully identifies an industry-based and theoretical context in which this consumer innovation acceptance study will provide significant value. By unifying status quo bias theory with innovation and technology acceptance frameworks, the birth of the *FACE Model of Consumer Innovation Acceptance* is undertaken. This provides and enhanced understanding of what

drives consumers to break from their status quo in accepting a new product innovation. In achieveing such, a thorough critique of the literature is undertaken, several theoretical underpinnings and hypotheses are developed, an extensive discussion of the research methodology is provided, and the consumer innovation affect scale is developed and subsequently implemented into wider structural analysis as a means to effectively test the aforementioned hypotheses. Such research culminates in the successful application of the *FACE* theoretical framework, concluding with discussion of the sizeable implications of this research, and its limitations and directions for future research.

CHAPTER 2: LITERATURE REVIEW

In undertaking secondary data research in a study such as this, a thorough and comprehensive exploration of existing academic literature is required. In doing so, this chapter explores consumer innovation acceptance through systematic analysis of a wide range of literature, commencing with a discussion of product innovations and innovation adoption in a general sense. To broaden academia's perspectives of product innovation adoption, the components of status quo bias theory are discussed, as well as the process of innovation diffusion, a range of drivers of acceptance (the personal, innovation, social, and attitudinal), various behavioural intentions, and lastly, the discerned gaps in the literature that this study will attempt to fill.

Product innovations:

An innovation is a product, idea or practice that is perceived as new by an individual (Rogers, 2003). Such often exhibit a degree of newness, originality or uniqueness (Wang and Ahmed, 2004). Evidently, such an interpretation is often subjective, and what may be considered innovative to one consumer may not be to another. Thus, an innovation may have been conceived a long time prior, yet still be perceived as new (and thus innovative) to a particular individual or consumer segment (Sahin, 2006). In light of this, Wang and Ahmed (2004) detail that innovative products possess great growth and expansion opportunities for businesses. Innovations allow companies to establish dominant positions in competitive markets, while affording new entrants the opportunity to gain entry into them (Danneels and Kleinschmidt, 2001).

The semantics behind what is an innovation can be very confusing, with some terms, such as technology or inventions incorrectly used when discussing innovations. In acknowledging the limits of innovation research, it must be noted that a distinction exists between inventions and innovations. In addressing this distinction, Rogers (2003, p. 181) proposes that, "invention is the process by which a new idea is discovered or created", Herein, an innovation is characterized by the practicing or adoption of a new idea. Herein, the scholar believes that the more reinvention takes place, the more quickly innovations are adopted, and become assimilated into the consumer culture and social systems. From this perspective, an invention is only an innovation once a consumer group has adopted it. If such products or services are not diffused to consumer groups, then they cannot be rightfully

considered as a new practice or idea. An innovation does not have to be new, as the time between its invention and when it is diffused to a particular market may be substantial. Additionally, while innovations often possess some degree of advanced technology, it is not a pre-requisite; in fact many innovations are often simple or ingenious ideas which are not reliant on new technology. Carayannis, Gonzalez, and Wetter (2003) detail how technology and innovation differ, suggesting technology is the often science-based, entire complex of knowledge, equipment and skills that create new products, processes or services. These new applications created for users from technology (products and services) are considered the innovations, with varying degrees of innovativeness existing.

Chao, Reid and Mayondo (2012) identify that empirical studies categorize product innovations on their degree of newness to markets, and the level of technological change observed within the product. Robertson (1971) discussed three types of innovative consumer products, classifying each along a continuum based upon how (dis)continuous their effects are on consumption patterns which have already estalbished. These three categories range from less (continuous) to more (discontinuous) radical, and are a subjective interpretation of one's perception of continuity. They are:

- *Continuous innovations*: those alterations or modifications to existing products (or services) that cause little behavioural change on the part of adopters
- *Dynamically continuous innovations*: more radical, those existing products significantly modified, or new products that have a non-drastic effect on consumption behaviour
- *Discontinuous innovations:* newly introduced products that initiate novel features, new technologies, and benefits which dramatically alter consumption patterns (Meyers and Debevec, 1992)

Gatignon and Robertson (1985) suggest that discontinuous innovations are often complex products, processes, or concepts that possess attributes largely unfamiliar to potential adopters, or are those that represent major changes in basic products or services (Gao, Leicheter and Wei, 2012). Evidently, Souder, Sherman, and Davies-Cooper (1998) note that to reduce uncertainty, individuals must be communicated the costs and benefits associated with an innovation. However, this may be difficult, as the consumer is likely to have limited direct category experience with more discontinuous innovations, and evidently the gap between the expected and the actual outcomes is likely to be high (Oliver and Winer, 1987). In the case of continuous innovations, said gap is likely to be much smaller as many consumers will have requisite experience with the product (Wood and Moreau, 2006).

Utilitarian vs. hedonic consumption:

In the consumption context, Moon and Kim (2001) note that the "work vs. play" task type makes a difference in the salience of intentions, with Holbrook and Gardner (1998) even suggesting the type of motivation towards a task (extrinsic vs. intrinsic) can moderate the consumption experience. In the context of consumer interactions with technology, the two broad tasks that have received the majority of academic attention are utilitarian and hedonic tasks. In comparing both tasks, Bazerman, Tenbrunsel and Wade-Benzoni (1998) suggest a distinction between affective preferences, (considered "wants") and cognitive or reasoned preferences (considered "shoulds") that underlie consumer decision-making. Using such a framework, Dhar and Wertenbroch (2000) identify that this want / should distinction is broadly compatible with hedonic and utilitarian goods, suggesting hedonic value is likely to be influenced by "want" preferences, whilst utilitarian items are likely to be subject to "should" preferences. Accordingly, Moon and Kim (2001) suggest a distinction must be made whether the underlying purchase task is utilitarian or hedonic, as each has a distinct consumption objective or purpose; hedonic systems aim to provide self-fulfilling value to the user, in contrast with utilitarian systems, which aim to provide instrumental value (van der Heijden, 2004).

Utilitarian consumption:

Utilitarian tasks are those activities where the person's motivations are focused on problem solving. Such tasks tend to relate more to functionality, and are more cognitive driven, rational and goal oriented (Dhar and Wertenbroch, 2000), often with a focus on efficiency. Batra and Ahtola (1990) suggest that consumers purchase goods and services, and perform consumption often for instrumental reasons concerned with expectations of consequences from functional and non-sensory attributes. An example from their study includes the utilitarian attributes of decay prevention and visiting the dentist. Utilitarian benefits have tendency to be pragmatic (Lim and Ang, 2008), with examples including convenience and control (in the context of internet shopping) as key sources of utilitarian value (Wolfinbarger and Gilly, 2001). What's more, Venkatesh, Thong and Xu (2012) acknowledge that frameworks such as the UTAUT (as well as the TPB and TAM) approach acceptance with emphasis on the importance of utilitarian value and extrinsic motivations. From a global perspective, Tse et al. (1989) suggest that as economies develop, consumption shifts from being utilitarian to hedonic.

Hedonic consumption:

As most traditional research is positioned towards understanding extrinsic attributes and motivations to product acceptance, it is more common that the utilitarian nature of products and consumption is explored. However, despite its existence as an under-explored constituent of acceptance research, the hedonic nature of products is equally as important in understanding acceptance. In a general sense, the term "hedonic" derives from the word "hedonism", a term used to denote the principle that pleasure or happiness is the chief good in life (Merriam-Webster 2003). Evidently, hedonic tasks are motivated by affect and sensory experiences as such tasks focus on gratification or sensual pleasures (Hirschman and Holbrook, 1982). In exploring the motivations behind hedonic consumption, Van der Heijden (2004) states that for hedonic systems, intrinsic motivations are more likely to be the dominant predictor of intentions to use the system at the expense of extrinsic motivation. Similarly, Venkatesh, Thong and Xu (2012) identify that both consumer behaviour and IS research have discovered that hedonic motivations are important in consumer product and / or use of technology (e.g. Holbrook and Hirschman, 1984; van der Heijden, 2004; Nysveen et al., 2005).

Task as a moderator:

Nasco et al.'s (2008) extension of the consumer acceptance of technology (CAT) model makes a further contribution to the academic literature through the exploration of the nature of the task as a moderator of consumer's antecedent perceptions on attitude towards adoption. By exploring both utilitarian and hedonic tasks and the influence that cognition and affect have on such behaviour, the authors introduced a new consideration into technology acceptance literature. Prior to the research of Kulviwat et al. (2007) and Nasco et al. (2008), Davis (1989) concludes with absolute clarity that task variables do affect technology acceptance. Moreover, Goodhue and Thompson (1995) demonstrates that in information technology situations, task characteristics influence evaluations of technology, and when exploring this theory in the consumer context, task type (in the form of "work" vs. "play") is discovered to have a significant impact on the salience of consumer intentions (Moon and Kim, 2001). Resultantly, Nasco et al. (2008) explore adoption across utilitarian and hedonic experiences, suggesting that the nature of one's interaction with an innovation will determine the path most salient in shaping attitudes towards acceptance. Evidently, the authors propose (p.989) that "the nature of one's interaction with an innovation could determine the path(s) most salient in shaping attitudes toward its acceptance". They suggest that if a consumer has a utilitarian experience with a high-tech

product, cognitive factors will play a more influential role than affective in shaping adoption; conversely, if a consumer has a hedonic experience with the technology, affective factors may play a more substantial role. In exploring such moderating effects, Nasco et al. (2008) believe themselves to be the first researchers to examine such debate in an acceptance study. Unfortunately though, in their limited analysis (basic chi-square difference testing) the authors are unable to support a significant difference in either of the user experiences. Needless to say, this does not mean utilitarian or hedonic product type does not play a role in consumer innovation acceptance; this remains an unknown.

Innovation adoption:

Lu, Yao and Yu (2005) state that the first step in the long-term usage or diffusion of any product is at the adoption stage. Rogers (2003, p.177) defines adoption as the "full use of an innovation as the best course of action available", viewing the decision to "not to adopt an innovation" as its antonym, rejection. Through its empirical ubiquity, a variety of other definitions are employed for the term "adoption", including Steenkamp and Gielens (2003) who outline adoption as the first purchase or first few purchases; whilst Lu, Yao and Yu (2005) consider adoption the initial acceptance of a particular object or innovation. Irrespective of the variety of similar definitions, initial adoption (of innovations) decisions are often made in light of higher risk, lower familiarity and knowledge, and in unknown reactions from an individual's social system (Rogers, 1995).

Goldenberg, Lehmann, and Mazursky (2001) outline that adoption of innovations occurs in an inverted U-shape, with incremental products considered to be too trivial, offering little advantage, and as a result are ignored. Alternatively, radical innovations may be too complex or difficult to understand and are rejected (Goldenberg, Lehmann, and Mazursky, 2001). Consequently, this breeds uncertainty, and uncertainty is a powerful hurdle placed before the adoption of an innovation. Highlighting the distinction between initial adoption and continual usage, Lu, Yao and Yu (2005) stress the factors mitigating to general usage are not necessarily the same as those that may affect initial adoption; thus identifying these criteria is an integral challenge. Yang et al. (2012) supports such a declaration, stating that for several adoption studies, user held perceptions of beliefs, attitudes, and external stimuli may be different for initial adoption, or the degree of influence may differ. Furthermore, they stress that the temporal evolution of these factors across pre-adoption and post-adoption stages may be substantial. When individuals encounter a new consumption decision they are not familiar or experienced with (such as the adoption of an innovation), they must not only evaluate the product and how it makes them feel, but their trust in it, how risky they believe the purchase to be, the impact this product would have on their friends and family, if it really is superior to existing products, and many more. Thus, in the pre-adoption stage, an individual encounters many variables beyond those purely related to the product itself, and these variables can often be hugely influential, even more so than those related to the product (Ajzen and Fishbein, 1980; Rogers, 1983).

Adopter categories:

Rogers (2003, p. 221) defines the rate of adoption as "the relative speed with which an innovation is adopted by members of a social system". Ronteltap et al. (2007) endorses such a view, agreeing that individuals can be classified in terms of the relative speed at which they adopt innovations. The autghors further state that such adoption happens across a standard normal distribution curve. Innovation characteristics play an integral role in the uptake for adoption of an innovation, with such characteristics "used for meaningfully classifying potential users into distinct groups and providing different roles and supporting structures in order to facilitate effective diffusion of a new technology" (Yi, Fiedler, and Park, 2006; p. 394). Thus, adopter groups (excluding non-adoption) involve the classifications of members of a social system on the basis of innovativeness (Rogers, 2003). As innovativeness is considered "a relatively-stable, socially-constructed, innovation-dependent characteristic that indicates an individual's willingness to change his or her familiar practices" (Braak, 2001; p. 144), it is integral that adopter categories reflect the nuanced innovativeness of these groups and their predisposed tendencies towards adoption and change. While adopters belonging to the same category may be assumed to possess similar characteristics regarding their adoption of innovations, Rogers (1995, 2003) suggests that there are important qualitative differences between adopter categories, and that each category is influenced by a different set of factors. In support of this perspective, Moore (1999) suggests that each adopter group is unique, with obvious differences existing between them. Agarwal and Prasad (1998) detail that the innovation adoption curve is likely to exist at a micro and domain-specific level, exhibiting the following adopter categories (from the earliest adopters to the latest):

Innovators:

Innovators are those individualswho are prepared to take a risk and try out an innovative idea or product before members of the social system have adopted (Moore, 1999; Rogers, 2003). The first to adopt, they are capable of understanding and valuing the benefits a new innovation may offer, and make decisions based upon their own intuition and vision rather than the recommendations or referrals of others. Such consumers are proponents of radical change (Kirton, 1976) and experiences of new ideas or discontinuous technologies, acting as the gatekeepers who bring innovations from outside into the social system, even in the face of financially unprofitability and substantial uncertainty. Furthermore, the enterprising nature of innovators requires them to have significant technical knowledge about new products. Evidently, such a segment represents a very small portion of the consumer population, estimated at approximately 2.5% (Rogers, 2003).

Early adopters:

These consumers are not as risk-taking or as technically knowledgeable as innovators, but they share many similar characteristics, such as a strong willingness to try out new products, and are even grouped together in the same consumer segment by some (Brancheau and Wetherbe, 1990). Early adopters adopt because of their own innovativeness, and not due to the social pressures of others (Moore, 1999; Yi, Fiedler, and Park, 2006), thus they are more limited to the boundaries of the social system than innovators. Resultantly, other members of the social system often seek advice from early adopters for advice on new innovations (Rogers, 2003). As leaders, they "play a central role at virtually every stage of the innovation process, from initiation to implementation, particularly in deploying the resources that carry innovation forward" (Light, 1998; p. 19). Evidently, their attitudes towards innovations are very important, as "Early adopters put their stamp of approval on a new idea by adopting it" (Rogers, 2003, p. 283); a key factor in an innovation's diffusion.

Early majority:

Early majority consumers tend to be driven by a strong sense of practicality, choosing to let others adopt first, before using early adopting consumers as references (Moore, 1999; Rogers, 2003). Hence, these consumers play more of a "followers" role in the social system, with Moore (1999) identifying a substantial gap (in time) separating the early adopters from the early majority. However, despite taking more time than innovators and early adopters, the early majority still adopts before half of their peers, and is deliberate in adopting. Regarding the size of the segment, the early majority represents approximately one third of all adopters (Rogers, 2003).

Late majority:

Representing a similar size portion is the late majority who only adopt an innovation once it has become an established standard throughout the social system. These consumers do not adopt unless they are comfortable with their abilities to operate the product, and as such, the late majority desire technical support, and choose to buy from well-established, and reputable retailers (Yi, Fiedler, and Park, 2006). Although some late majority consumers are often sceptical about new innovations and their outcomes, they may be led to adopt because of social and economic necessities, and they are often persuaded to adopt by close interpersonal networks, as opposed to mass media (Rogers, 2003).

Laggards:

Representing the final one sixth of all adopters, laggards have a tendency to be very cautious about innovations, ad adopt only when it becomes a necessity. These consumers take a very traditional and conservative approach to innovations, and are exclusively followers. The interpersonal network of this segment tends to consist of other laggards from within their social system, and due to their lack of knowledge or awareness about an innovation laggards need to first be confident that the innovation's performance is acceptable before adopting, thus making adoption decisions well and truly after innovations have diffused through other members of the social system (Rogers, 2003).

For a more concise split of adopter segments, Rogers (2003) proposes that the five segments should be split into two main groups: early adopters which comprises of innovators, early adopters and the early majority, and late adopters which comprises of the late majority and laggards. The scholar recognizes distinctions between these two groups in terms of socioeconomic status, personality variables, and communication behaviours, claiming that "the individuals or other units in a system who most need the benefits of a new idea (the less educated, less wealthy, and the like) are generally the last to adopt an innovation" (Rogers, 2003, p. 295). Interestingly, Rogers does not identify any significant differences between the two groups pertaining to age.

Status quo bias theory:

Status quo bias (SQB) represents an individual's tendency to remain with the current state unless there are strong forces opposing it (Kahneman and Tversky, 1979). Samuelson and Zeckhauser (1988) detail SQB as a behavioural tendency to choose a status quo option disproportionately often, while Burmeister and Schade (2005) note that for decisions invoking a cognitive decision-making process, it is expected that a status quo bias would be dominant over the opposing variety-seeking behaviour tendency. Meyerhoff and Liebe (2009) discuss such bias in laymen's terms, revealing that individuals have the tendency to choose the current situation, when faced with a choice between new alternatives and the current situation. Herein, Scarpa, Ferrini, and Willis (2005) suggest such behaviour reveals itself in a systematic inclination to display a different attitude toward status quo alternatives, with SQB theory attempting to explain individual's preference for maintaining their current status or situation (Kim and Kankanhalli, 2009; p. 569). In exemplifying SQB, Johnson et al. (1993) discover with regards to automobile insurance, that even when legislation is changed consumers' choice of automobile insurance policy is heavily influenced by what used to be the legislative status quo. Such resistance to change illustrates how difficult it could be to encourage individuals to change their behaviour and adopt new products, situations, or ways of thinking. This may lead one to assume that consumers are inherently pre-disposed to maintain the status quo when exposed to an innovation in the early stages of adoption.

Status quo bias explanations:

Samuelson and Zeckhauser (1988) demonstrate across several experiments and over a variety of decisions, that individuals have a strong tendency towards the status quo when presented with an alternative. Examining it in an economic context, the authors are amongst the first researchers to experiment with SQB, with the theory further extended to many other areas, including electric power consumers (Hartman et al., 1991), resistance to government reforms (Fernandez and Rodrik, 1991), general decision-making (Inder and O'Brien, 2003), and adoption of information systems (Kim and Kankanhall, 2009). In the development of SQB theory, Samuelson and Zeckhauser (1988) classify their explanations for maintaining the status quo into three categories: cognitive misperception, rational decision-making, and psychological commitment.

Cognitive misperception:

Kahneman and Tversky (1974) define cognitive misperception as the phenomenon observed in human decision-making which is also known as loss aversion. They assert that when making decisions, individuals have the tendency to weigh potential losses greater than potential gains. Evidently, Samuelson and Zeckhauser (1988) detail that cognitive misperception explores the psychological principle that minor losses from changing from a current situation may be perceived as being larger than they may actually be, with disadvantages perceived as more salient than advantages (Tversky and Simonson, 1993). Herein, the negative effects of perceived losses on attitudes may be amplified because of such misperception (Kim and Kankanhalli, 2009). Meyerhoff and Liebe (2009) suggest that if an individual wishes to avoid losses, they will have a strong tendency to stick with the status quo, as the disadvantages of leaving it are perceived to be greater than the advantages. Resultantly, Samuelson and Zeckhauser (1988) believe that the status quo alternative holds a natural advantage over alternative decisions, as the perceived costs of a new alternative are likely to exhibit more influence than the associated perceived benefits.

Rational decision making:

As has already been identified, individuals evaluate the relative costs and benefits of new decisions, such as adopting a new product. When these costs are believed to outweigh the benefits, consumers are likely to retain the status quo and resist an innovation. Hence, an understanding of the costs associated with a new product is imperative for marketers. Rational decision-making is considered an assessment of the relative costs and benefits of change prior to accepting and changing to an alternative. From this perspective, a status quo bias will be enacted when costs exceed benefits, with two types of costs considered: transition costs, and uncertainty costs (Kim and Kankanhalli, 2009). Transition costs represent those costs incurred in adapting to a new situation, with Samuelson and Zeckhauser (1988) categorizing such costs as either transient during the change, or permanent as a result of the change. Uncertainty costs represent psychological uncertainty or perceptions of risk that are associated with a new alternative, and may include anxiety or scepticism pertaining to an apparent change.

Psychological commitment:

The final explanation for maintaining the status quo is psychological commitment. Samuelson and Zeckhauser (1988) identify the three main factors which contributing to psychological commitment: sunk costs, social norms, and efforts to feel in control. Sunk costs represent the previous commitments an individual may have that are causing reluctance in switching to an alternative. Social norms are the pressures of others discouraging a change which will strengthen an individual's status quo bias. Control represents an individual's desire to direct their own situation, causing status quo bias as one does not wish to lose control by changing to an unknown or unfamiliar alternative (Kim and Kankanhalli, 2009).

Status quo bias and decision-making:

Claudy et al. (2010) identify that most decisions have the option to maintain the status quo, or in other words, not to change from existing behaviours. Lewin (1947) suggests that social systems have the tendency to maintain status quos by resisting change, and preserving the initial state. However, this is a characteristic they refer to as "homeostasis". The author's delineation of status quo considers it an equilibrium between forces that oppose and promote change. Herein, successful change is dependent upon breaking the equilibrium by altering the dynamics of these forces. Scarpa, Willis, and Acutt (2007) offer a potential explanation for as to why individuals prefer the status quo though, stressing it (the current option or situation) is *experienced* by an individual, whereas the utility associated with alternatives are only conjecture or speculation in decision-making. Ahluwalia, Gimpel, and Varshney (2010) offer a related perspective, suggesting that decision-making preferences are contingent on the framing of a problem, its method of elicitation, and the choice's context. Thus, contrast plays a strong role in decision-making by influencing the reference point to gauge value. Regarding this initial reference point (the current situation or option), the endowment effect as delineated by Kahneman et al., (1991) suggests that individuals have a tendency to value an object more when they own it. Resultantly, convincing consumers to move-on from this object and adopt an alternative becomes even more difficult. Similarly, Ortoleva (2010; p. 1) reveal "a considerable amount of recent evidence has shown that individual decision makers often attach an additional value to their default options or status quo choice".

A large factor in any decision involving unfamiliarity (such as innovation acceptance) is uncertainty. When an individual is familiar with an alternative option, they may feel less worried about making a mistake by maintaining their status quo and may choose to adopt an alternative (Ortoleva, 2010).

Masatlioglu and Ok (2005) detail that as individuals possess an existing solution (one which is likely to be effected by the endowment effect), they compare alternatives with this current holding, and if confused or indecisive, will always resolve the situation in favour of the status quo. However, if alternative options are conclusively superior to the status quo and no such confusion exists, the initial position of the individual becomes irrelevant and the decision will be made on conventional decision-making criteria. When exploring alternative options, Samuelson and Zeckhauser (1988) discover that while SQB is influential in decision making, this bias increases as the number of alternatives within a consideration set increases. Therefore, the more choices to be evaluated, the more mental effort demanded to make a decision, and the more likely an individual is to resort to the status quo. Resultantly, consumers may not want to be aware of alternatives, as knowledge of alternatives creates decision-making costs (Thaler, 1980). Thus, "instead of considering all available information in the decision making process, people tend to rely on what they have chosen before, on what represents the current state, or even what someone else has chosen for them and consequently is the status quo" (Burmeister and Shade, 2007; p. 344). Herein, remaining with a current situation reduces the need to evaluate alternative options, and reduces transaction costs involved in the decision-making process. Considering such discussion, one can empathize with the tendency to stay with the status quo when faced with a new alternative.

Innovation diffusion:

Rogers (2003, p.5) defines diffusion as "the process by which an innovation disseminates over time among the members of a social system". Herein, adoption is an individual behavioural practice, whereas diffusion addresses collective adoption. Research exploring the diffusion of innovations has a long and extensive history dating back to early studies of the diffusion of hybrid corn seeds amongst Iowa farmers (Ryan and Cross, 1943). However, the most substantial contribution to innovation research however is provided by Everett Rogers. After scrutinizing many innovation studies, Rogers (1983, 1995, 2003) published seminal studies exploring innovation adoption and diffusion. In acknowledging the significance of such research, Ronteltap et al. (2007; p.4) adorn the scholar with the accolade of providing "a major contribution in popularising these original findings and extending on them to develop a more comprehensive theory on diffusion of innovations, which has been a fruitful source for a wide spectrum of applications". A variety of authors have explicitly utilized Rogers' innovation diffusion taxonomy to understand such adoption, with Yang et al. (2012) highlighting the validation of this framework by many studies, including Choudhury and Karahanna (2008), and Kim, Mirusmonov and Lee (2010).

In developing such an applicable framework, the research of Rogers (1983, 1995, 2003) does face a couple of practical limitations. As much technological innovation diffusion research does, Rogers (2003) uses the word "technology" interchangeably with "innovation". However, as many innovations can be extremely practical, simplistic and ingenious, they are often not associated with any considerable level of technological interaction or extensive technological research and development; hence the idea of the two terms as synonyms is one that deserves reconsidering. Furthermore, as much of Rogers' (1983, 1995, 2003) theory of diffusion is defined at a fairly general level, it is indubitably widely applicable. However, such generality jeopardizes the specificity with which the information is applicable to a particular innovation context. Nonetheless, Rogers' (1983, 1995, 2003) innovation diffusion framework stands as a near-unrivalled constituent in the academic literature through its delineation that the likelihood of an individual adopting a specific innovation is dependent on four key components: an innovation's diffusion characteristics, communication channels, time, and social systems.

Innovation diffusion characteristics:

In light of the rapid introduction of new products into consumer markets and the extent to which these products are assimilated into and realign consumer's lifestyles, identification of the characteristics of innovations which have powerful effects on their acceptance decisions is of immeasurable value to marketers. Rogers (1983) explores just this, identifying five general attributes of an innovation that demonstrate consistent influence on adoption, entitling them innovation diffusion characteristics (IDC). The author identifies the following IDCs, suggesting the the perceptions of such constructs are pivotal in predicting the rate of adoption of innovations. They are:

- *Relative advantage*: the degree to which an innovation is perceived to be better than its precursor, or delivers a certain advantage over preceding technologies or methods
- *Complexity*: the degree to which an innovation is perceived as being difficult to use or understand
- *Compatibility*: the extent to which an innovation is perceived as being consistent with the existing values, needs or experiences of potential adopters
- *Trialability:* the degree to which an innovation may be experimented with on a limited basis prior to adoption
- *Observability:* The degree to which the results of an innovation are easily visible and communicable to others

In justifying their purpose, the scholar describes the innovation-diffusion process as an exercise of uncertainty reduction where the attributes (or characteristics) of an innovation help adopters decrease the uncertainty surrounding an innovation. With this in mind, Moore and Benbasat (1991) assert that Roger's definitions are based on the perceptions of the innovation, and not the perception of using or adopting the innovation. Thus, innovations diffuse because of consumer's decisions to adopt them, as these perceptions are influenced by the characteristics of the innovation. Herein, Rogers (2003) states, innovations that offer more relative advantage, compatibility, trialability, observability, and are not complex, will be adopted faster than other innovations. However, "getting a new idea adopted, even when is has obvious advantages, is difficult" (p.1), and positive evaluations of all these variables are likely to speed up the innovation-diffusion process.

Communication:

Communication about an innovation is an integral process through which an individual becomes aware and knowledgeable about a new innovation (Ronteltap et al., 2007), ultimately aiding its adoption. The

authors suggest that an individual participates in communication regarding an innovation to obtain information and gradually decrease uncertainty about the potential consequences associated with the innovation. Thus, the decision-making process centered on adoption, passes from initial knowledge, to the formation of an attitude, followed by the decision to adopt or reject the innovation, and finally the implementation of the new idea and confirmation of this decision.

Time:

Rogers (2003) recognizes the time component of innovation diffusion as one that is ignored the most in behavioural research. The author believes that as adopter categorization and the rate of adoption all have a time dependency, the inclusion of time into his diffusion model provides a defining strength. As mentioned above, time is a key component of some measures of an individual's innovativeness (i.e. Rogers and Shoemaker, 1971; Im et al., 2007). However, in much research, references to a time dimension are not made, and as such a construct is concerned with specific innovation perceptions, are often employed in assessments of pre-adoption (Sahin, 2006).

Social system:

The social system is recognized as a set of interrelated units working together to accomplish a common goal. Diffusion of innovations in the social system is influenced by the structure of the system, which is comprised of the pattern of arrangements of the units in the system. The power important others exert over consumers is discussed above, but the nature of the social system is also influential on the innovativeness of individuals within the system (Rogers, 2003). Evidently, the relationships between individuals within a network influence an individual's perceptions of their own (and others) innovativeness, as well as the characteristics of an innovation.

Acceptance drivers: personal perceptions:

Every consumer enters a consumption decision in a unique period of his or her life that will never again be repeated. Thus, when a consumer is involved in such decision-making, their perception of an innovation is linked with a unique perception of themselves at that point in time. Such perceptions are transient, constructionist assessments of an individual's own prerogative of the adoption environment, and fortified by a key assessment of themselves. Perception of the self is comprised of the "psychological make-up of the individual consisting of interrelated attitudes which are acquired in relation to body, objects, family, persons, groups, social values and institutions (Ross, 1971; p. 40)". It is here that consumers assess themselves in interacting with a new object. This literature review explores such decision-making through the impact of personal perceptions: an individual's perceived level of internal and external control, knowledge of the relevant product domain, innovativeness within that domain, and the potential adopter's affective state.

Perceived behavioural control:

Further extending the conceptualization of adoption, the theory of planned behaviour (TPB) introduces the construct of perceived behavioural control (PBC) to the academic lexicon, reflecting a user's belief that they have the necessary resources, capabilities, or sense of control in performing a behavior successfully. Venkatesh (2000) note that control-related constructs are separated into internal constraints (i.e. self-efficacy) and external constraints (i.e. facilitating conditions), with Ajzen (1991) introducing the construct to account for adoption decisions in which individuals may lack complete control over their own behaviour (Ajzen, 1991). Self-efficacy theory is derived from psychology (Bandura, 1986) and is concerned with a user's perception of their capabilities with regard to new technology (Compeau and Higgins, 1999). Self-efficacy has little to do with widespread diffusion or adoption processes beyond their impact at the individual level of choice (Stafford, Stafford and Schkade, 2004). However, it is often described as a belief in one's ability to organize and execute a particular course of action (Bandura, 1986). Seemingly, self-efficacy is particularly relevant for novice users who have not yet acquired the requisite skills to obtain useful information to deal with a particular technology or innovation (Eastin and LaRose, 2000). As users become more self-efficacious with regards to an innovation, the expectations that they will obtain specific outcomes also increase and this encourages more use (LaRose and Eastin, 2004). Facilitating conditions are utilized in Venkatesh et al.'s (2003) UTAUT as the degree to which an individual believes that organizational and technical

infrastructure exists to support the use of the system. Herein, the construct reflects the environmental factors that encourage or limit acceptance. Triandis (1979) outline that facilitating conditions reflect the availability of the resources needed to perform a behaviour, and such may include access to time, money and any specialized resources. Evidently, user's perception of PBC (through their "facilitating conditions" construct) is a direct determinant of technology usage (in the UTAUT). As argued by Lu, Zhou and Wang (2009), despite strong intent to use a technology, users will not adopt it if they lack the necessary skills, resources, or sense of control. Thus, as innovations require interaction with a new product, one can assume that a perception of control and competence on the user's behalf will facilitate acceptance. Venkatesh et al. (2003), and San Martin and Herrero (2012) support such an assertion by discovering that control, such as PBC, is a key determinant of acceptance. Furthermore, Shih and Fang (2004) concur, delineating both facilitating conditions and self-efficacy as sub-dimensions of perceived behavioural control, supporting the importance of the construct in acceptance studies.

Knowledge:

Knowledge is defined as the information an individual stores within memory (Engel, Blackwell, and Miniard, 1995), with such information representative of the accumulation and associations that a consumer acquires regarding the attributes, benefits and needs satisfied in consumption (Flynn and Goldsmith, 1999). Herein, Pieniak, Aertsens and Verbeke (2010) accept the academic consensus that knowledge is a key construct in information processing, and evidently consumer decision-making. Petty and Cacioppo (1986) support that the greater the amount of knowledge or information relevant to a behaviour, the more an individual is likely to carefully and effortfully consider performing said behaviour. Similarly, Demerrit (2002) recognize a lack of knowledge and low awareness (in the context fo food consumption) as a barrier to consumption, with Verbeke (2008) identifying that consumers must have a sufficient level of knowledge substantiated through reliable information for knowledge to have a favourable impact on decision-making.

Brucks (1985) proposes that the types of knowledge consumer's possess can be split into three categories. The first of which is identified as prior experience with a particular category. Venkatesh, Thong and Xu (2012) address such experience in the context of acceptance, identifying prior experience as the opportunity to use a product; thus operationalizing it as the passage of time from the initial usage of a technology by an individual. In assessing the other types of knowledge, Moorman et al. (2004) address objective and subjective knowledge, identifying that researchers frequently

distinguish between actual knowledge and a consumer's own assessment of the knowledge they possess. The former is recognized by Brucks (1985) as objective knowledge (OK), and is identified when measured through some form of test regarding how much knowledge an individual possesses. Alternatively, subjective knowledge (SK) is defined by Brucks (1985) as what the consumer thinks he or she knows. Park, Mothersbaugh, and Feick (1994) suggest such knowledge relates to an individual's perceptions of how much they know about a product class. Herein, Flynn and Goldsmith (1999) define SK as "as a consumer's perception of the amount of information they have stored in their memory" (p. 59). As SK is dependent on one's belief of their own knowledge level (Moorman et al., 2004), it incorporates elements of uncertainty, with such uncertainty reported as a barrier to consumption by Thøgersen (2007). However, despite this potential uncertainty, Pieniak, Aertsens and Verbeke (2010) propose that SK should be considered a very important factor that influences consumption.

The level of product knowledge possessed by a consumer can have substantial outcomes on product evaluations and adoption intentions. Thus, as outlined by Chang (2004), high and low knowledge consumers will differ by how they process information. Wood and Moreau (2006) suggest that all consumers are likely to have some experience with existing products, however this level of experience will vary across consumers, and whilst this knowledge may not be perfectly calibrated, it is likely to provide a more accurate prediction of actual usage experience.

In scrutinizing those with higher knowledge, the authors suggest that such consumers have developed solid decision criteria and more complex, and better-constructed schema related to products of interest. These consumers activate relative knowledge structures automatically (Chang, 2004) and expend less cognitive effort when processing information (Alba and Hutchinson, 1987). Herein, once such consumers have tried a product, their product experience becomes influential in the assessment of expectations. Considering the uncertainties associated with innovation acceptance, Rogers (2003) delineates that low levels of knowledge lead to a lack of predictability and information regarding adoption outcomes, and evidently, low-knowledge consumers are more likely to learn about products from heuristic cues and personal hands-on learning (Biswas and Sherrell, 1993). As a result of their low knowledge, such consumers are often unable to make confident product judgments, even in the event of direct product experience, and as a result, are likely to submit to the influence of advertising, and may ignore what personal experience suggests (Chang, 2004).

Personal innovativeness:

Bartels and Reinders (2011) disclose that the operational definition of innovative behaviour is quite varied, highlighting such examples as the usage of new products (Cotte and Wood, 2004), ownership of new products (Im et al., 2007), purchase of new products (Goldsmith et al., 1995), trial of new products (Feick and Price, 1987; Steenkamp and Gielens, 2003), and variety-seeking behaviour (Baumgartner and Steenkamp, 1996). Regarding such definitions, Rogers and Shoemaker (1971) conceptualize innovativeness as the degree of how early an individual is to adopt an innovation. Foxall, Goldsmith, and Brown (1998; p. 41) conceptualize consumer innovativeness as "the tendency to buy new products in a particular product category soon after they appear in the market and relatively earlier than most other consumers in the market segment". Similarly, Midgley and Dowling (1978) classify innovativeness as the extent to which individuals are receptive to new ideas, and make decisions about innovations independently of the communicated experiences of others. Underlying all these definitions as to what makes an innovative consumer is an individual's tendency to break from their status quo and accept something new, often before many others.

Innovative consumers:

Innovative consumers tend to demonstrate different consumption patterns, and may comprehend stimuli differently to those consumers who will adopt later, if at all. Building upon Roger's (1983, 1995) innovation diffusion theories, Agarwal and Prasad (1998) argue that individuals develop perceptions and beliefs about new products through combining information available from a variety of media. The authors believe that innovative individuals will develop more positive beliefs about an innovation when exposed to the same information as less innovative individuals. Several authors (Rogers, 1983; 1995; Lu, Yao, and Yu, 2005) present complimentary arguments, identifying that highly innovative consumers are active seekers of new information about new products and ideas. Exploring the sources of information pertaining to innovations, Rogers (1995) suggests such flows through social systems, encountering a range of potential adopters along the way. Subsequently, potential adopters comprehend said information and form perceptions of the characteristics of an innovation, with these perceptions later serving as drivers of innovation adoption.

Further making themselves distinct, innovative consumers are recognized as capable of coping with large amounts of uncertainty, hence they tend to develop more favourable intentions towards adoption of new products (Rogers, 2003). Such a tolerance is integral, as Ostlund (1974) identifies that the feasibility of an innovation's adoption is dependent on the perceived uncertainty / risk related to it. Hence, innovative consumers embrace opportunities to buy unfamiliar new products, and are prepared to embrace cutting edge-innovations (Rogers, 2003). In addition, Joseph and Vyas (1984) suggest innovative consumers are less hindered by perceptions of danger and are more open to the adoption of new technologies. Further detailing the idiosyncrasies of innovators, Lu, Yao, and Yu (2005) advocate that as individuals with higher innovativeness have the tendency to be more risk-taking, it is likely that they develop more positive intentions towards using innovations or new technology. Thus, one can delineate that the innovative disposition of such individuals can serve as a primary and direct determinant for acceptance.

Domain specific innovativeness:

It is highly unlikely that a consumer will buy every new product they are aware of (Gatignon and Robertson, 1985; Vandecasteele and Geuens, 2010). Thus, it is not solely personally traits that are influential in innovation adoption, but also a consumer's perceptions of the product or product category (Ostlund, 1974). Evidently, end-user perceptions are often formed prior to adoption, and may vary with an individual's dispositional characteristics (Lewis et al., 2003). Acknowledging the research of Goldsmith and Hofacker (1991), and Chao, Reid, and Mavondo (2012) mirror such a perspective, suggesting it is problematic to accept consumer innovativeness to be general across domains. Thus, considering the shortcomings associated with global personality-trait approaches to innovativeness, domain-specific innovativeness is conceptualized as innovativeness specific to a particular product category or domain. In their critique of three prominent technology-acceptance models (the TAM, TAM2 and UTAUT), Lu, Yao and Yu (2005) argue against the absence of such domain-specific measures of innovativeness. Evidently, the authors employ a domain-specific measure of personal innovativeness adapted from Agarwal and Prasad (1998) which asserts that innovativeness is defined specific to product (or service) categories or domains, not across all innovations. Yang et al. (2012) support the use of this personal innovativeness measure, substantiating the salience of personality traits, specifically personal innovativeness, alongside instrumental beliefs and social influences in consumer adoption. Across a variety of products and nationalistic cultures including USA, Germany and France (Flynn and Goldsmith, 1993; Goldsmith et al., 1998; Xie, 2008), Chao, Reid and Mavondo

(2012) assert that domain-specific measures of personal innovativeness are found to be the most useful scale to measure consumer innovativeness in a specific product category.

Affect:

The role affective processes play in an individual's evaluations of particular subjects, objects, or situations has been the subject of much attention in consumer behaviour research (for an extensive review, see Cohen and Areni, 1991). However, despite such discourse, a conclusive definition that clearly characterizes and distinguishes the concept from other states still remains elusive. Of such attempts, Clore, Ortony and Foss (1987) offer a fine description, stating an emotion is a valenced affective reaction to an individual's perceptions of a particular subject or situation. Additionally, the authors delineate what does not constitute an emotion, including non-valenced cognitions such as interest and surprise, bodily states such as sleepy and droopy, and subjective evaluations of people such as self-confident or ''feeling abandoned''. In the development of consumption related emotions studies, consumer behaviour researchers have used a plethora of frameworks developed in the field of psychology as a foundation to further these developments. However, it is widely recognized that substantial divergence exists concerning the content of the affect studied in consumer research (see subsequent references). Herein, researchers of consumer affect have focused their attentions towards emotional responses to advertising (Derbaix, 1995), the mediating role of emotions on consumer satisfaction (Phillips and Baumgartner, 2002), services (Oliver, 1994), one's favourite possessions (Schultz, Kleine, and Kernan, 1989), product attitudes (Dube et al., 2003), and the connection between cognitive appraisals and experienced emotions in a hierarchical structure (Ruth, Brunel and Otnes, 2002). Whilst such studies have successfully investigated emotions within these contexts, the measures used are not necessarily appropriate for application in every field of consumer behaviour.[1]

Affect in adoption studies:

The influence of affect on consumption is not to be excluded from consumer adoption studies. In acknowledging the power of emotions, a profound limitation is identified in adoption frameworks previously developed, be they technology or innovation focused. Kulviwat et al. (2007; p. 1061) address such a limitation, suggesting that "emphasis on cognition might be appropriate for an organizational context where adoption is mandated and users have little choice regarding the decision. But it is an insufficient explanation for consumer contexts in which potential users are free to adopt or

reject new technology based on how they feel as well as how they think". The authors reveal that despite the empirical potential affective measures possess, few researchers have explored affect choosing instead to focus on cognitive constructs alone. Such studies may highlight what people think about an innovation or piece of technology, but they offer little insight into how they make consumers feel and the impact emotions can have on adoption or rejection.

Regarding innovation acceptance research, considering its seminal author (Rogers, 1983, 1995, 2003) identifies no affective components in his diffusion of innovations theory despite stating that the persuasion stage where innovation characteristics are evaluated is more centered on feelings or emotion. Herein, it is unsurprising that academia has not exhausted the affective drivers of innovation adoption to date. Similarly, Wood and Moreau (2006) stress the importance of integrating emotions into such studies, acknowledging that "prior research on new product adoption focuses largely on cognitive processes, despite the increasing knowledge of the role of emotion in product consumption" (p. 54). The authors emphasize the dynamic nature of emotions in innovation diffusion, suggesting that emotions created in the early use of (complex) new products influence product evaluations beyond the traditional diffusion focus of costs / benefits. Within the specific context of innovation acceptance, Oliver and Winer (1987) identify that as the consumer has no direct category experience (with the innovation) the gap between the expected and actual outcomes is likely to be high. Thus, Wood and Moreau (2006) suggest that the emotions experienced when exposed to innovations are likely to be more powerful and predictive of overall evaluations, suggesting "emotions resulting from early experience with the product (which therefore might be dismissed as ephemeral) can have a lasting influence on diffusion" (p. 54). The scholars further identify that such influence can occur beyond that of concrete evaluative criteria, stressing that emotion's influence product evaluations at all points in time, and that the act of decision making does not read the end for the influence of emotions.

- *Footnote:*

1. An extensive discussion of established emotion measures and their evolution is found in the Methodology chapter of this research.

Acceptance drivers: innovation perceptions

Rogers (2003) describes the innovation-decision process as "an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation" (p. 172). Herein, the potential adopter's perception of the innovation itself is indubitably salient in their acceptance decision. This literature review explores key perceptions of a new product innovation, including relative advantage, compatibility, complexity, perceived risk / uncertainty, and value for money, discussing their impetus as drivers of innovation acceptance.

Relative advantage:

As an innovation diffusion characteristic, Rogers (1983) define relative advantage (RA) as the degree to which an innovation is perceived to be better than its precursor, or delivers a certain advantage over preceding technologies or methods. Moore and Benbasat (1991) detail that innovations are typically developed with a specific purpose in mind, thus they must be perceived to fulfill said purpose better if they are to be adopted. In light of this, the authors propose RA as an empirical construct of substantial intuitive appeal and strong generalizability. Yang et al. (2012) outline (in the context of mobile payment services), that relative advantage can be offered through ubiquity, convenience and efficiency over traditional systems, while Rogers (1983) postulates that RA may incorporate elements such as image, economic benefits, and satisfaction. Additionally, the author notes that often those individuals who adopt an innovation early do so because of the perceived status that is associated with possessing a new product that performs better than those it supersedes. Thus, social status benefits are also considered to be an important component of relative advantage. Kulviwat et al. (2007) detail that in the consumer context, individuals are able to compare the characteristics of one or more options deciding which is most advantageous to them, thus RA is anticipated to influence attitudes as a result, and the authors further acknowledging users are more inclined to adopt an innovation if it exhibits perceived advantages, as opposed to those with little to no additional benefits over the alternatives. Unsurprisingly then, through a meta-analysis of innovation characteristics, Tornatzky and Klein (1982) discover that relative advantage is one of just a few constructs confirmed to be consistently related to adoption, while research by Plouffe, Hulland, and Vandenbosch (2001) reveal RA to be the most powerful predictor of adoption intentions in their study.

Compatibility:

Perceived compatibility is conceptualized as the extent to which an innovation is perceived as being consistent with the existing values, needs or experiences of potential adopters (Rogers, 1983), while Yang et al. (2012) consider compatibility (in their research context) as the perception that an individual can successfully integrate a new service into their daily life. Shih and Fang (2004) dictate that an innovation is more likely to be adopted to the extent that it does not defy social or cultural norms, while Tornatzkey and Klein (1982) discover a higher probability that innovations will be adopted when they are compatible with job responsibilities and the value systems of individuals. Thus, one can assume that if an innovation is compatible with an individual's needs and lifestyles, then uncertainty will be decreased and the rate of adoption is likely to increase. Despite compatibility performing (alongside RA) consistently in its relationship with adoption (Tornatzky and Klein, 1982; Yang et al., 2012), the construct suffers from inconsistent operationalization across a range of studies, particularly in regards to societal norms (Taylor and Todd, 1995a,b), and daily habits (Tornatzky and Klein, 1982). Emphasising the construct's strength, Yang et al. (2012) suggest that the importance of compatibility has filtered through to practitioners, as points of emphasis in advertising are now shifting from promoting utilitarian benefits to fulfilling personal desires that enhance the impact of compatibility on adoption intentions. Additionally, like innovation acceptance, compatibility is discovered to play a pivotal role in the resistance of an innovation, with Sheth (1981) suggesting that promoting the flexibility of an innovation to be compatible with consumer's lifestyles may be an effective strategy to reduce consumer opposition (i.e. resistance).

Complexity:

Complexity represents the degree to which an innovation is perceived as being difficult to use or understand (Rogers, 1983; Arts, Frambach and Bijmolt, 2011), thus the more an innovation is perceived as complex, the more learning costs of adoption will be involved (Hoeffler, 2003; Wood and Moreau, 2006). Therefore, it is assumed that the easier an innovation is to interact with, the stronger the connection with rapid adoption (Rogers, 1983). Evidently, Shih and Fang (2004, p. 216) propose that "Innovative technologies that are perceived to be easier to use and less complex have a higher possibility of acceptance and use by potential users". Arts, Frambach and Bijmolt (2011) note that such costs associated with complexity are likely to "weigh heavily at the behavior stage, as the need for specific behavior changes to successfully adopt the innovation becomes apparent". Evidently,

from an empirical perspective, complexity is the only characteristic of Rogers' IDCs that is negatively related to the rate of adoption (supported by Shih and Fang, 2004). Hence, excessive complexity can create obstacles to consumer adoption, and the more complex and innovation is perceived to be, the more consumers are inhibited to follow through on adoption intention with actual adoption behaviour (Alexander et al., 2008).

Perceived risk / uncertainty:

Perceived risk:

Quintal, Lee and Soutar (2010) detail that interest in the concept of risk begun in the 1940's when Knight (1948) suggested that risk is a critical component of economic activity. The authors further detail that risk is examined amongst a wide variety of contexts, including sociology (e.g., Douglas and Wildavsky, 1982), tourism (e.g. Lepp and Gibson, 2008) and marketing (e.g., Dholakia, 2001). In the consumer context, Gao, Leicheter and Wei (2012) have adopted Dowling's (1986) definition of perceived risk, detailing the construct as "the expectation of losses associated with adopting an innovation based on perceived uncertainty about adoption outcomes and the magnitude of adverse consequences" (p. 661). The authors further detail that risk perceptions incorporate adopter's perceptions of the size of the potential negative outcomes should adoption fail. Considering the nature of such interpretations, Dholakia (2001) conceptualizes perceived risk as a subjectively determined expectation of potential loss where some measure of probability is attached to each outcome. Gao, Leicheter, and Wei (2012) reveal that decisions with potentially large benefits and costs are hampered by elevated risks, suggesting that adopter's value assessments of discontinuous innovations may be associated with strong perceptions of risk. Herein, the scholars state, "it is their combination that eventually determines which innovations are adopted and which rejected" (p. 660).

Sweeney, Soutar and Johnson (1999) acknowledge perceived risk as a subjective expectation, conceptualizing the loss a buyer experiences when deliberating over the adoption of an innovation. Herein, Quintal, Lee and Soutar (2010) suggest that individuals can perceive different levels of risk associated with the same outcome. Beyond different levels of risk, many researchers (i.e. Jacoby and Kaplan, 1972; Dholakia, 2001) suggest that perceived risks arise from different types of potential losses. Of such losses, Chang and Chen (2008) outline several risk sub dimensions, specifying financial, performance, social, psychological, physical and time risks, while other risk dimensions of

psychosocial and frustration are explored by Dowling (1986). In their risk assessments, Quintal, Lee and Soutar (2010) conceptualize six equivalent sub dimensions to Chang and Chen (2008), detailing each as follows:

- *Performance risk:* the uncertainty of the performance of a product (Kleijnen, Lee and Wetzels, 2009) and covers the concern that a purchase will not function as desired or expected (Horton, 1976)
- *Financial risk*: the potential net financial loss of a purchase (Laroche et al., 2004)
- *Psychological risk*: anticipated anxiety or psychological discomfort (Roehl and Fesenmaier, 1992)
- *Social risk*: the likelihood that a purchase may damage other's opinions of the purchaser (Murray and Schlacter, 1990), or that one's social network (eg. reference groups, friends, colleagues or family) will not support adoption (Kleijnen, Lee and Wetzels, 2009)
- *Physical risk*: the probability of a potential threat to a person's health or appearance (Mitchell, 1998), or the perception of potential damage to a person or their property (Klerck and Sweeney, 2007)
- *Time (convenience) risk:* the likelihood that a purchase may take too much time or be a waste of time (Roselius, 1971)

As consumers are more often influenced by potential mistakes than maximizing utility, Mitchell (1999) argues that perceived risk plays a role in consumers' behaviour. Evidently, Kleijnen, Lee and Wetzels (2009) suggest that risk reduction strategies may be enacted to play an influential role in diminishing consumer resistance.

Perceived uncertainty:

Similarly to the perceptions of risk, Ronteltap et al. (2007) detail that uncertainty exists when information about situations are ambiguous, unpredictable, and complex; when information is unavailable or inconsistent; and when individuals feel insecure about the level of knowledge they possess. In recognizing the multi-dimensional nature of perceived uncertainty, Quintal, Lee and Soutar (2010) notes, "while these six types of potential loss have been examined in relation to perceived risk, it is likely they are also relevant to perceived uncertainty, as both constructs express beliefs associated with loss" (p. 798). Considering such, the construct of uncertainty is distinct from risk, as whilst perceived uncertainty is a subjectively determined expectation about a potential loss (like risk).

Therefore, it is not associated with a measure of probability attached to these possible outcomes (Bekcer and Knudsen, 2005). Rogers (2003) examines uncertainty relative to the newness of an innovation, suggesting that low levels of knowledge relevant to an innovation may increase the level of uncertainty. Subsequently, Frewer, Howard and Shepherd (1998) suggest uncertainty about the potential advantages or disadvantages of innovations and how they are communicated can impact on consumer acceptance. Herein, Brashers (2001) suggests that experiences of uncertainty can trigger management behaviours by users, such as seeking or avoiding information to manipulate uncertainty, and as Ronteltap et al. (2007) note, the degree of uncertainty determines whether a perceived negative outcome of an innovation is considered a cost or risk.

Conceptual nuance:

Considering such academic discourse, risk and uncertainty perceptions indubitably impact on the acceptance of innovations (Cardello, 2003; Frewer, Miles, and Marsh, 2002). Thus, while complexity, observability and trialability relate to uncertainty arising from the characteristics of an innovation (Rogers, 2003), risk perceptions capture uncertainty beyond an innovation's characteristics, extending to internal and external adoption contexts (Gao, Leicheter and Wei, 2012). Herein, Ronteltap et al. (2007) suggest that technologies often associated with credence qualities (costs and benefits that are unable to be conclusively verified by the individual consumer from personal experience) are prone to generating perceived risk and uncertainty. Evidently, the mentality that uncertainty acts as a function of risk is extant in contemporary research (e.g. Cho and Lee, 2006). In defining the ocnstructs, Rutherford (1992) illustrates the inherent link between the two concepts, supposing a distinction between risk and uncertainty where perceived risk is considered a state where number of possible events exceeds the number of events that will actually occur, with a measure of probability attached to it. From this perspective, perceived uncertainty does not have a probability attached to it, but is a situation in which an individual is unsure of what will happen. Dowling (1986) synthesized this relationship, suggesting that expectations of losses associated with adoption are based on the perceived uncertainty and the magnitude of adverse consequences.

Perceived value for money:

As consumers are known to arrive at value judgments through trade-offs between benefits and sacrifices (costs) (Lee et al., 2011), traditional views of financial value are conceptualized as the

monetary, or non-monetary benefit of purchasing products or services (Kotler, 1994; Naumann, 1995). According to the principle of distributive justice, customers seek value that is proportional to what they have invested in an exchange relationship (Homans, 1961). In viewing perceived value as a multi-dimensional construct, Sheth, Newman, and Gross (1991a, p. 12) support the existence of various sub-dimensions, arguing that value dimensions can be conceived independently as they "relate additively and contribute incrementally to choice". With consideration of the broadening conceptualization of value, Zeithaml (1988) considers perceived value a comparison between a product or service's "give" and "get" components; a perspective Gao, Leicheter and Wei (2012) employ in their conceptualization of potential adopter's overall assessment of an innovation's merit. In conceiving such perspectives, these authors highlight the central role customer perceived value plays in impacting upon purchase decisions.

Of the vast subjective perceptions of value, one of particular importance to the context of innovation acceptance is perceived financial value or value for money; defined by Sweeney and Soutar (2001) as an assessment of the utility derived from a product as a result of the reduction of its perceived short term and longer term (financial) costs. Winer (1986) identifies a cognitive component to price fairness, indicating that price judgments involve a comparison with a pertinent standard, reference, or norm (Munroe and Cox, 2004). Evidently, because of the aforementioned judgments and comparisons, price perceptions are particularly subjective, with a broad continuum of perceptions existing with varying influence on consumer behaviour. Lee et al. (2011) further delineate perceived monetary value as the customer's feeling about the effectiveness and benefits of a product purchase, viewing the construct as one of a financial perspective where consumers are assessed on the belief that the fees of an innovation are offset by the benefits they experience. Presenting a similar view, Dodds et al. (1991) suggests that customer's perceived monetary value is positive if the perceived quality is greater than the perceived sacrifice. In light of such prospects, perceived value assessments are considered subjective and differentially weighed, with quality and price clearly exhibiting differential effects on perceived value, a point that Sweeney and Soutar (2001, p. 206) endorse, suggesting "it could be argued that price and quality are functional sub-factors that contribute separately to perceived value and that they should be measured separately". Venkatesh, Thong and Xu (2012) argue that in consumer contexts, unlike workplace contexts, individuals are responsible for the costs of adoption, and these costs can heavily impact on adoption decisions.

Acceptance drivers: social perceptions

Innovation adoption is motivated by more than just sensory gratification or functional utility. For example, social factors such as the desire to impress others, to belong, or receive the approval of those people who are important to an individual (Vandecasteele and Geuens, 2010) are salient in innovation acceptance. This literature review examines these social drivers through social influences and the social value gained through image in innovation adoption.

Social influences:

The notion of complying with the social pressures around an individual is likely something all consumers have encountered at some point. Those consumers who possess greater than average susceptibility to normative influences conform to group norms to enhance their interdependent self-concept through belonging and affiliation with associative or aspirational groups (Lascu and Zinkhan, 1999). It is here that social influences may be most powerful. Kelman (1958) details that social pressures relate to the extent by which members of a reference group influence one's behaviour, with the perceptions of such pressures emanating from social networks in support or in opposition to a behavioural decision (Lu, Yao, and Yu, 2005). Acting alongside attitude in the TAM (its key conceptual contribution) is the unidimensional construct of subjective norms, representing an individual's normative belief concerning a referent, weighted by the motivation to comply with that referent (Shih and Fang, 2004). As a secondary antecedent to behavioural intention, the "inclusion of the subjective norm in the TRA represents an important addition when compared to the TAM. With this addition, the TRA takes account of the elements of social influences that are found in social explanations of the use of the media" (Shih and Fang, 2004; p. 215). Taylor and Todd (1995a) define subjective norms as an individual's perception of the social influences to perform a given behaviour, describing the construct as a function of a particular referent and motivation to comply with such expectations. As a key component of the TRA, subjective norms suggest that an individual is influenced by the normative expectations of other people, motivating them to comply with such expectations (Ajzen and Fishbein, 1980). Lu, Zhou and Wang (2009) describe the construct as an evaluation of whether or not important others perceive someone should engage in a behavior.

While employed as subjective norms in the TRA, Lu, Yao and Yu (2005) cite authors such as Taylor and Todd (1995a,b) in arguing the equivalence between the subjective norms and social influences

constructs. As part of the UTAUT adoption framework (Venkatesh et al., 2003) social influences is defined as the degree to which an individual perceives that important people believe he or she should use the system. Herein, subjective norms and social influences are of strong conceptual similarity. In exploring social influences, Lu, Yao and Yu (2005) suggest that the construct may "help to shape an individual's estimation of his or her confidence in or ability to use a system well" (p. 250). Lining social influences with decision-making, Fulk (1993) and Schmitz and Fulk (1991) suggest that information passed through an individual's social network influences their perceptions of a target technology, with Brass et al. (1998) recognizing such influences to be stronger in friendship networks. Karahanna and Straub (1999) promote a similar perspective, arguing that informational influences operate through internalization, where information from expert sources is integrated into ones own cognitive beliefs. Nasco et al. (2008) propose that the social setting of adoption can impact attitudes and behavioural intentions, suggesting that normative compliance may motivate consumers to respond to adoption decisions differently to how they would respond in the absence of social pressures. Herein, Nasco et al. (2008), and Kulviwat et al. (2009) support the importance of social influences to consumer product acceptance. Furthermore, a variety of authors acknowledge the criticality of social influences in innovation diffusion (e.g. Cooper and Zmud, 1990; Triandis, 1971). In offering an explanation for the salience of social influences in such a context, Burkhardt and Brass (1990) detail that innovations create uncertainty in adopters about anticipated consequences, and as individuals are generally uncomfortable with such uncertainty, they interact with social networks to consult on adoption decisions through informational and normative social influences. Salancik and Pfeffer (1978) suggest that the support of influential others has a strong impact on the decisions of potential adopters, as individuals adapt their beliefs, attitudes, and behaviours to their social context.

Image:

The subject of interpersonal influence in consumption has received substantial academic attention (e.g. Bearden et al., 1989; Phau and Teah, 2009); however such attention is not limited purely to complying with social or normative reference groups though. Tian, Bearden, and Hunter (2001) suggest that consumers build identity through the consumption of products such as innovations; a view further supported by Fisher and Price (1992) who observe that social rewards may stimulate the adoption of new products. Acknowledging the strong evidence in support of the social motivations behind consumption, Moore and Benbasat (1991) establish image as an additional construct beyond Rogers' classification that is considered salient in innovation adoption. Defined as the degree to which the use

of an innovation is perceived to enhance one's social status in a social system, Rogers (1983) delineates image as a component of relative advantage, arguing, "undoubtedly one of the most important motivations for almost any individual to adopt an innovation is the desire to gain social status" (Rogers, 1983; p. 215). O'Cass and Frost (2002) propose that self-image congruity explains why consumers seek products that possess images which enhance or boost one's self esteem, and why the opinion and approval of others is so essential to some, particularly those with a dominating interdependent self-concept. Herein, through consumption, one's desire to enhance their image through perceptions of themselves by others is likely a powerful social motivators in innovation acceptance, driven by eliciting jealousy or envy, being recognized for uniqueness, or displaying signals or symbols of status and prestige.

The self-concept is recognized as the totality of thoughts and feelings which one has in reference to themselves as a person (Rosenberg, 1979). Such a concept pertains not only to how someone sees themselves, but also how they would ideally like to be seen, as well as how they are seen socially, and how they would ideally be seen socially. Ingrained with the self-concept, self-image congruity is represented through equivalence in the psychological comparisons involving the perceptions of a typical product user and a consumer's self-concept (Sirgy et al., 1997). Individuals have a certain perception of their own self-image and actively attempt to preserve, enhance, or extend this image through many ways, including the consumption of products (Sirgy, 1985). Such perception may be enhanced through a perceived uniqueness, benefiting from the views of individuals concerning their similarity or dissimilarity to others (Snyder and Fromkin, 1977). In consumption, individuals are constantly evaluating these levels, yet seek uniqueness, only to the point of strong disapproval (Ruvio, 2008). Additionally, consumers may be motivated by the social value gained through envy. Regarding the acceptance of innovations, Bagozzi and Lee (1999) suggest that emotional resistance to innovations comes from negative emotions including envy and jealousy that occurs when one perceives another has, or threatens to take away what he or she considers one's own. Consumption is capable of acting as a bridge between social groups by constructing and maintaining symbolic borders (Bourdieu 1984), and thus image is likely salient in the consumption of innovations.

Acceptance drivers: attitudinal perceptions

Having explored the personal, innovation, and social drivers of acceptance, a potential adopter's attitudinal assessments cannot be overlooked. Influenced by numerous antecedent variables, attitude in itself is likely to play an important role in innovation acceptance. Whilst attitudinal models have been found to have wide application in explaining consumer adoption of technologies (Ronteltap et al., 2007), what exactly constitutes an attitude? Davis, Bagozzi and Warshaw (1989) describe attitudes as a function of the beliefs about performing a specific behaviour, while Bohner and Dickel (2011) believe an attitude is an evaluation of an object, thought, or anything a person may hold in their mind. Eagly and Chaiken (2007) define attitude as a psychological tendency expressed by evaluating an entity with a degree of favour or disfavour, whilst Allport (1935) has referred to attitudes as "our methods for finding our way about in an ambiguous universe" (p. 806). Intriguingly, Gawronski (2007) adopts the prerogative that attitudes are stable entities stored in one's memory, as opposed to temporary judgments developed on the spot. Such dualities exemplify the conjecture currently existent in academia. Contemporary scholarship offers a trade-off between activations of stored memory and on-the-spot judgments when viewing attitudes, with such perspectives representing opposing sides of the memory-based vs. constructionist debate. Addressing this trade-off, Kim, Chun and Song (2009), and Bohner and Dickel (2011) identify that attitudes can be defined along a continuum. On one side exists the file-drawer, memory-based perspective where attitudes are retrieved from memory and changes occur when a change in the underlying memory of the reflected attitude is made. Residing at the opposing extremity is the constructionist perspective, where attitudes are formed through currently accessible information, with changes resulting from new information being activated and considered at the time in which the attitudinal judgment is made. Considering this memory-based vs. constructionist trade-off, understanding consumer attitudes towards innovations is likely to be quite complex, as the amount a consumer may know about the product, their sensitivity to affect or normative influences, and their existing perceptions of the instrumentality of the innovation may vary.

Bruner and Kumar (2005) state that attitude towards an act is an overall evaluation that encompasses both hedonistic and utilitarian components, and hence fully mediates the effects of antecedent variables. Similarly, in drawing upon the TRA, Fishbein and Ajzen (1975) suggest that an individual's attitude towards the act of system use will mediate the relationship between instrumental variables and behavioural intention. In their research into consumer acceptance of technology, Kulviwat et al. (2007) and Nasco et al. (2008) measure attitude towards the act as an evaluative judgment reflecting cognitive

and affective responses to the behaviour. In light of such findings, it may be assumed that individuals develop intentions to engage in behaviours of which they have strong attitudes towards. Thus, a positive attitude may conjure a strong sense of conviction, but so too may a negative attitude. Therefore, while responses such as emotional, personal, and normative variables are likely to act as salient antecedents to attitude, the strength of the attitude is also critical irrespective of its valence.

In examining the role of attitude in predicting behavioural intentions to use a technology, Kim, Chun and Song (2009) examine attitude strength from the perspectives of attitude change and persuasion in social psychology. The authors define attitude strength (p. 68) in line with Petty and Cacioppo (1986) who portray it as "the degree to which attitude manifests itself in the form of temporal persistence, resistance to counter-persuasion, and predictability of behavior". Moreover, Krosnick and Petty (1995) define attitude strength as the extent to which an attitude demonstrates durability and impactfulness. Evidently, it must be acknowledged that attitude strength, i.e. the intensity with which an attitude is held, is empirically and conceptually distinct from one's attitude towards system use, i.e. a favourable or unfavourable judgment or evaluation (Kim, Chun and Song, 2009). In examining such strength, it is suggested that a strong attitude is more stable over time and across various situations and will be consistently recalled from memory in a similar manner, whereas a weak attitude is susceptible to contextual and normative influences, and may emerge more inaccessible (Bohner and Dickel, 2011). The resistance research of Doll and Ajzen (1992), and Eagly and Chaiken (1993, 1995) demonstrates that it is more difficult to change attitudes to the extent that they are strong, or embedded in existing structures. Such an attitude is likely to be persistent over time, resistant to counter-persuasion, and indicative of future behaviour.

Behavioural intentions:

"If one wants to know whether or not an individual will perform a given behaviour, the simplest and probably the most efficient thing one can do is to ask the individual whether he intends to perform that behavior" (Fishbein and Ajzen, 1975; p. 368). Indicative of the efforts one is willing to apply in order to develop an action (Ajzen, 1991), behavioural intentions are identified as key predictors of adoption, with a strong correlation between actual behaviour and behavioural intentions often observed (e.g. Venkatesh and Davis, 2000). Herein, McKnight, Choudhury and Kacmar (2002) suggest that behavioural intentions imply that a person is likely to behave in a specified way, while authors such as Ajzen and Fishbein (1980), Davis et al. (1989), Taylor and Todd (1995a,b), and Venkatesh et al. (2003) recognize "intention to use" as the primary representative of effective usage. Addressing its empirical application, numerous theoretical frameworks have identified the strong causal link between behavioural intentions and actual behaviour, evidently integrating assessments of behavioural intentions into their taxonomies. Lu, Yao and Yu (2005) detail that according to the TRA and TPB, one's actions are determined by their intentions to perform that action, while Venkatesh et al.'s (2003) UTAUT asserts that "intention to use" captures the motivating factors which are influential in behaviour. Yang et al. (2012) stress the importance of personal traits, behavioural beliefs, and social influences in determining behavioural intentions, noting that such operate differently through the pre and post stages of the adoption of processes. Thus, in addressing the behavioural intentions pertinent in innovation acceptance, one cannot assume that the intention to "use", "adopt", or "purchase" (the constructs most commonly employed in adoption studies) adequately captures all the salient behavioural intentions. Thereofre, a more comprehensive conceptualization is explored in this research.

Resistance:

Marakas and Hornik (1996) portray resistance as a response to the threats that individuals associate with an unfamiliar system. Resistance is not purely non-adoption, and Kim and Kankanhalli (2009) identify several causes of user resistance from previous research, including net inequity (Joshi, 1991; Lapointe and Rivard, 2005), greater costs than benefits (Keen, 1981; Markus, 1983), and negative outcome expectations (Martinko et al., 1996). Ram and Sheth (1989) provide initial investigation into the concept of consumer resistance in the context of innovations, defining the construct as "the resistance offered by consumers to an innovation, either because it poses potential changes from a

satisfactory status quo or because it conflicts with their belief structure" (Kleijnen, Lee and Wetzels, 2009; p. 6). Herein, Garcia, Bardhi, and Friedrich (2007, p.82) discern that resistance arises because an innovation "conflicts with consumers' ingrained belief structures, requires acceptance of unfamiliar routines or necessitates abandoning deep-rooted traditions". Thus, in spite of efforts by companies to develop consumer-oriented innovations that deliver added value, many experience high levels of adoption failure (Danneels, 2003). Herein, Ram (1987), and Herbig and Day (1992) suggest studies on innovation characteristics, such as that of Rogers' diffusion theory, should not be ignored when exploring innovation resistance as they may offer pertinent insights. Kleijnen, Lee and Wetzels (2009) endorse such, broadening the perspective of consumer resistance through the employment of Rogers' (2003) innovation diffusion characteristics. Similarly, Garcia, Bardhi, and Friedrich (2007) delineation suggests that resistance results from an innovation failing to fit in with consumer's lifestyles and beliefs, thus exposing the importance of compatibility in innovation adoption and resistance.

While it is hard to argue that drivers of resistance are unrelated to drivers of adoption, Ram (1987), and Garcia and Atkin (2002) suggest that the characteristics defined in adoption research may not typically lead to active resistance of an innovation, stressing resistance may prevail despite the favourable presence of many adoption characteristics. Such studies have the tendency to narrowly address consumer resistance only indirectl, as "non-adoption" or "unwillingness to pay". In doing so, these studies neglect the idea that "innovations mean change to consumers, and resistance to change is a normal consumer response that has to be overcome before adoption may begin" (Laukkanen et al., 2007; p. 420). Evidently, many authors including Midgley and Dowling (1993), and Szmigin and Foxall (1998) suggest understanding why consumers choose to resist an adoption is just as salient as why consumers choose to adopt. In the case of innovations where consumers experience factors such as new information, changes in behavioural patterns, and many forms of risk, resistance may be even more salient. Alarmingly though, Nabih, Bloem and Poiesz (1997) outline how many studies fail to explicitly differentiate adoption from resistance, instead considering resistance as non-adoption. This is problematic, as the cognitive, affective and situational factors that drive resistance are likely to be greatly distinct from those that encourage adoption, particularly when applying such principles to new innovations, and as Ram and Sheth (1989) state, it is simply not acceptable to conclude that resistance is the opposite of adoption. Subsequently, many authors endorse such a perspective (e.g. Ram, 1987; Garcia, Bardhi, and Friedrich, 2007; Kleijnen, Lee, and Wetzels, 2009), stressing that consumer resistance cannot be treated as the opposite of adoption, the construct must be recognized and

researched as a distinct behavioural response; one Sheth (1981) proposes is the more rational and common response to an innovation.

Trial:

Acknowledging resistance amongst uncertainty in consumer behaviour and the conceptual limitations of "purchase" or "use", one may assume that trial is likely to also play an important role in consumption behaviour, particularly in the acceptance of innovations. Examining the traditional U-shaped adoption perspective, Steenkamp and Gielens (2003) discover that new products of intermediate novelty generate a lower trial probability than new or really new products. Evidently, the authors suggest that the relationship between novelty and trial probability is not an inverted-U shaped, and may be better described as cosine-shaped (curving down, then up, and then down again), with trial probability high for both low-complexity incremental innovations and relatively radical, high-relative advantage ones. The authors underpin this pattern through their assertion that an innovation's complexity and relative advantage increases in a non-linear fashion with higher levels of novelty.

Highlighting the importance of trial, Chang (2004) reveals, "Even though consumers sometimes rely on advertising as the single source of information in formulating their brand evaluations and purchase decisions, in other situations, consumers can gain additional product information via direct trials before purchase" (p. 83). The author further informs trial is particularly salient in occasions where product information can only be obtained through direct product experience. Addressing such occurrences, Nasco et al. (2008) identify how consumers often try out new products before they buy them, playing with friends' products or trailing display models at stores. Thus, by acting as feedback to initial brand or product judgments, such trial can serve as an important function in further determining how likely it is that consumers will become eventual adopters or repeat customers. Hoch and Deighton (1989) advise that learning from product trial is not as simple as just discovering objective truths. Sometimes such learning can be inefficient, illusionary, or subject to the claims of advertising. Evidently, Deighton (1984) detail that exposure to advertising affects subsequent trial-based evaluations of products by priming consumers to more favourable trial experiences. In considering such obstacles, Nasco et al. (2008) note that consumers may be inclined to try out "gadgets" before they buy, either through playing with a friend's, or trying out a display model; arguing that the nature of the task that is engaged through trial could have significant impact on the adoption of the product.

In exploring trial probability in the context of consumer behaviour, Steenkamp and Gielens (2003) distinguish between three disparities. Firstly, they consider the variation in trial probabilities within new products and across consumers. Because of many factors, such probabilities vary significantly between consumers, while some may not undergo trial at all. These factors include personal and interpersonal dispositions such as social influences and an individual's level of personal innovativeness. Secondly, the authors consider the variations in trial probability within a new product over time. As the intensity of various communication tools varies over time (Hanssens, Parsons, and Schultz, 2001), the level of communication in a particular time period is expected to influence the probability of trial in that period. For example, a product may yet to be diffused through to markets, may be just introduced (infancy), or may be in the depths of maturity, and as products are promoted differently and in varying intensities over their life cycle, variations in trial probability will occur. Finally, Steenkamp and Gielens (2003) consider the variations in trial probability between new products, detailing that the impacts of marketing strategies and category characteristics (Gatignon and Robertson, 1991) will result in some new products receiving greater uptake than others. Thus, from these insights, it is clear that not all products are diffused equally, and the widespread trial of a product can vary dramatically. Thus, potentially acting as conduit to future purchase, trial is likely to be a salient behavioural intention in the acceptance of innovations.

Purchase:

"The successful commercialisation of an innovation depends on the adoption decision of the market participants" (Constantiou, 2009; p. 271). In the case of innovation acceptance, such adoption is conceptualized through a decision to purchase an innovation. When an individual assesses a potential purchase, they develop a cognitive account to compare the subjective value of an innovation in relation to a reference point (Thaler, 1985). Existing products available to the adopter form their reference point or "status quo" at the time of decision-making (Constantiou, 2009). However, it is likely that the option to go against a status quo and purchase an innovation is the least plausible outcome. To elicit such behaviour, an individual must perceiving an innovation so desirable they are prepared to move beyond their natural tendency to maintain the status quo and resist, resulting in purchase. Constantiou (2009) suggest such will occur in perceptions of positive subjective value, where the individual will move from the equilibrium reference point and opt for the new product.

The aforementioned discussion of purchase is one not always explicitly dimensionalized in acceptance studies. A vast majority of technology and innovation models focus on "adoption" (a surrogate for purchase) as a behavioural intention outcome; such examples include the TAM (Davis, 1989) TRA (Fishbein and Ajzen, 1975), TPB (Ajzen, 1991), and the CAT Model (Kulviwat et al., 2007). In dimensionalizing behavioural outcomes of "adoption", Claudy et al. (2010) outline how many studies on innovation and product acceptance have focused on willingness to pay (e.g. Banfi et al., 2008; Borchers, et al., 2007) and intention to adopt (Bang et al., 2000). In highlighting the distinction between initial adoption and continual usage, Lu, Yao and Yu (2005) stress that the factors mitigating general usage are not necessarily the same as those that may effect initial adoption. Yang et al. (2012) support such a declaration, noting that user-held perceptions of beliefs, attitudes, and external stimuli may be different for initial adoption compared to that of continual usage. Through acknowledging the variety of definitions employed for the term "adoption", (e.g. Steenkamp and Gielens' (2003) who outline adoption as the first or first few purchases; Lu, Yao and Yu (2005) who consider adoption to be the initial acceptance of a particular object), such behaviour is contextualized as a consumer's first purchase of a new innovation.

Gaps in the Literature:

Having scrupulously examined a wide selection of relevant literature, this research identifies several gaps. Through the proposed theoretical framework, this study will attempt to fill each of these gaps and enhance its contribution to both academia and practice alike. Evidently, the following gaps are identified:

1. Existing status quo bias literature (i.e. Samuelson and Zeckhauser, 1988; Kim and Kankanhalli, 2009) explores what evokes resistance from new alternatives to remain with the status quo, however no literature has successfully determined what drives consumers to change their consumption behaviour, particularly in the context of innovation acceptance **(RESEARCH OBJECTIVE 1)**

2. Technology and innovation acceptance frameworks (such as the TPB, TAM, CAT, etc.) have failed to incorporate broader conceptualizations such as value for money and risk / uncertainty assessments into their theoretical frameworks **(RESEARCH OBJECTIVE 1)**

3. While SQB theory explores the tendency to remain with the current state, and technology acceptance and innovation diffusion literature reveals (quite limitedly) how users come to accept and use, no literature has unified these divergent theoretical contexts. Legris et al. (2003), and Bagozzi (2007) have specifically requested for the broadened conceptualization of the TAM, while Kim and Kankanhalli (2009, p. 568) propose "future research could make use of other technology acceptance theories as the integrative lens". Herein, this research acknowledges the opportunity to draw from several existing theoretical models in developing a new framework of consumer innovation acceptance. **(RESEARCH OBJECTIVE 2)**

4. Despite calls for greater analyses of emotional responses by Richins (1997) and Laros and Steenkamp (2005), and Kulviwat et al. (2007), a scale suitable for measurement of the affect experienced by consumers when exposed to a product innovation does not exist. Furthermore, a more empirically nuanced hierarchical measure comprising of basic emotions at the subordinate level (as developed by Laros and Steenkamp, 2005) is yet to be established for this unique research context **(RESEARCH OBJECTIVE 3)**

5. Academic exploration of adoption intentions is dimensionalized through numerous ways, i.e. adoption, purchase, usage, etc., while status quo bias studies have examined resistance. However, such intention is yet to be dimensionalized through a broader measure that incorporates and

enhance these elements to extensively capture the range of respondents' innovation acceptance intentions **(RESEARCH OBJECTIVE 4)**

6. Gatignon and Robertson's (1989), Cenfetelli (2004), and Kleijnen, Lee and Wetzels (2009) call for further attention on resistance as a specific form of behaviour conceptually distinct from innovation adoption **(RESEARCH OBJECTIVE 4)**

7. Innovation acceptance is yet to be thoroughly explored and compared at multiple levels of perceived innovativeness **(RESEARCH OBJECTIVE 5)**

8. Existing frameworks of technology or innovation "adoption" are generally assumed to perform effectively across both innovative products, and those that are not. Thus, no research has developed a theoretical framework that successfully conceptualizes the acceptance of innovations as a distinct research context **(RESEARCH OBJECTIVE 6)**

Chapter conclusion:

Having extensively discussed the existing academic perspectives on consumer innovation acceptance of a vast range of literature while identifying salient gaps neglected by this comprehensive discourse, this research develops a strong foundation for subsequent development. This foundation will be built upon in the preceding discussion of the theoretical underpinnings and hypotheses development, culminating in the proposed conceptual model of this research.

CHAPTER 3: THEORETICAL UNDERPINNINGS AND HYPOTHESES DEVELOPMENT

Having reviewed an exhaustive list of context specific literature pertaining to consumer innovation acceptance, in further contextualizing this study's area of empirical contribution, scope must be provided to the particular boundaries of this study. To further justify the relevance of this study to academia, the following stages are undertaken in this chapter: a primary research question and several research objectives are established, the proposed conceptual model is illustrated, with key theoretical underpinnings introduced and a series of testable hypotheses proposed.

Research question and objectives:

Research into innovation acceptance (Rogers, 1983) and status quo bias (Samuelson and Zeckhauser, 1988) dates back as far as the early 1980s, with studies on consumer adoption (Ajzen, 1971) dating back even further. Thus, as the desire to understand innovation acceptance has existed for so long with no all-encompassing solution, this research does not expect to provide a conclusive answer through this study alone. The dynamics of innovation adoption are both complex and transient, thus this study attempts to build the most convincing foundation yet to address the following research question:

What drives a consumer to break from their status quo and accept a new product innovation?

To answer this question in response to the identified salient gaps in the literature, the following research objectives are set:

- **RESEARCH OBJECTIVE 1:** To develop a theoretical framework that explains what drives consumer status quo destruction through the acceptance of new product innovations **(Research Gaps 1&2)**
- **RESEARCH OBJECTIVE 2:** To unify status quo bias theory with technology acceptance and innovation diffusion models **(Research Gap 3)**
- **RESEARCH OBJECTIVE 3:** To develop a scale to dimensionalize the affect consumers experience when exposed to product innovations **(Research Gap 4)**

- **RESEARCH OBJECTIVE 4:** To dimensionalize consumer acceptance of innovations through an ordinal outcome scale **(Research Gaps 5&6)**

- **RESEARCH OBJECTIVE 5:** To examine acceptance drivers across two levels of perceived innovativeness: mildly innovative and highly innovative **(Research Gap 7)**

- **RESEARCH OBJECTIVE 6:** To confirm this theoretical framework is suitable only for the context of innovative products **(Research Gap 8)**

Conceptual model:

To address the aforementioned research questions and objectives, a conceptual model based on extensive empirical application is developed (see Figure 1). This model details the anticipated dynamins between agents of change (familiarity, attitude, compatibility, and enablers) in consumer innovation acceptance. Support for such a model is discussed in the subsequent theoretical underpinnings, with each relationship justified with substantive empirical research in the hypotheses development section of this chapter.

Figure 1: Full conceptual model
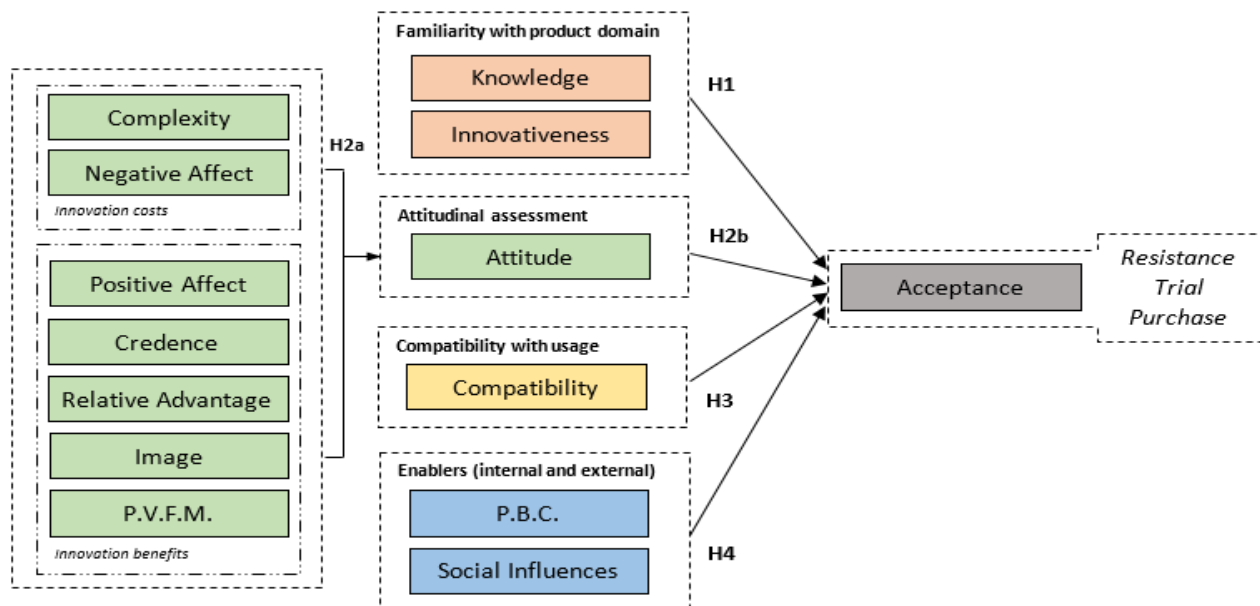
Theoretical underpinnings:

This research strives to understand what it takes to break a consumer from their existing consumption situation and accept a new product innovation. In its efforts to address this goal, status quo bias theory is unified with technology acceptance and innovation diffusion literature to develop a robust skeleton of theoretical underpinnings. Drawing from disparate yet related areas of research, consumers' acceptance of innovations is examined in a manner that ensures both academic rigour and ecological relevance through the following theoretical underpinnings:

Status quo bias:

In order to understand what it takes to accept a new alternative, this research first needs to look at what is holding us back from doing so. These pressures to remain with the incumbent is conceptualized through status quo bias theory (SQB), which represents an individual's tendency to remain with their current state unless there are strong forces opposing such (Kahneman and Tversky, 1979). Meyerhoff and Liebe (2009) discuss SQB in laymen's terms, revealing that when faced with a choice between new alternatives and the current situation, individuals have the tendency to choose the current situation. Herein, Scarpa, Ferrini, and Willis (2005) suggest such behaviour reveals itself in a systematic inclination to display a different attitude toward status quo alternatives. In light of such discussion, such a theoretical underpinning is essential when exploring an individual's acceptance of innovations, as new product adoption involves abandoning current behaviour, and deciding to (at least) try a new alternative. Evidently, to be best informed in what it will take to break consumers from their current states, we must first understand what is holding them back to remain with these current states. Thus, as detailed by the seminal authors Samuelson and Zeckhauser (1988), SQB theory is examined through its three subcomponents: rational decision-making, cognitive misperception, and psychological commitment.

Rational decision-making:

Peter and Tarpey (1975), and Yang et al. (2012) support a perspective that potential adopters tend to assess adoption by considering both positive and negative factors. In making such observations, consumers develop perceptions about accepting an innovation through assessment of the costs and benefits associated with switching to a new alternative. Ronteltap et al. (2007) endorse such a

dichotomy, identifying the costs / benefits associated with innovations are often expressed through Rogers' (2003) innovation characteristics, further noting that an innovation's costs / benefits are critical elements in attitudinal models of innovation acceptance, where trade-offs are influential in acceptance or resistance (Frewer, 2003). A large factor in any decision involving unfamiliarity (such as those related to innovations) is risk and uncertainty, thus Ortoleva (2010) suggest if all the options an individual is comparing with the status quo have uncertain values, then ambiguity aversion will kick-in, and confidence in comparing such alternatives will be reduced, with resistance resulting. Klandermans (1992) uphold a similar perspective, suggesting personal cost / benefit perceptions are extremely important determinants of actual behaviour, with Joshi (1991), and Kim and Kankanhalli (2009) discovering that when costs exceed benefits and low perceptions of attitude exist, resistance is the likely outcome, with the effects of switching costs influencing resistance directly and indirectly through attitudes. Herein, assessments of costs and benefits are not only linked with adoption, but also resistance, and are closely linked with consumer attitudes.

Cognitive misperception:

Most commonly expressed as the psychological principle of decision-making known as loss aversion (Kahneman and Tversky 1979), SQB denotes that in adoption decisions, losses have the tendency to be more considered than gains. Herein, even small potential losses are likely to result in resistance in spite of the potential for large gains (Kim and Kankanhalli, 2009); hence the notion of misperception. As a result of these biased perceptions, Karahanna et al. (1999) find that beliefs formed through direct experience are more predictive of behaviour than beliefs formed through indirect experience. Evidently, Yang et al. (2012) propose that direct experience may allow an individual to receive more information, with said individual able to make a clearer and more confident evaluation of the object. In the industrial context, Poon et al. (2004) identify the newness of innovations and lack of direct first-hand experience may be influential, suggesting familiarity and knowledge may act as proxies of one's aptitude, resultantly influencing adoption. Such is particularly salient in the context of innovation acceptance, as consumers are unlikely to have direct experience with a new innovation. As a result, said consumers may rely on indirect past experience through interactions and familiarity with similar products of the same domain when making acceptance decisions.

Psychological commitment:

Samuelson and Zeckhauser (1988) note an integral cause of status quo bias is psychological commitment, of which such a concept is comprised of sunk costs, social norms, and the feeling of control possessed by users. Integral in the concept of psychological commitment is this idea of control. Ajzen (1985, 1991) suggests control is commonly referred to as internal and external constraining factors. The author notes, internal control relates to self-efficacy whilst the external element is related to the environment. The importance of control (both internal and external) is noted by Beaudry and Pinsonneault (2005) who suggest individuals that lack control in adoption will be passive in their interaction with it, whereas those who believe they have the necessary control will actively try to maximize usage benefits. Kim and Kankanhalli (2009) support a similar perspective, delineating that individuals do not want to lose a sense of control by switching to unknown systems or objects. Beyond personal perspectives on one's ability and external environment, social norms are the pressures of others discouraging a change that will strengthen an individual's status quo bias. Thus, one may assume that normative support from social groups will encourage consumers to break from their status quo and adopt an innovation.

Unifying SQB with technology acceptance and innovation diffusion frameworks:

SQB theory tells us why an individual will not change their current behaviours; now we must ascertain why they will. Burmeister and Schade (2005) detail that in decisions invoking a cognitive decision-making process, it is expected a status quo bias would be dominant over the opposing variety-seeking behaviour tendency. Masatlioglu and Ok (2003) detail that individuals compare new alternatives (which in in this research is an innovation respondents have not adopted before) with an initial current situation or object, and if confused or indecisive, will always resolve the situation in favour of the status quo (the current situation or object). However, if alternative options (the subject innovation) are conclusively superior to the status quo and no such confusion exists, the initial position of the individual becomes irrelevant and the decision will be made on conventional decision-making criteria. Thus, the most valid attempt at provoking "variety seeking behaviour" (i.e. innovation acceptance) is to look at what explains consumption in other contexts. It is here that technology acceptance (i.e. the TPB, TAM, UTAUT, and CAT) and innovation diffusion (i.e. Rogers, 1983, 1995, 2003) frameworks can be unified with status quo bias theory to gain insights into the agents of change in consumer innovation acceptance.

Technology adoption frameworks:

In exploring acceptance of new products, systems, or ideas, the academic literature employs a variety of empirical frameworks. In chronological order, Fishbein and Ajzen (1975) developed the theory of reasoned action (TRA) to investigate the relationship between beliefs, attitudes and behaviour. Such a framework examines an individual's evaluations of their reasoned action prior to performing a behaviour, with the TRA embracing four concepts related to adoption: behavioural attitude, subjective norms, intention to use, and actual use. Extending the TRA, the theory of planned behaviour (TPB) (as initially proposed by Ajzen, 1991) broadens the conceptualization of adoption through consideration of perceived behavioural control (alongside subjective norms and attitudes) as a determinant of behavioural outcomes. In such a taxonomy, perceived behavioural control is comprised of an internal dimension: a consumer's perception of self-efficacy, representative of ones perception of their capabilities with regards to new technology (Bandura, 1986; Compeau and Higgins, 1995), and the external dimension, recognised as facilitating conditions which represents the environmental factors limiting or conducive to acceptance. Taking a similar, yet alternate conceptual perspective, Davis et al.'s (1989) technology acceptance model (TAM) delineates that an individual's perceptions pertaining to the instrumental evaluations of ease of use and usefulness are the salient beliefs that comprise one's attitude towards using a particular piece of technology; this attitude in turn determines behavioural adoption. Through such categorization, the TAM has proven a widely applicable framework, yet one that has its deficiencies.

Corresponding to criticisms of the TAM regarding the need to enhance its predictive ability by integrating it into broader models (i.e. Legris et al., 2003), Venkatesh et al. (2003) develop the unified theory of acceptance and use of technology (UTAUT). Through the UTAUT, Venkatesh et al. (2003) extend the (revised) TAM by employing this original model with enhancements through several external and internal antecedents and moderators. In unifying such taxonomies, the UTAUT integrates constructs from the aforementioned frameworks, essentially retitling such as performance expectancy (the degree to which an individual believes using a system will help him or her improve the performance of a task), effort expectancy (the degree of ease associated with the use of the system), social influences (the degree to which an individual perceives that important people believe he or she should use the system), and facilitating conditions (the degree to which an individual believes that organizational and technical infrastructure exists to support the use of the system). Limited by previous frameworks application to predominantly organizational settings, Kulviwat et al. (2007) have more

recently developed the consumer acceptance of technology (CAT) model (further extended by Nasco et al., 2008) by unifying the two previously unrelated models of the TAM (cognitive dimension) and the pleasure, arousal and dominance paradigm of affect (PAD) (affective dimension). Conceptually, the framework addresses the "technology paradox" that arises in light of the conflicting emotional reactions consumers may experience when exposed to a new product (Mick and Fournier, 1998). In developing their CAT, Kulviwat et al. (2007) and Nasco et al. (2008) consider the cognition / affect paradox the aforementioned frameworks neglect, proposing that consumer adoption may be influenced by not only cognitive evaluations, but also affective evaluations. This research draws conceptually from the TPB and CAT, utilizing and extending their theoretical frameworks into the innovation acceptance context through theoretical integration of SQB theory.

Affect in acceptance research:

The exploration of affect in consumer behaviour is nothing new. Areas of affect research that have received academic attention include the mediating role of emotions on consumer satisfaction (Phillips and Baumgartner, 2002), emotional responses to services (Oliver 1994), product attitudes (Dube et al., 2003), and emotional evaluations of advertising (Holbrook and Batra, 1987; Derbaix, 1995). Herein, the role of affective processes in a consumer's evaluations of various objects, endorsers, products and services has been the subject of significant attention (see Cohen and Areni (1991) for an extensive review). In the development of consumption related emotions studies, researchers have used a plethora of frameworks (initially developed in the field of psychology) as a foundation to further these developments. Amongst more contemporary studies (i.e. Richins, 1997; Laros and Steenkamp, 2005) shared commonality exists in the classification of emotions based upon positive or negative affect, and the yield of a small number of emotion dimensions.

In light of the vast academic attention paid to affect in consumer behaviour research, it is alarming that the vast majority of adoption frameworks that have been developed to provide insight into why people adopt and use technology (i.e. TRA, TPB, TAM, UTAUT) almost entirely focus on cognitive drivers of adoption. This is an obvious empirical shortcoming of such frameworks, thus enhancing measures to include assessments of affect is imperative. When the small number of studies have done so, such is undertaken inadequately through a single item; for example *perceived enjoyment* (Childers et al., 2001; Lu, Zhou and Wang, 2009) or *fun* (Sheppard et al., 1988; Bruner and Kumar, 2005). Herein, Kulviwat et al. (2007) note successful integration of emotions into acceptance studies is yet to be

successfully achieved, stressing the necessity for this to be achieved in a manner that explores the breadth of emotions influential in adoption intentions. As discussed above, through its successful integration of a multi-dimensional affective perspective, the CAT makes a critical step forward in acceptance research. In addressing innovation research specifically, Rogers (2003) states in the persuasion stage where innovation characteristics are evaluated, feelings or emotions are essential; however, no affective components are directly identified in his diffusion of innovation theory. Furthermore, Bruner and Kumar (2005) and Kulviwat et al. (2007) suggest the inclusion of affect into consumer technology acceptance studies is likely to ensure a more comprehensive understanding of adoption intentions. This studies acknowledges the importance of affect in consumer acceptance, incorporating such extensively into its theoretical framework, specifically as a cost or benefit associated with innovation acceptance.

Innovation acceptance:

An innovation is a product, idea or practice that is perceived as new by an individual (Rogers, 2003), often exhibiting a degree of newness, originality, or uniqueness (Wang and Ahmed, 2004). In light of such perceptions of "newness" for example, the interpretation of what is considered innovative is subjective, thus what may be considered innovative to one consumer may not be to another. Evidently, an innovation may have been conceived a long time prior, yet still be perceived as new (and thus innovative) to a particular individual or consumer segment (Sahin, 2006). Chao, Reid and Mayondo (2012) identify that empirical studies categorize product innovations on their degree of newness to markets, and the level of technological change observed within the product. Herein, Robertson (1971) discussed three types of innovative consumer products, classifying each along a continuum based upon how (dis) continuous their effects are on consumption patterns already established. These three categories range from less (continuous) to more (discontinuous) radical, and are a subjective interpretation of one's perception of continuity.

The notion of "adoption" in the context of innovations is characterized by decisions often made in light of higher risk, lower familiarity and knowledge, and in unknown reactions from an individual's social system (Rogers, 1995). Evidently, new innovations face substantial challenges in facilitating initial adoption, including "changes that occur in an individual or a social system as a result of the adoption or rejection of an innovation" (Rogers, 2003, p. 436). Considering the potential consequences of adopting the unfamiliar, Goldenberg, Lehmann, and Mazursky (2001) outline adoption of innovations occurs in an inverted U-shape, with incremental products considered too trivial, offering little advantage and as a result ignored, whilst radical innovations may be too complex or difficult to understand and are rejected (Goldenberg, Lehmann, and Mazursky, 2001). Broadening the perspective to widespread adoption, Rogers (2003, p. 5) considers diffusion "the process by which an innovation disseminates over time among the members of a social system". The author believes that the likelihood of an individual adopting a specific innovation is dependent on four key components of the diffusion of innovations: an innovation's characteristics, communication channels, time, and social systems. In this research, due to the limitation that all respondents are non-adopters likely to be unfamiliar with the innovation of which they are exposed to, the time and communication channels are held somewhat constant, with respondent's perceptions of innovation characteristics influenced by their own personal perceptions and their social system. Thus, this research examines innovation acceptance from the pre-

adoption context of which consumers are initially exposed to a new product innovation as an alternative to existing options.

Consumer acceptance:

Traditional behavioural outcomes often associated with "adoption" cannot not be employed when status quo bias theory is unified with technology and innovation acceptance research. Such outcomes (i.e. traditionally "intention to adopt", "use", or "purchase") are far too conceptually narrow and cannot be corroborated with the multi-dimensional outcomes delineated by SQB theory. Furthermore, Samuelson and Zeckhauser (1988, p.7) discover that "individuals disproportionately stick with the status quo", thus conceptualizing such outcomes from the positive adoption perspective only is likely to limiting. Evidently, in their discussion of such a theory, Kim and Kankanhalli (2009) reveal that if overall value (a surrogate for attitude in their study) perceptions are low, users are likely to resist change and remain with the status quo. Conversely, if perceived value is high, users are likely to present less resistance to new alternatives. Herein, purely dimensionalizing behavioural outcomes through positive "adoption" based outcomes is insufficient. Acceptance is clearly multi-faceted and is represented through the decision or intention to resist as one's most natural tendency. Resistance is not the only outcome, and in exploring agents of change, is not the focus of this research. Favourable perceptions may result in the desire to break from one's status quo and accept an alternative, thus in this research's innovative disposition, acceptance behaviour is dimensionalized through the three outcomes of resistance, trial, and purchase.

Resistance:

Addressing the concept of resistance, Rogers (2003) views such as the decision to "not to adopt an innovation", the antonym of adoption. Herein, Kim and Kankanhalli (2009) state that user resistance may be influenced by the bias or preference to remain with a current situation. As a behavioural outcome, resistance is inherently linked with the status quo. Herein, Zaltman and Duncan (1977, p. 63) define resistance to change as 'any conduct that serves to maintain the status quo in the face of pressure to alter the status quo", with Ram and Sheth (1989) concurring, signifying resistance is directly influenced by potential changes from a satisfactory status quo. Woodside and Biemans (2005) further detail drivers of resistance and their relationship with status quo, proclaiming resisters have a preference for the status quo because they are highly concerned about the risks (financial, performance,

and personal) associated with an innovation, instead choosing to remain with what they are familiar with. Hence, it is not astounding to discover that innovations that conflict with or disturb a consumer's usage patterns of competing and well-established products (evidently infested with switching costs) will face resistance (Hurter and Rubenstein, 1978; Oreg, 2003). As is addressed above, the status quo undeniably plays an integral role in consumer resistance, with Ram (1987), and Sheth (1981) suggesting consumers often resist an innovation for the simple reason that they are satisfied with their current situation, thus exhibiting a preference for the status quo over the changes adopting a new innovation requires.

Trial:

Bagozzi and Lee (1999) note, when exposed to an innovation the majority of decisions will not be characterized by impulsive acceptance (purchase) or the premature capitulation to fear of risk (resulting in resistance), rather consumers are likely to continue processing information until perceptions of the opportunity or threat associated with an innovation are addressed to satisfaction. In light of this and the likelihood of individuals maintaining their status quo and resisting adoption of an innovation, the experience of "trial" (the opportunity to interact prior to acceptance) may play a particularly important role in facilitating actual purchase. Exploring trail, Steenkamp and Gielens (2003) discover a non-linear relationship between the innovativeness of a product and probability to trial it, discovering a U-shaped affect, rather than then inverted U-shape they anticipated. Such a finding suggests products of intermediate innovativeness generate lower trial probability, opposed to incremental (low) or highly innovative products.

In light of the uncertainty surrounding much consumer behaviour and the conceptual limitations of "purchase" or "use", one may assume that trial is likely to play an important role in consumption behaviour, particularly the acceptance of innovations. Such may occur when assessments of cognitive misperception, rational decision-making, and psychological commitment are favourable enough that the status quo is not the most appealing option, and resistance is exceeded, if even only momentarily. In support of the potentially positive outcomes of trial, Fazio (1986) discovers the effects of direct personal experience (as opposed to indirect experiences qualified through information from others), results in an attitude that is more predictive of corresponding behaviour. Such research implies that attitudes formed through direct experiences are likely to induce more effortful or careful considerations towards a particular behaviour (Petty and Cacioppo, 1986). Thus, one could assume that those

consumers who have trialed a product will develop stronger convictions to purchase or resist an innovation. Highlighting the importance of trial, Chang (2004) reveals, "Even though consumers sometimes rely on advertising as the single source of information in formulating their brand evaluations and purchase decisions, in other situations, consumers can gain additional product information via direct trials before purchase" (p. 83). The author further informs trial is particularly salient in occasions where product information can only be obtained through direct product experience. Acknowledging the work of Rogers (1983; 1995; 2003), Sahin (2006) delineates, if an innovation offers trial, it is generally adopted more quickly, as most individuals desire the opportunity to try an innovation relative to their own unique situation before committing to a purchase; further revealing rejection (resistance) is still a possibility at this point though.

Purchase:

Lu, Yao and Yu (2005) state the first step in the long-term usage or diffusion of any product is the adoption stage. Rogers (2003, p. 177) defines adoption as "full use of an innovation as the best course of action available". Ranging from the ambiguous "adoption" through to the much clearer "purchase", the former is a term widely used in academic literature. In acknowledgment of such, this research suggests such a term is not a conceptual umbrella that can be used to explain all the aforementioned behavioural outcomes, rather it represents a consumer's intention to actually purchase the innovation in the near future. As addressed, through its empirical ubiquity a variety of definitions are employed for the term "adoption", including Steenkamp and Gielens' (2003) who outline adoption as the first or first few purchases. In consideration of the aforementioned, it must be noted this research limits itself to non-adopter's acceptance of innovations, and consequently it examines the initial "adoption" of a product, not continual usage. In this study, the traditional perspective of "adoption" in the context of innovation acceptance refers to a consumer's expressed desire to purchase a new product in the near future. With this in mind, it is highly plausible that when consumers are faced with going against their status quo, the least probable outcome is to purchase an innovation. Thus, to elicit such behaviour, an individual must move beyond their natural tendency to maintain the status quo and resist, perceiving an innovation so desirable they are prepared to purchase it, and in the case of this research, without trialing it first.

Having discussed the theoretical frameworks underpinning this research (namely SQB theory, and technology acceptance and innovation diffusion studies) in relation to consumer acceptance of

innovations, the following conceptual model is offered (see Figure 2). It is believed that through examining the dynamics of such empirical relationships, the agents of change that promote innovation acceptance will be revealed.

Figure 2: FACE Model of Consumer Innovation Acceptance
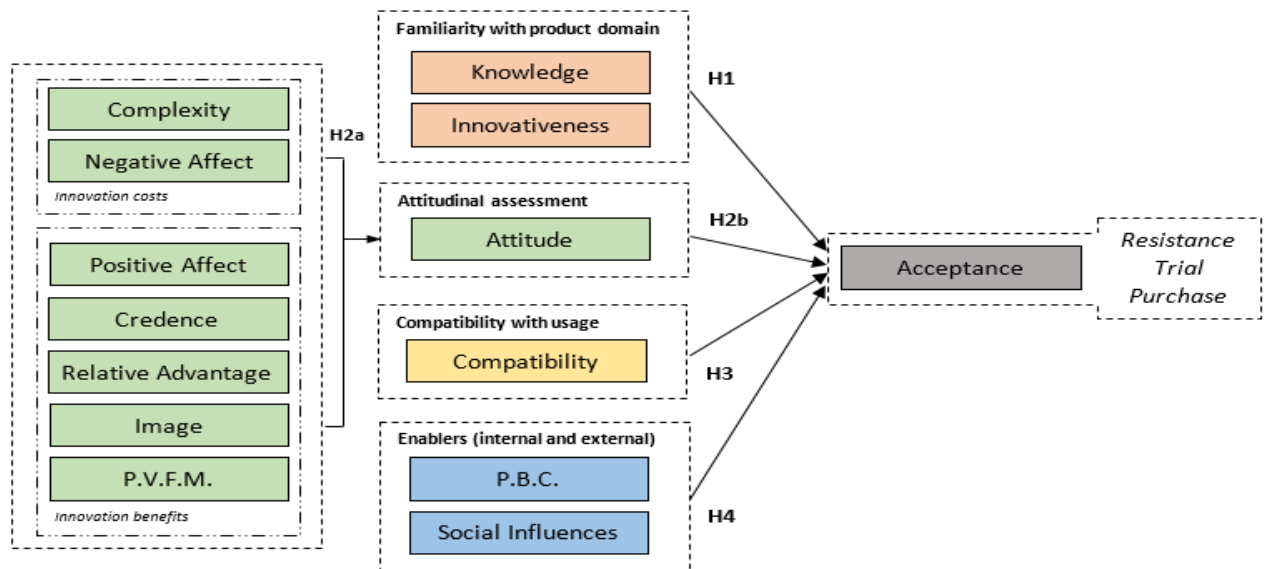
Hypotheses development:

Having detailed the theoretical background underpinning this research, the conceptual framework of consumer innovation acceptance is explored. In discovering what drives the breaking of one's status quo through innovation acceptance, such a framework unifies SQB theory with a variety of variables sourced from technology acceptance and innovation diffusion literature. Herein, consumer innovation acceptance is examined through five hypotheses across two levels of perceived of innovativeness. Through the FACE model of consumer innovation acceptance, these hypotheses explore the impact of familiarity with the product domain, attitudinal assessment based on the alternative's costs and benefits, an innovations compatibility with usage, and internal and external enablers of control on consumer acceptance outcomes when exposed to a new product innovation. In addressing this study's research question through a series of empirical relationships (see Figure 2), a series of empirically supported hypotheses are examined.

Familiarity with the product domain:

In SQB theory, cognitive misperception represents the notion that when making decisions, individuals have the tendency to weigh potential losses much more heavily than potential gains; otherwise known as loss aversion (Kahneman and Tversky, 1974). Herein, Samuelson and Zeckhauser (1988) detail that cognitive misperception explores the psychological principle that minor losses from changing from a current situation may be perceived as being larger than they actually are, thus reinforcing the status quo. Considering Meyerhoff and Liebe's (2009) suggestion that individuals who wish to avoid losses will have a strong tendency to stick with the status quo, Rogers (1995) assertion that the notion of "adoption" in the context of innovations is characterized by decisions often made in light of low familiarity and knowledge may offer a theoretical explanation. Herein, Samuelson and Zeckhauser (1988) detail that preferences depend on how outcomes are framed, thus, cognitive misperception is inherently subjective and one could assume that with greater experience with a product domain, the imbalance of misperception (and hence loss aversion) is reduced and an individual's evaluation of an innovation is more likely to be favourable. Karahanna et al. (1999) support such a notion, revealing that beliefs formed through direct experience are more predictive of behaviour than beliefs formed through indirect experience. Furthermore, Yang et al. (2012) propose that direct experience may allow an individual to receive more information, with said individual able to make a clearer and more confident evaluation of the object. Thus, one may expect that a high level of familiarity with a specific

product domain mitigates the bias or imbalance caused by the misperception of losses over gains. In laymen's terms, the more familiarity one has in a product domain, the less loss averse and the more accurate their assessments of a new innovation will become. Thus, in drawing from technology and innovation acceptance studies to understand what promotes breaking from the status quo, the constructs of *Knowledge* and *Innovativeness* are sourced to conceptually represent consumer's familiarity with the product domain. Herein, for those individuals possessing strong familiarity with a product domain, potential perceptions of losses may not be attenuated, and acceptance of an alternative to the status quo is more likely. The following are hypothesized (see Figure 3):

Knowledge:

Defined as the information an individual stores within memory (Engel, Blackwell, and Miniard, 1995), many authors, including Brucks (1985), and Steenkamp and Gielens (2003) delineate knowledge as a product of the familiarity and expertise one has with a product before external search (for information) occurs. Exploring knowledge in a general sense, Carlson et al. (2009) discover it to impact information search, information processing, and decision-making, whilst existing relevant knowledge is demonstrated to increase consumer preferences for innovations (Moreau, Lehmann, and Markman, 2001). Whilst Flynn and Goldsmith (1999) support subjective

Figure 3: Familiarity with product domain research hypotheses
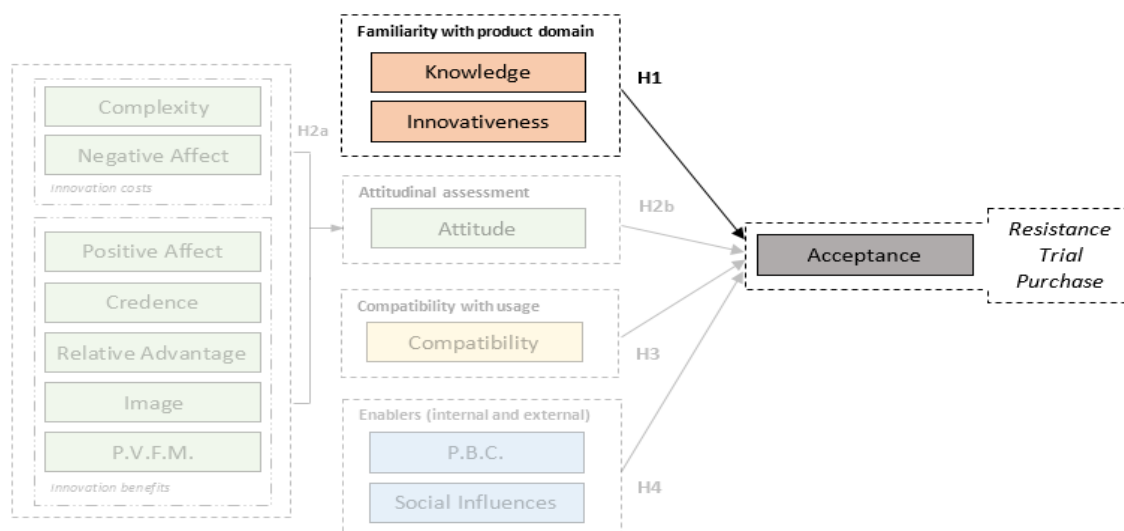
knowledge's direct, positive influence on purchase intentions, it is demarcated that users may possess knowledge on a variety of levels, with high knowledge (experts) and low knowledge (novices)

68

consumers differing in how they process information (Chang, 2004). Thus, the level of product knowledge possessed by a consumer can have substantial outcomes on product evaluations and adoption intentions. In the context of innovations, Ziamou and Ratneshwar (2002) discover uncertainty regarding an innovation is reduced with the more information a consumer possesses of a product. Furthermore, Kim, Mirusmonov and Lee (2010) propose that knowledge gives early adopters of innovations the confidence to try new features in a variety of usage contexts, with Surendra (2001) establishing a positive relationship between knowledge and the adoption of innovations. Samuelson and Zeckhauser (1988, p. 36) state "Status quo bias attributed to loss aversion depends directly on the framing of gains and losses" Herein, enhanced knowledge perceptions of an innovation could be expected to counter the imbalance of losses over gains, as with greater knowledge new information is framed in a more favourable light. Thus, greater information pertaining to an innovation (and its domain) stored within memory (as representative of familiarity) is expected to counter loss aversion and enhance the ability to break from the status quo, encouraging acceptance of innovations. Herein, the following is hypothesized:

H1a: A consumer's acceptance of an innovative product is enhanced by the individual's knowledge

Innovativeness:

By their very nature innovations are associated with risk and uncertainty (Kirton, 1976), thus it is unsurprising to note Rogers' (1983; 1993) assertion that innovative consumers are able to cope with higher levels of uncertainty whilst developing more positive acceptance intentions. Moreover, Lu et al. (2005) suggest more innovative consumers are active information seekers with regards to new ideas; and Kim, Mirusmonov and Lee (2010) reveal such consumers to be curious, dynamic, venturesome, and stimulation seeking. Herein, Lee, Qu and Kim (2007) identify highly innovative users are more willing to embrace new technologies in their daily routine by coping with the uncertainty innovations bring. Such would suggest that as a consumer's level of innovativeness increases, their aversion to losses associated with an innovation diminishes, and accepting change may result.

Agarwal and Prasad's (1998) personal innovativeness measure is conceptualized as symbolizing the risk-taking propensity that exists in certain individuals and not in others, specific to a particular product domain. Lu, Yao and Yu (2005, p. 251) note, "For the same exposure to different types of media,

individuals with higher personal innovativeness are expected to develop more positive beliefs about the target technology". Thus, individuals higher on PIIT tend to be more risk-taking, and are likely to develop more positive intentions towards usage of innovations. Similarly, further research directly supports the influence of personal innovativeness on behavioural outcomes of IT acceptance (Venkatesh and Davis, 2000), online shopping (Donthu and Garcia, 1999; Citrin et al., 2000), IT innovations (Yi, Fielder and Park, 2006), and mobile payment services (Yang et al., 2012). Thus, such an innovative disposition may act as a primary and direct determinant of adoption decision-making (Lu, Yao, and Yu, 2005).

Considering the aforementioned support for innovativeness' positive influence on adoption, consumers with higher levels of personal innovativeness within a product domain may exhibit a weaker loss aversion as not only are more benefits recognized, but these benefits are weighed more heavily than losses. Further addressing the aversion to losses as conceptualized through cognitive misperception, Moore (1999) and Rogers (2003) suggest that compared to late adopters, early adopters of innovations tend to be able to more easily envision the potential benefits associated with an innovation, as they more effectively relate an innovation to their needs, better recognizing the compatibility an innovation may possess. Thus, considering innovators' knowledge, experience and competence, such consumers may more strongly perceive the benefits of an innovation (Moore, 1999; Rogers (2003), resulting in less aversion to losses for these more experienced consumers. Herein, such research suggests individuals with greater experience with a product domain are more likely to break from their status quo and accept an innovation, and the following is hypothesized:

H1b: A consumer's acceptance of an innovative product is enhanced by the individual's innovativeness

Attitudinal assessment of costs and benefits:

Kim and Kankanhalli (2009) theoretical unify attitudinal assessment within the theoretical constraints of SQB theory, supporting that the construct plays a mediating role between rational decision-making (switching costs and benefits) and user resistance. Herein, attitudes towards innovations are likely to play a key role in breaking from one's status quo in promoting change through innovation acceptance. In SQB theory, rational decision-making is considered an assessment of the relative costs and benefits of change prior to accepting and changing to an alternative. From this perspective, a status quo bias will be enacted should costs exceed benefits, with resistance to innovation acceptance the likely outcome. Examining what *causes change* from the status quo though, this research explores the

Figure 4: *Attitudinal assessment* **research hypotheses**
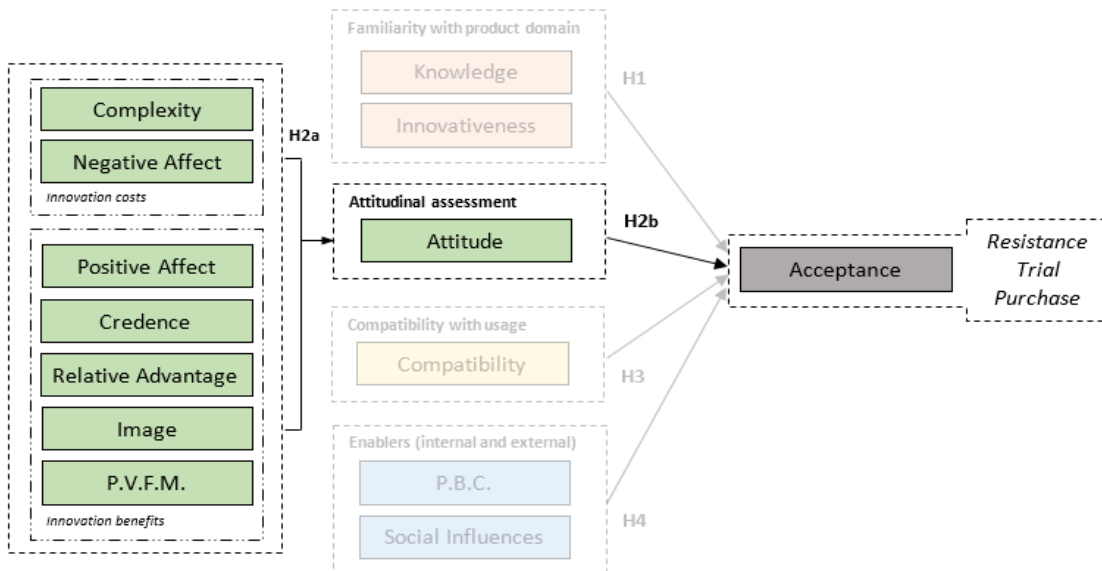
counter-argument. Thus, in determining agents of change that drive acceptance, a number of personal evaluations of the innovation are drawn from innovation diffusion and technology acceptance literature to capture the costs and benefits consumers associate with an innovation. Moore and Benbasat (1991) assert that Roger's definitions are based on perceptions of the innovation, not the perception of using or adopting the innovation; thus, innovations diffuse because of consumer's decisions to adopt them, with these perceptions influenced by innovation characteristics. Herein, as antecedents to attitude, such constructs include perceptions of *Complexity,* and *Negative Affect* (switching costs), and *Positive Affect, Credence, Relative Advantage, Image*, and *Perceived Value For Money* (switching benefits). As detailed through subsequent empirical support, evaluating such constructs will result in an attitudinal assessment of an innovation; a key mediator in breaking one's status quo bias. The

relationship between these antecedents and attitude is examined in Hypothesis 1, whilst *Attitude's* direct influence on acceptance of innovations is examined in Hypothesis 2 (see Figure 4):

Complexity:

Traditional acceptance studies (such as the TAM) have widely supported the role of perceived ease of use (PEOU) as an attitudinal antecedent. However, due to the novelty and unfamiliarity inherent in innovations, simplicity (as measured through PEOU) is rarely perceived, and the measure is unlikely to be an appropriate conceptualization. Herein, the intrinsic behavioural beliefs associated with accepting an innovation are conceptualized as costs of acceptance through perceived complexity; a construct which represents the degree to which an innovation is perceived as being difficult to use or understand (Rogers, 1983; Arts, Frambach, and Bijmolt, 2011). Herein, from a conceptual perspective, there is great similarity between the constructs of PEOU (which is widely supported to impact on attitudes in consumer acceptance studies, e.g. Childers et al., 2001; Dabholkar and Bagozzi, 2002; Bruner and Kumar, 2005; Kulviwat et al., 2007; Nasco et al., 2008) and perceived complexity (Rogers, 2003; Yi, Fielder, and Park, 2006; Arts, Frambach and Bijmolt, 2011), with the former representing the perceived simplicity, and the latter, the difficulty inherent in using a system / product. In encountering an innovation, the more it is perceived as complex, the more switching costs of adoption are involved (Hoeffler, 2003; Wood and Moreau, 2006), and one may assume the greater desire to resist an innovation and remain with the status quo, thus complexity items are negatively valenced, conceptualizing the costs associated with adoption. From an empirical perspective, Arts, Frambach and Bijmolt (2011) state, perceived costs (such as complexity) are likely to weigh heavily at the behavioural stage, as the need for specific behaviour changes to accommodate successful adoption of an innovation. Thus, the more complex an innovation is, the higher the perception of switching costs, and the less feasible behavioural change to adopt it becomes (Alexander et al., 2008), and one may assume the status quo would prevail. Herein, Taylor and Todd (1995b) support perceived complexity's empirical role as a salient characteristic of adoption that influences attitudes (albeit not always in the logical way), whilst Gao, Leicheter and Wei (2012) identify an innovation's complexity as a cost of acceptance. In light of such findings, perceived complexity is integrated into this broader innovation acceptance study as a switching cost amidst consumers' attitudinal assessment of an innovation:

H2ai: A consumer's attitude towards an innovative product is diminished by perceptions of the innovation's complexity

Negative affect:

Consumer effect is delineated as the set of emotional responses elicited specifically during product use or consumption (Havlena and Holbrook, 1986). Multi-dimensional consumer emotion scales such as the CES (Richins, 1997) and HCE (Laros and Steenkamp, 2005) are proven empirically competent in examining the emotions consumers experience in decision-making. Both of these scales incorporate a variety of negatively valenced emotion sub-dimensions suitable for assimilation into acceptance studies, including "Anger", "Sadness", "Fear", and "Shame" (Richins, 1997, Laros and Steenkamp, 2005). The HCE even composes a higher-order solution with a second-order factor of "Negative Affect". Similarly, a newly developed consumer innovation emotions measure, the consumer innovation emotions (C.I.A.) scale, is developed specific to the unique context of innovation acceptance (Butcher, Phau and Marcheigiani, 2013). Such a measure utilizes two second-order constructs of affect experienced by consumers when exposed to an innovation, one of which is "*Negative Affect*". An admirable (multi-dimensional) integration of affect into an acceptance study is undertaken by Kulviwat et al. (2007), and Nasco et al. (2008) who establish significant relationships between the pleasure, arousal, dominance paradigm of affect (PAD) (Meharabian and Russel, 1974) constructs of "pleasure" and "arousal" with attitudes towards acceptance. Such a study explores acceptance to new products, and whilst the measure does not explicitly measure just negative affect, many of its items are negatively valenced semantic alternatives; thus such findings offer an empirical platform for the influence of negative affect in acceptance studies. Examining affect's impact on adoption, Han and Back (2008) reveal negative consumption emotions to directly influence customer loyalty (in a negative manner). Capturing scepticism or cynicism, Lee and Clark (1997) suggest rejection (a form of resistance) is induced by suspicion of new and unproven innovations, whilst Woods and Moreau (2006) establish the impact of negative emotions on innovation acceptance post-use. Reconciling such with SQB, Bagozzi and Lee (1999) suggest positive and negative emotions function in innovation decision-making counterfactually, i.e. one cannot occur without the other, acknowledging that resistance to innovations comes from negative emotions. In emphasizing the dynamic nature of emotions in innovation diffusion, Woods and Moreau (2006) suggest emotions are created in the early use of (complex) new products, with these emotions influencing product evaluations. In light of such findings, negative affect is integrated into this broader innovation acceptance study as a switching cost influencing consumer's attitudinal assessment of an innovation:

H2aii: A consumer's attitude towards an innovative product is diminished by the negative affect experienced

Positive affect:

Having just discussed the development of empirical measures of negative affect as a switching cost associated with attitudes, attention is turned to the influence positive affect plays in acceptance of innovations. In measuring positive affect, many studies employ the single-item positive affective constructs "fun" and "enjoyment" (Laros and Steenkamp, 2005). The ubiquity of such positive affective measures is rife, with authors such as Sheppard et al. (1988), and Bruner and Kumar (2005) revealing higher levels of fun lead to more favourable attitudinal assessments. The extent to which technology use and adoption is believed to be enjoyable (aside from any performance consequences) is explored within the TAM, and Davis, Bagozzi, and Warsaw (1992), and Igbaria et al. (1995) discover the construct significantly influences usage intentions. Also exploring enjoyment, Childers et al. (2001) discover significant positive effects on attitudes towards internet shopping, whilst Koufaris (2002), and Van der Heijden (2004) support its positive effect on the technology acceptance of hedonic systems. Summarizing why the empirical support of these two positive emotion constructs is so strong, Bruner and Kumar (2005) believe when a technology can bring fun and pleasure or enjoyment, users will be intrinsically motivated to adopt it.

Examining multi-dimensional affective measures, Sweeney and Soutar (2001) explore positive affect as the utility derived from the feelings or affective states a product generates. Utilizing such a measure in the acceptance context, Turel, Serenko, and Bontis (2007) reveal that users who found the subject product enjoyable and emotionally fulfilling to use are more likely to develop a higher perceived overall value, which leads to usage intentions. Utilizing the PAD (Mehrabian and Russell, 1974), Kulviwat et al. (2007) and Nasco et al. (2008) discover "pleasure" and "arousal" significantly influence consumer attitudes towards an innovative technology. Exploring consumer emotions measures, the CES (Richins, 1997) and HCE (Laros and Steenkamp, 2005) both conceptualize positive emotion constructs, with the former dimensionalizing "Joy", "Excitement", "Surprise", "Contentment", "Love", and "Peacefulness", while the latter discovers "Contentment", "Happiness" and "Joy" to be sub-dimensions of "Positive Affect". The aforementioned C.I.A. of Butcher, Phau and Marcheigiani (2013) also develops a higher-order factor of "Positive Affect" that is specifically developed for the purpose of empirical application in consumer innovation acceptance studies. In examining innovation

acceptance, Wood and Moreau (2006) establish the significant impact of positive affect on innovation adoption prior to a consumer's actual use, i.e. pre-adoption. Exploring purely positive affect, the hedonic motivations component of Vandecasteele and Geuens (2010) is discovered to be significantly and positively related with both attitude and behavioural intentions. Furthermore (and as mentioned above), in modeling consumer resistance and acceptance of innovations, Bagozzi and Lee (1999) acknowledging that acceptance of innovations is driven by positive affect. In light of such findings, the positive affect experienced by a consumer when exposed to an innovation is likely to represent a switching benefit, enhancing consumer's attitudinal assessment of an innovation. Hence, the following hypotheses are proposed:

H2aiii: A consumer's attitude towards an innovative product is enhanced by the positive affect experienced

Credence:

In understanding the switching benefits associated with acceptance of innovations, this research examines the construct of "credence" as the product of a high likelihood of positive consequences occurring, held with high certainty. Defined as something giving a claim to belief or confidence (Dictionary.com, 2014), credence is a measure representative of favourable risk and uncertainty perceptions, thus promoting switching from one's status quo. Support for risk and uncertainty's role in decision-making is extensive. Risk is identified as a multi-dimensional construct, representative of the likelihood of negative outcomes, such as physical, financial, social, convenience, and psychological losses occurring (Dowling, 1986). Gao, Leicheter and Wei (2012) detail that risk relates to the level of negative consequences and decision uncertainty surrounding a failure in decision-making, whilst Lee and Allaway (2002), support the negative effect of perceived risk on adoption intentions of innovations. Evidently, authors such as Ronteltap et al. (2007), and Gao, Leicheter and Wei (2012) conclude perceived risk considerably diminishes acceptance of innovations. Related with risk perceptions, is an individual's experience of uncertainty. In the context of innovation acceptance (albeit from an organization's perspective), uncertainty may be attributable to factors related to an innovation, the adopter, and the relationship between the two (Gao, Leicheter, and Wei, 2012). Evidently, individuals tend to become averse to uncertainty in decision-making because of a perceived incompetence in uncertain situations (Brown and Venkatesh, 2005), and one may assume that such perceived uncertainty will result in favouring the status quo. Herein, uncertainty is revealed to have

several empirical consequences, including negative impacts on food consumption (Thøgersen, 2007) and the acceptance of innovations (Ziamou and Ratneshwar, 2002; Frewer, Miles, and Marsh, 2002; Cardello, 2003). In exploring consumer drivers of innovation adoption (through meta-analysis), Arts, Frambach, and Bijmolt (2011) substantiate perceived uncertainty's negative relationships with adoption intentions and actual behaviour.

Regarding the interaction between the two concepts (perceived risk and uncertainty), Dowling (1986) successfully synthesizes their relationship, suggesting that expectations of losses associated with adoption are based on the perceived uncertainty and the magnitude of adverse consequences. Yang et al. (2012) discover consumer's perceptions of the risk and uncertainty associated with an innovation plays an integral role in its acceptance, whilst risk and uncertainty perceptions are discovered to have a significant impact on the acceptance of food innovations (Cardello, 2003). Further, Ostlund (1974) identify the feasibility of an innovation's adoption is dependent on a consumer's perception of risk / uncertainty related to it. Risk and uncertainty perceptions can have an impact on more than just "adopting" an innovation though; prior studies (such as Luarn and Lin, 2005; Shin, 2009) indicate that perceived risk is a major factor in consumers' resistance, with such uncertainty causing negative psychological reactions (Inder and O'Brien, 2003) that bias consumers towards retaining the status quo, and not "adopting" (Samuelson and Zeckhauser, 1988). Kim and Kankanhalli (2009) also acknowledge these uncertainty costs as drivers of status quo bias. Herein, switching away from the status quo to a new innovation alternative may be characterized by risk and uncertainty, thus favourable perceptions (as represented through *Credence*) are proposed to have the following effect on consumer attitudes:

H2aiv: A consumer's acceptance of an innovative product is enhanced by perceptions of the innovation's credence

Relative advantage:

An innovation is faced with the challenge of being perceived as more useful than the status quo of which consumers are familiar with, thus an enhanced measure of usefulness, i.e. relative advantage (Rogers, 1995, 2003) is empirically salient in decision making. Relative advantage represents the degree to which an innovation is perceived to be better than its precursor, or delivers a certain advantage over preceding technologies or methods (Rogers, 1983; 2003; Arts, Frambach, and Bijmolt,

2011). Herein, Kulviwat et al. (2007) acknowledge consumers are likely to perceive an innovation as useful if it is believed to exhibit advantages over the alternative(s); and one may expect it to be an important contributor to eliciting change away from the status quo. With regard to the empirical relationship between relative advantage and attitudinal assessments and adoption, both direct (Shi and Fang, 2004) and indirect effects are supported (Kulviwat et al., 2007). However, not every study supports the relationship between relative advantage and attitudinal assessments, with Kulivwat et al. (2007) discovering an insignificant effect, suggesting (as has been found over time with TAM and innovation characteristics) a degree of context dependency exists (Plouffe, Hulland, and Vandenbosch, 2001). Exploring relative advantage specifically in the context of innovation acceptance, Yang et al. (2012) acknowledge it to be of the most consistently influential, whilst Taylor and Todd (1995b) specify through diffusion of innovation theory (Rogers, 1983), relative advantage is one of the most salient characteristics of an innovation, a perspective supported by Arts, Frambach, and Bijmolt's (2011) extensive meta-analysis of drivers of innovation acceptance. Furthermore, Yang et al. (2012) consider relative advantage a positive utility dimension representative of the extent of relative benefit that users derive from adoption. Thus, as the relative advantage a consumer perceives in an innovation is likely to represent a switching benefit associated with innovation acceptance, the following hypothesis is proposed:

H2av: A consumer's attitude towards an innovative product is enhanced by perceptions of the innovation's relative advantage

Image:

When examining innovation acceptance, one must not neglect the social context surrounding the decision-maker (Schierz, Schilke, and Wirtz, 2010). Thus, the importance of social value gained from consumption is unquestionable, as authors like Malhotra, Galletta and Kirsch (2008) discover a focus on internalized social and personal values reinforces the role of attitude that appears obfuscated in research focusing on external influences. When adopting, using and promoting an innovation, consumers may experience myriad of social benefits, including the image associated with consuming an innovation (Belk, 1978; Moore and Benbasat, 1991), the status that comes with it (Belk, 1988; Han, Nunes, and Dreze, 2010), being recognized as unique (Snyder and Fromkin, 1977; Tian, Bearden, and Hunter, 2001), or the envy and jealousy others experience in observing such consumption (Richins, 1997; Bagozzi and Lee, 1999). These are subsequently discussed below.

Intrinsically linked with image is one's self-concept, which represents the totality of thoughts and feelings one has in reference to one's self as a person (Rosenberg, 1979). Individuals develop a certain perception of their own self-image, of which they actively attempt to preserve, enhance, or extend this image through many ways, including the consumption of products (Sirgy, 1985). Herein, O'Cass and Frost (2002) argue possessions become a reflection of who we are, as well as how we want others to perceive us. Exploring status consumption, Eastman, Goldsmith and Flynn, 1999 (p. 42) define it as behaviour of people who "strive to improve their social standing through the conspicuous consumption of consumer products that confer and symbolize status". Herein, through perceptions of status, consumers are seeking recognition within social contexts through association with, or membership to the right status groups (Lascu and Zinkhan, 1999). Linked with such collective associations, Tian, Bearden, and Hunter (2001) argue that all individuals crave uniqueness to some extent. Snyder and Fromkin's (1977) uniqueness theory's origins detail such a construct as the trait of pursuing distinction from others through the acquisition and utilization of consumer goods with the purpose of enhancing and individuals self and social-image. Thus, as an extrinsic benefit, the uniqueness utility gained from innovation acceptance is likely to exhibit strong dependence on one's social system; so much so, Vandecasteele and Geuens (2010) incorporate a component of the social need for differentiation as a consumer innovativeness motivator. Due to the newness and novelty inherent in innovations, individuals are likely to be envious or jealous of the innovations others consume. Envy is an emotion consumers may experience when they desire or long for something else someone has, or as Laros and Steenkamp (2005) suggest, it (and its sibling, jealousy) occurs when consumers feel that another person has something more, or better than them. Herein, Bagozzi and Lee (1999) recognize the emotions of envy and jealousy as drivers of emotional resistance to innovations.

Drawing from research on diffusion of innovations, Moore and Benbasat (1991, p. 195) define "image" as "the degree to which use of an innovation is perceived to enhance one's ... status in one's social system". In assessing potential adopters of an innovation, Yang et al. (2012) discover that image influences behavioural intentions. Herein, an innovation's ability project a desired social image may be a valuable switching benefit associated with breaking from the status quo and accepting a new innovation, thus the following relationship with attitudinal assessments is proposed:

H2avi: A consumer's attitude towards an innovative product is enhanced by the innovation's ability to project image

Perceived value for money:

Perceptions of value are long recognized as an integral component of consumption, with authors such as Sweeney and Soutar (2001) suggesting value represents a consumer's overall assessment of utility, based on the trade-off of what is received, and what is given. Gao, Leicheter and Wei (2012) acknowledge various sub-dimensions of value, of which perceived value for money (PVFM) resides. Sweeney and Soutar (2001) define PVFM as an assessment of the utility derived from a product as a result of the reduction of its perceived short term and longer-term costs, identifying that previous research (e.g. Cravens et al., 1988; Monroe, 1990) views the construct as a value-for-money trade-off between quality and price. Herein, Sweeney and Soutar (2001) confirm PVFM's applicability to innovation research, particularly research addressing consumer's pre-adoption of innovations. Despite the relative newness of the construct to the academic lexicon, the positive relationship between perceived value for money and adoption is widely supported, with many authors (e.g. Sweeney and Soutar, 2001; Turel and Serenko, 2006; Turel, Serenko and Bontis, 2007) successfully discovering such an impact. Through a similar conceptualization, Yang et al. (2012) discover perceived fee to negatively affect adoption intention, with this impact significantly stronger for initial adopters compared to that of current users. Addressing other acceptance outcomes, the research of Luarn and Lin (2005), and Shin (2009) discovers perceived fee to be one of two major factors of consumer resistance, whilst Steenkamp and Gielens (2003) suggest that trial probability of an innovation is related with the innovation's novelty (in an inverted-U direction), discovering trial is lower the higher the relative price. In light of such discussion, the positive trade-off perception associated with PVFM is likely to act as a switching benefit to break from one's status quo in acceptance decision-making, with the following influence on attitudinal assessments of an innovation proposed:

H2avii: A consumer's attitude towards an innovative product is enhanced by the innovation's perceived value for money

Attitude:

Having examined the empirical antecedents to attitude towards an innovation, this research examines attitude's role in promoting change from the status quo. Davis (1989), and Davis et al. (1989) define attitudes in the context of adoption as the degree to which usage is positively or negatively valued by

an individual, revealing it as the main antecedent and a key mediator of other antecedents on adoption intention. As an empirical construct, scholars such as Triandis (1971), Cohen and Areni (1991), Ajzen (2001), Bruner and Kumar (2005), Kulviwat et al. (2007), and Nasco et al. (2008) view attitude as a set of cognitive and affective assessments. Beyond the degree of valence of an attitude (i.e. positive or negative), the strength with which an individual holds such an attitude is also likely to be pertinent in decision-making, with the research of Petty et al. (1995; 1997) garnering support for evidence of the effects of attitude strength on the attitude-behaviour relationship. Attitudinal assessments have long been established as salient in many technology acceptance theoretical frameworks (see TPB, TAM, CAT), often mediating the effects of antecedents on behavioural intentions. However, regarding such mediating effects, conjecture exists pertaining to the construct's impetus as a full, or partial mediator. Congruent with the TRA's fully mediating perspective of attitude, authors such as Fishbein and Ajzen (1975), Ajzen and Fishbein (1980), and Chang and Cheung (2001) support such an influence on behavioural intentions, whilst others, including Davis et al. (1998), Venkatesh (2000), and Kulviwat et al. (2007) only discover a partial mediation effect. Alongside the varying influence of attitude strengths (Kim, Chun and Song, 2009), Berger, Rachford, and Haines Jr. (1994) support that strongly held attitudes are highly predictive of behaviour, whilst those held weaker, perhaps as they are recently formed or as information is still being collected, are less likely to influence subsequent behaviour. Beyond attitude's influence on behavioural intentions, it is also discovered to have a direct effect on actual behaviour, with authors such as Armitage and Conner (2001), Ajzen and Fishbein (2005), and Pieniak et al. (2010) supporting such an empirical link. Such a relationship is supported in the context of technology (Kim, Chun and Song, 2009), innovative products (Kulviwat et al., 2007), and even innovative services (Schierz, Schilke and Wirtz, 2010).

In the innovation context, from a constructionist perspective attitudes towards innovations are formed through new information being activated and considered at the time in which the attitudinal judgment is made, relative to previously retained perspectives of status quo options. Herein, Sahin (2006) reveal attitudes are important in shaping an individual's adoption or rejection. Employing the conceptualization of Kahneman and Tversky (1979), Kim and Kankanhalli (2009) view attitude (in the case of their research, the conceptually and empirically equivalent "perceived value") as a composition of the perceived net benefits relative to perceived costs of change. Such a perspective is drawn from status quo bias theory, which views attitude as a perception of whether the benefits derived are worth the costs incurred in changing from a status quo alternative. Following such a rationale, if the attitude towards change is poor, users are likely to have greater resistance to change, but

conversely, if users perceive it favourably they are likely to have low resistance (Samuelson and Zeckhauser, 1988). Such low resistance in light of a positive attitudinal assessment is likely to be more conducive of behavioural change, thus Kim and Kankanhalli (2009) discern that practitioners should look to enhance attitudes to reduce user resistance and avoid retreating to the status quo. Unifying the extensive support for attitude on behavioural intentions and its evidenced role in status quo bias research, favourable attitudinal assessments are believed to be powerful agents of change in breaking from one's status quo; hence the following hypotheses are proposed:

H2b: A consumer's acceptance of an innovative product is enhanced by their attitude towards it

Compatibility with usage:

Birthed from Rogers (1983; 1995; 2003) innovation diffusion characteristics, perceived compatibility is an integral element of an innovation's desirability, representing the degree to which an innovation matches the potential adopter's needs, values and experiences. Alongside the needs and values of adopters, Arts, Frambach and Bijmolt (2011) define the construct as the degree to which an innovation is perceived as consistent with past experiences and the lifestyle of potential adopters, whilst Yang et al. (2012) view compatibility as the perception that an individual can successfully integrate a new product into their daily life.

Figure 5: *Compatibility with usage* **research hypothesis**
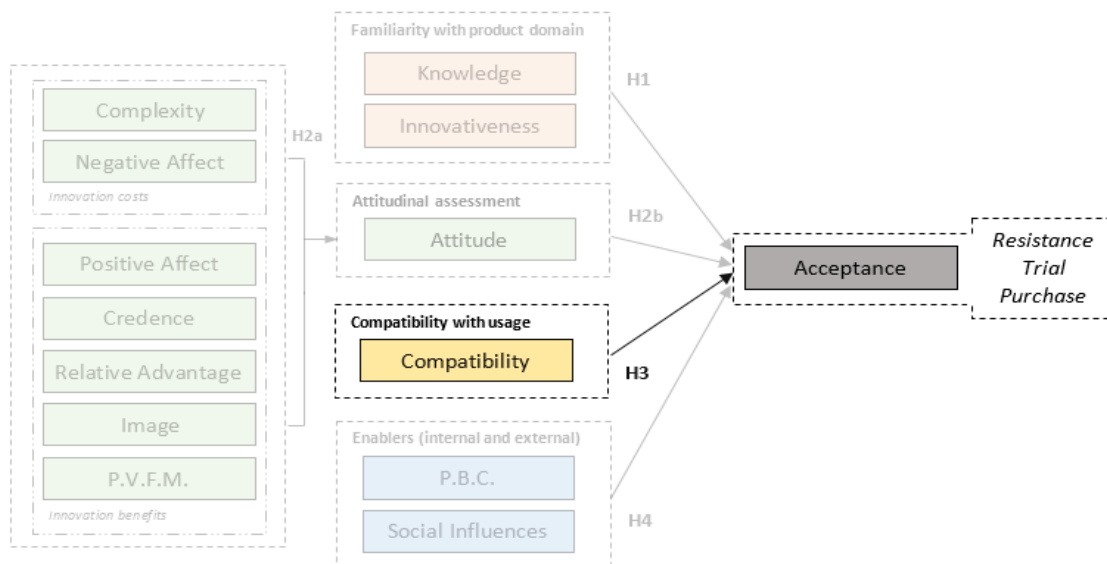
In technology acceptance studies, Kim and Kankanhalli (2009) suggest a more holistic view is obtained through consideration of the overall changes with a new system based on a potential adopter's current situation (compatibility). Herein, Tornatzky and Klein (1982) sanction the construct a crucial characteristic driving consumer adoption, and a useful extension to the TAM, thus increasing its predictive power. As compatibility reconciles an innovation with the existing values, behaviour, and experiences of consumers, (Schierz, Schilke, and Wirtz, 2010), it is discovered to be an important empirical variable in acceptance studies. Evidently, a great body of support exists for compatibility's significant impact on behavioural intentions. Authors such as Mallat et al. (2006), Wu et al. (2007), and Tulu et al. (2007), acknowledge the salience of compatibility over usage intentions, and of Rogers'

(1983) innovation diffusion characteristics, compatibility is acknowledged as the most consistent influencer over innovation adoption by Mallat (2007), and Wu and Wang (2005). Furthermore, Yang et al. (2012) conclude, when an individual perceives they can well integrate an innovation into their daily life, its compatibility with present lifestyle and habits is expected to influence adoption intentions favourably. Evidently, for a consumer to break from their status quo and accept an innovation, a desire to possess the product and successfully integrate its usage into their life must exist. However, despite its ubiquitous application from innovation diffusion theory (Rogers, 2003), compatibility is not directly examined in SQB theory, thus enhancement to such a theoretical framework is explored through the construct's empirical influence as an agent of change. Herein, subsequent hypotheses suggest that favourable perceptions of an innovation's *Compatibility* will enable breaking from the status quo through accepting a new product innovation, and Hypothesis 3 is proposed (See figure 5):

H3: A consumer's attitude towards an innovative product is enhanced by perceptions of the product's compatibility

Enablers of change: internal and external:

As delineated in SQB theory, psychological commitment details that previous commitments to a status quo alternative, a sense of control in current behaviours, and the pressures of social norms to continue to conform will promote sticking with a status quo option. In the context of consumer innovation acceptance, resistance (and thus remaining with the status quo) is likely to be promoted when these external pressures are not in favour of changing from prevailing patterns and adopting a new innovation. Lewin (1947) suggests social systems have the tendency to maintain the status quo by resisting change and preserving the initial state, a characteristic they refer to as homeostasis. Similarly, one's perception of their inability to adopt and use an innovation is likely to reinforce such homeostasis. Herein, successful change from the status quo is dependent upon breaking the equilibrium by altering the dynamics of these "psychological commitment" forces. For a consumer to feel comfortable in accepting a new product innovation, certain internal and external enablers may need to exist. Drawing from technology acceptance literature, such enablers are explored through the constructs of *Perceived Behavioural Control* and *Social Influences,* where ones perceptions of their ability to change to an innovation with the appropriate support from their social networks is believed to facilitate breaking form the status quo, thus enabling acceptance of innovations. Kim and

Figure 6: Enablers (internal and external) research hypotheses
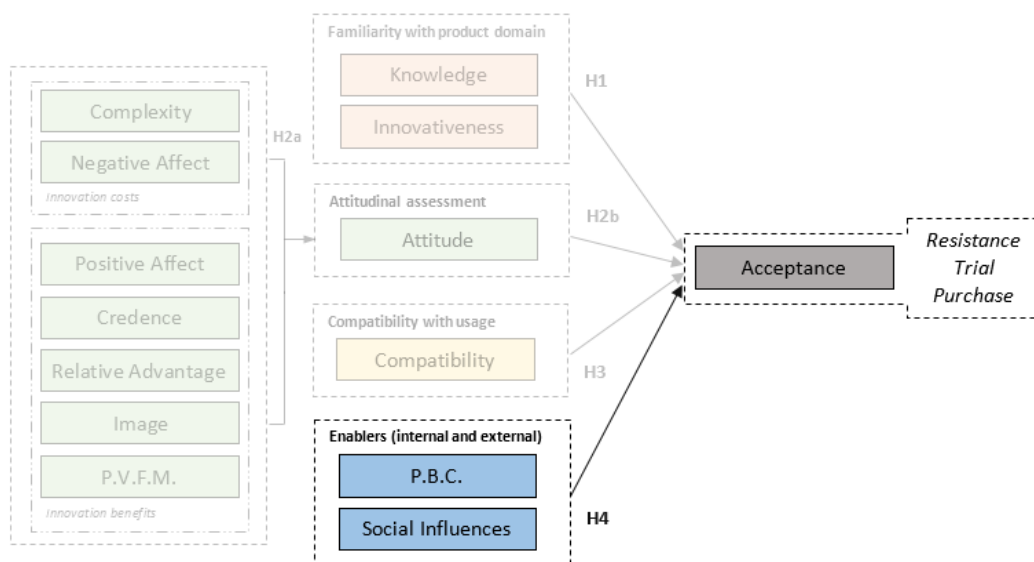
Kankanhalli (2009) note that in status quo bias theory these constructs are analogous to normative and control beliefs in the technology acceptance literature. Thus, as consumers have the support of peer groups and experience adequate internal and external control they are likely to feel comfortable in

breaking from their status quo, and this may result in less inclination to resist an innovation with a greater likelihood of innovation adoption occurring. Evidently, such influence in acceptance decisions is examined through Hypothesis 4 (see Figure 6).

Perceived behavioural control:

Venkatesh et al. (2003) define perceived behavioural control (PBC) as a user's perception of possessing the necessary resources, capabilities and sense of control in performing a behaviour. Ajzen (1991) suggests, "The resources and opportunities available to a person must to some extent dictate the likelihood of behavioral achievement. Of greater psychological interest than actual control, however, is the perception of behavioral control" (p. 183). In its most basic conceptualization, "control" is a construct that reflects situational enablers or constraints to behaviour (Ajzen 1985), with the construct demonstrated to have an effect on the dependent variables of intention, and behaviour across a variety of domains (Ajzen, 1991). Observing such causality, authors such as Madden et al. (1992), Sparks et al. (1992), Lu, Zhou and Wang (2009), Venkatesh, Thong, and Xu (2012), and San Martin and Herrero (2012) support PBC as a key determinant of adoption intention. Regarding technology acceptance, Venkatesh, Thong, and Xu (2012, p. 162) support the direct influence of facilitating conditions on adoption intention and actual adoption, suggesting "a consumer who has access to a favorable set of facilitating conditions is more likely to have a higher intention to use a technology". Empirically, authors such as Pavlou and Fygenson (2006), and Taylor and Todd (1995a) (indirectly) discover self-efficacy to positively influence intentions to adopt, whilst Kim and Kankanhalli (2009) find that self-efficacy for change decreases user resistance by reducing the perception of costs for switching from the status quo to the new system. Samuelson and Zeckhauser (1988) detail that in SQB theory, the feeling of control in decision making is integral, thus often the status quo option is favoured as individuals are comfortable in that situation. They indicate, "The bias stemming from the illusion of control is a significant potential source of status quo inertia" (p. 41). LaRose and Eastin (2004) detail that as users become more self-efficacious with regards to an innovation, their expectations that they will obtain specific outcomes also increase, and this encourages more use. Herein, a perceived sense of internal and external change to break from the status quo is a likely agent of change, and the following hypotheses are explored:

H4a: A consumer's acceptance of an innovative product is enhanced by their perceived behavioural control

Social influences:

Lu, Yao and Yu (2005) define social influences as perceived pressures from social networks to make or not to make a certain behavioural decision. Herein, Nasco et al. (2008, p. 991) note, "A consumer's interpersonal influences could come from a variety of sources, such as neighbours, relatives, family members, and friends, as well as inspirational figures in the media, such as celebrity spokespersons, sports heroes, and movie stars". As individuals adapt their beliefs, attitudes and behaviours to their social context, Salancik and Pfeffer (1978) suggest support from influential others is an important influencer of the actions a potential adopter chooses to take. Citing Kelman (1958) and Warshaw (1980), Venkatesh and Davis (2000, p. 188) generalize, "the direct compliance effect of subjective norm on intention is theorized to operate whenever an individual perceives that a social actor wants him or her to perform a specific behaviour". Conducting an extensive meta-analysis on 63 TAM studies, Schepers and Wetzels (2007) conclude reference groups play an important role in the diffusion of innovations. In examining the construct's impact on behavioural intentions, authors such as Hong and Tam (2006), Venkatesh, Thong and Xu (2012), and Yang et al. (2012) substantiate such a relationship, with the latter authors discovering, "initial adopters who are without prior experience of mobile payment services tend to rely more on the opinions of others for making their decision" (p. 137). In the context of innovations, Rogers (1995) reveals "adoption" is characterized by decisions often made in light of unknown reactions from an individual's social system. Supporting social networks involvement in innovation acceptance, a variety of authors (including Triandis, 1971; Cooper and Zmud, 1990; Karahanna et al., 1999; Nasco et al., 2008) acknowledge social influences as an integral element in innovation diffusion. Herein, innovations create uncertainty about potential consequences, and as individuals are generally uncomfortable with uncertainty they tend to interact with social networks to consult on adoption decisions through normative and informational social influences (Katz, 1980; Karahanna et al., 1999; Lu, Yao and Yu, 2005); thus enabling them to entertain change to current behaviours. Addressing trial, Steenkamp and Gielens (2003) identify the likelihood of trial is greater if the information acquired through purchase is valuable to those in one's social network. In exploring status quo bias, Samuelson and Zeckhauser (1988) warn norms are important in explicit social settings, indicating that individuals often turn to the path of least resistance in conforming to the status quo, irrespective of whether this is considered the optimal decision in the circumstances or not. Moreover, Kim and Kankanhalli (2009) discover social normative influences have a direct effect on resistance behaviour, with favourable social opinions reducing user's

uncertainty and lowering perceptions of switching costs. Herein, in light of the aforementioned discussion, favourable social influences pertaining to of an innovation are likely to be critical agents of change, with the following hypothesized:

H4b: A consumer's acceptance of an innovative product is enhanced by their perception of social influences

Chao, Reid, and Mayondo (2012) identify that empirical studies categorize product innovations on their degree of newness to markets, and the level of technological change observed within the product. Herein, one cannot expect all products, across varying levels of innovativeness, to be adopted in the same manner. Due to the unfamiliarity surrounding some innovative products, Goldenberg, Lehmann, and Mazursky (2001) outline adoption of innovations occurs in an inverted U-shape, with trivially incremental and highly disruptive innovations facing much resistance.

Rogers (1995) suggests initial adoption decisions are often made in light of higher risk, lower familiarity and knowledge, and in unknown reactions from an individual's social system. In the pre-adoption stage, an individual encounters many variables other than those purely related to the product itself, and these variables can often be hugely influential (Ajzen and Fishbein, 1980; Rogers, 1983). In light of such, it is likely that what drives acceptance is different for products of varying degrees of innovativeness. Thus, in examining the *FACE* model of consumer innovation acceptance across two levels of perceived innovativeness (mildly innovative and highly innovative) and through a "conventional" product control sample, the following is hypothesized:

H5: Drivers of breaking the status quo in acceptance of an innovation will be different across perceptions of mild and high innovativeness

Chapter conclusion:

Through extensive support from extant academic literature, this research proposes a number of hypotheses to explain what drives consumers to break from their status quo through innovation acceptance. This is achieved through unifying SQB theory with frameworks from technology acceptance and innovation diffusion, and as addressed through the aforementioned hypotheses, such practice culminates in the *FACE model of consumer innovation acceptance*, addressing perceptions of:

87

- **F**AMILIARITY with the product domain

- **A**TTITUDE assessment based on an innovation's costs / benefits

- Innovation's **C**OMPATIBILITY with usage

- Internal and external **E**NABLERS of change

Subsequent primary research will examine these hypotheses to support the development of this new theoretical framework. Support for such will fill several previously identified research gaps, whilst providing significant value to academic and practice alike. The methodology behind this primary research is discussed in the next chapter.

CHAPTER 4: METHODOLOGY

Having set the study's theoretical foundation and subsequent hypotheses, primary research is undertaken to determine the agents of change that drive consumers to break from their status quo through acceptance of product innovations. In doing such, a stringent research methodology is employed, and this chapter will subsequently discuss the specifics of the sample and sampling procedure, the data collection process, research instrument employed, and a brief description of the development of the new consumer affect scale.

Sample:

Sampling procedure:

As this study is delimited to respondents who have not purchased the products examined before, any individual who satisfies this condition could theoretically be a member of the target population. In light of this, this research employs convenience, non-probability sampling. Visser, Krosnick and Lavrakas (2000) describe convenience sampling as a type of non-probability sampling procedure where individuals are sourced, as they are known or readily available to investigators. Participants not known or available to researchers are ineligible to be selected as part of the sample, thus everyone does not have an equal chance of selection, and as such, the procedure cannot be considered a probability sampling technique. As this study pursues simulation of a natural consumption environment, convenience sampling is considered appropriate as the most salient characteristic of the sample is that they have not purchased or used the subject product before. Satisfying this condition ensures ecological validity, and evidently respondents are equivalently sourced from a large West Australian university and a *Qualtrics* (online) panel selection.

Data for the student sample phase of this study is collected from a large Western Australian university, and entered and analyzed by this study's author. Student sampling is proposed as representative of general consumers by authors such as Yavas (1994), with student samples employed across a variety of researcher contexts, including consumer acceptance studies of Bruner and Kumar (2005), Lu, Yao, and Yu (2005), Kulviwat et al. (2007), and Nasco et al. (2008). Identifying the applicability of a student sample to their research, Kulviwat et al. (2007) suggest, "students were considered a particularly

relevant and appropriate segment to use in a study of technology acceptance" (p.1069). Furthermore, innovation acceptance studies of Yi, Fielder and Park (2008), and Kleijnen, Lee, and Wertzels (2009) have successfully made use of student samples, with the latter authors noting younger consumers (such as most students) are more likely to have experience with innovative products, thus making them relevant to innovation acceptance research.

Data collected for the general sample is done so online, employing a research panel collection through *Qualtrics*. This sample is utilized to ensure variance in the demographics and responses is achieved. Sourcing such a sample also provides the opportunity to explore innovation acceptance in a different nationalistic culture.

Data collection:

In facilitating this research for the student sample, such an exercise involves groups of students (approximately 20 – 30 at a time) being exposed to a (video) industry stimulus of one of the six products examined. Importantly, each student is only exposed to one of the products, thus no repeated measures analyses is required. Having viewed the entire stimulus, a pen-and-paper questionnaire research instrument is provided to respondents for completion. Importantly, the research instrument initially informs respondents of the anonymity of their responses, stressing they are under no obligation to complete the exercise. Respondents are asked to complete the research instrument, but are not permitted to discuss what they have seen with the researcher or any classmates at this point, they must immediately complete the questionnaire. Further, respondents are asked to remain silent after finishing the exercise so to allow others to complete their questionnaire under similar conditions. Upon completion, the researcher collects all questionnaires, with respondents given the opportunity to ask questions at this point. Finally, respondents are thanked for their time and participation. A benefit of such an experimental procedure lies in not only the control with which data is collected, but also the added benefit of an implicit social density (as a result of the peer groups and social networks likely to be established in the classroom) not unlike that influential in the acceptance of new products in natural consumption environments.

In collecting data for the general sample, to minimize any occurrence of common method variance and to ensure the generalizability of results across both (student and non-student) samples, the questionnaire employed in the online data collection is identical in content and structure to the pen-and-paper version employed in the student sample. Upon commencing the questionnaire digitally, respondents are informed of the anonymity of their responses (as in the previous study), next moving on to the research stimulus. Having viewed the stimulus in its entirety (with a question asking them to indicate as such), respondents then move onto subsequent questions in an order and structure identical to that of the student sample. To ensure only properly considered responses are included in this sample, timers are placed on each question, allowing the researcher to determine those who have either spent too much, or not enough time on a question, potentially violating the usability of their responses. Such a tactic helps minimize unintelligible responses, enhancing the empirical quality of the final sample.

Research stimulus:

The research stimuli utilized in this study include six products specifically selected for their varying levels of newness or potentially perceived innovativeness, as well as primarily utilitarian or hedonic performance. Importantly, each respondent is only exposed to one product (stimulus); it is not a repeated-measures design. This stimulus-design process is undertaken so analysis can be undertaken across innovativeness levels and perceptions of task performance (utilitarian or hedonic), whilst enhancing the generalizability of the study across multiple product categories. Due to the broad demographic profiles of respondents it is essential the products selected are those respondents will have some familiarity with the product category, or at least be able to evaluate the performance of. Alternatively, if respondents are unfamiliar with it, they are likely to perceive it as innovative and subsequently evaluate it accordingly; a fortunate externality in the context of this research.

Of the six products examined (see Figure 7), the subject products (and their stimuli) are selected as they are perceived to fit into one of three innovativeness levels: conventional (the "control" for this study), mildly innovative, and highly innovative (the "treatments" for all intents and purposes). It is important to note though, the intended levels of innovativeness selected by the research team are not necessarily used to determine the sample to which respondents belong. For example, if a respondent perceived the fitness mobile application to be mildly innovative (as opposed to high as anticipated), then they will be allocated to the "mildly innovative" sample. As perceptions of innovativeness are likely to be completely subjective, the respondent themselves essentially dictate which sample they will belong to through indicating their perceived level of innovativeness. Additionally, the subject products are selected as they are likely to be evaluated by respondents as primarily utilitarian or hedonic, thus providing a satisfactory dichotomy to examine across. The subject products include the following:

Figure 7: Subject products examined as part of stimuli
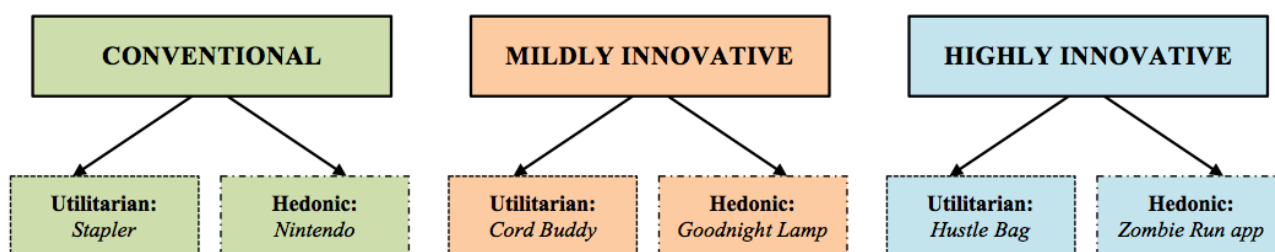
- *Conventional / Utilitarian: Stapler*

This product is selected due to its strong utilitarian purpose as it is primarily used to perform a task and minimize inconvenience. As the stapler is a conventional product every respondent would be familiar with, and likely to own and have used countless times, it is probable respondents will perceive it to be low in innovativeness.

- *Conventional / Hedonic: Nintendo 64 gaming console*

This Nintendo 64 is selected as it is an outdated gaming console most respondents are likely to be familiar with, yet one that is not as likely to be perceived as innovative at this point in time due to the vast number of consoles that have superseded it. Due to the pure enjoyment individuals experience from playing such games, it is likely respondents will evaluate it as primarily hedonic in nature.

- *Mildly innovative / Utilitarian: Cord Buddy*

This Cord Buddy is a device designed to be used in consumers' homes or work that performs the task of keeping cords (from products such as mobile phones, chargers, lights, radios, etc.) separate and untangled, whilst ensuring they stay organized and grouped together. As such, it is primarily utilitarian in nature. Additionally, the product may be perceived as relatively innovative as respondents are likely to be unfamiliar with its novel application, whilst the limited amount of technological interaction or learning is likely to ensure respondents do not perceive it to be highly innovative.

- *Mildly innovative / Hedonic: Goodnight Lamp*

This product is a series of intranet-connected lights that can be switched on or off from anywhere in the world to alert individuals you are home, unavailable, leaving work, etc. Due to its charming aesthetics and emotional value, it is likely to be perceived as hedonic in nature, whilst assessed as mildly innovative as it is a new product on the market, involves a small amount of technological interaction, and solves a common problem in a novel, yet technological manner.

- *Highly innovative / Utilitarian: Hustle bag*

The Hustle is a fashion handbag / clutch / satchel with a built-in charging device that will wirelessly charge any mobile device (such as a phone or tablet) that is placed inside and synced with it. As it is

particularly functional and solves a problem, it is likely to be assessed as utilitarian, with perceptions of high innovativeness a result of its disruptive nature, complex technological application, and lack of existing consumer diffusion.

- *Highly innovative / Hedonic: Zombies, Run! mobile app*

This mobile phone and tablet application is a gamified, interactive, digital apparatus that encourages, measures, and evaluates users' fitness and running patterns, whilst incorporating a goal-oriented, role-playing game with additional post-run interaction. As it enhances the enjoyment and emotional value joggers experience when exercising, it is likely to be perceived as hedonic, with respondents likely to evaluate it as highly innovative due to its substantial technological interaction, disruptive and unfamiliar functionality, and enhanced mobile and social media delivery.

Administering the stimuli:

This study utilizes several product stimuli to inform respondents of the nature of the products and the benefits each offers. The stimuli used are industry-sourced, broadcast videos, making use of existing product depictions. Each video runs for a similar length of time (from 60 – 90 seconds) persuasively detailing the product, what it does, its unique features, etc., but does not refer to the product as an innovation at any point. Industry examples are employed so the process of stimulating respondents is identical to a real-world exposure to an often-new product; thus ecological validity is maximized. The videos used are only edited (if at all) so to fit within a consistent and reasonable time frame for administering, otherwise they exist as they are, publically available. Furthermore, in simulating the natural consumption occurrence of an initial pre-adoption, small exposure to a product, respondents are not communicated any additional information related to the product prior to completing the research instrument, and the stimulus is not referred to as an advert. This ensures that respondents are only using the information provided through the stimulus, in addition to any relevant existing knowledge or experiences with the subject product, just as they would in natural consumption situations where first exposed to a product.

The stimuli and exposure method selected for this research are specifically done so to simulate the environment in which a consumer is exposed to a (often new) product in the natural consumer environment. Such is integral, as this research seeks to examine respondent's perceptions of the subject

product upon this (often) initial exposure. In saying that, this research acknowledges and in fact welcomes the likelihood that some respondents may be familiar with the subject product, or products of a similar nature. In natural consumption environments (of which this study attempts to simulate) consumers may already possess a degree of (indirect or direct) experience or familiarity with products they are exposed to when evaluating them, thus as a result, this study does not attempt to prohibit such, or factor it out form the data collected, doing so would diminish the real-world generalizability and ecological validity of the study. Having said that, limitations are in place that respondents have not purchased or used the product before, as assessed through initial screening questions early in the research instrument. Should this be the case, that respondent's data is removed from the study. Such practice will ensure wide variance is observed in the responses captured; thus the data collected will not be homogenized by identical levels of familiarity, and fall victim to minimal variance observed in the data, and empirically strong yet conceptually narrow results and findings.

Regarding the use of product stimuli, Chang (2004) notes, if the messages in the stimuli (such as those employed in this research) are attributed to actual product performance or attributes, the perceived credibility of their claims is enhanced. Alternatively, if messages are attributed to an organization's attempts to sell the product, audiences have less confidence in the stimuli's claims. Additionally, Chang (2004) notes audiences may perceive claims that surpass reasonable expectations as less credible. Herein, the stimuli used in the data collection process are selected (and edited) because of their effectiveness in communicating what the product is and does in a manner that is reasonable and persuasive, without promoting a strong "sales" dialogue. It also must be noted that the stimuli used did not only explain the features or attributes of the product, but also some of its benefits. This is necessary, as Maheswaran and Sternthal (1990) discover, for novice audiences (of which respondents in this study may generally be assumed as due to the newness of the innovations) the inclusion of benefit-information stimulates detailed processing. As the research instrument requires respondents to evaluate the product, themselves, and their social environment, detailed processing is essential.

Mitigating common method variance:

Common method variance (CMV) is observed when variance in the data is attributed to a measure, research instrument, or research environment, rather than the constructs being captured. Herein, CMV is damaging to studies as estimates of reliability and validity can be damaged (Cote and Buckley 1987; Baumgartner and Steenkamp, 2001) and biases may occur in the estimates of regression equations

between predictor and criterion variables (Podsakoff et al. 2003; Siemsen et al. 2010). To minimize the effects of potential CMV, the research environment and product stimulus utilized in this study are selected and controlled so to minimize common-rater and measurement effects. Regarding such, the following steps are taken to reduce common-method variances:

- The inoffensive, relatively continuous (in an innovativeness sense) nature of the products under examination, un-provocative questionnaire content, and context in which the questionnaire is administered will reduce any potential method variances of social desirability or transient mood states
- As the medium used to collect data for a large portion of this research is an online questionnaire completed at the respondent's discretion, completion is undertaken in an environment and at a time that comfortably suits the respondent, thus reducing method variance related to measurement context
- So to help reduce response bias method variance resulting from the ordering of items, or potential respondent fatigue, two versions of the questionnaire are employed with different ordering of the constructs (excluding emotions, attitudes, and acceptance intentions), and reversed ordering of the items within these constructs (excluding attitudes and acceptance intentions)

Employment of the aforementioned extensive procedural controls will reduce the occurrence of CMV in the subsequent data collection and analysis, improving the quality and reliability of data, and thus the conclusions (both empirical and conceptual) drawn from it.

Scale development:

In order to best address this studies research question in absence of an adequate existing empirical measure, this research develops a scale to measure the affect consumers experience when exposed to an innovative product. More substantial discussion of this procedure appears in Chapter 5.

Hierarchical bi-valenced structure:

Seemingly, the simplest categorization of affect is for one to divide affective appraisals into positive or negative emotions (i.e. Izard, 1977). Through a bi-valenced categorization, Laros and Steenkamp (2005) infer several benefits, suggesting it allows a model to be kept simple (essential in any replicable research), and a combination of positive and negative emotions is more indicative of a person's attitude. Herein, a substantial amount of support (albeit somewhat antiquated) exists for a general, positive and negative emotions classification (see Izard, 1977; Derbaix, 1995; Diener, 1999), however, emotions are much more complex than purely positive and negative, and a bi-valenced first-order CFA structure may overlook important distinctions between positive and negative emotions. Herein, scholars (i.e. Richins, 1997) are increasingly paying more attention to the specific emotions that reside within positive or negative emotion subcategories, with Shaver et al. (1987), and Storm and Storm (1987) suggesting emotions should be grouped into clusters. It is here, through successfully identifying multiple "basic emotion" latent factors that represent shared variance of related observed emotion indicators, that Richins' (1997) CES made significant methodological contribution to consumer emotions research. Such basic emotions are conceptually more nuanced than positive and negative, and explore with further depth the differences amongst emotions of the same valence; an area of importance identified by Lerner and Keltner, 2000. Whilst Richins' (1997) Consumption Emotions Set (CES) is designed as a starting point in determining the proper assessment of emotions elicited in consumption, the scale examines numerous basic emotion latent factors without a hierarchical structure. Herein, a general positive or negative affective state (second-order) cannot be inferred as an explanation of shared variance between first-order basic emotions, and the link between basic emotions cannot positively be concluded.

Through employing a hierarchical approach to measuring emotions, pivotal consumption-related findings are discovered through Laros and Steenkamp's (2005) HCE. Drawing heavily from Richins' (1997) CES, the HCE successfully employs a second-order level of positive and negative affect

through dimensionalizing consumer emotions to exist at different levels of abstractness (as addressed by Shaver et al., 1987). The significance of which lies in the development of an intermediate level of basic emotions that resides between the superordinate, most abstract level of positive and negative classifications, and the subordinate level of specific consumer emotions. The authors endorse an intermediate basic emotions level within their hierarchy, stating they "allow for a better understanding of the consumers' feelings, compared to only positive and negative affect" (p.1444). Furthermore, they stress that without a basic emotions level a researcher may merely collapse together emotions of the same valence. The consequences of such lie in the potential loss of important nuances, and in testing their HCE, Laros and Steenkamp (2005) discover improved measurement efficacy trough the incorporation of an intermediate level of basic emotions. Such a bi-valenced hierarchical structure is the desired methodological composition in this research.

Scale development process:

Recognizing the necessity for a measure of the affective states experienced by consumers when exposed to an innovation, this research employs frameworks of scale development endorsed by Churchill (1979) and DeVellis (2003) in developing a 17-item bi-valenced, hierarchical measure. Starting with specifying the construct under considerations of many authors (namely Coltman et al., 2008), the scale is designed as reflective measurement model. Through scouring existing affective measures (many of which discussed above), an initial pool of 57 emotion items relevant to the research context is qualified as acceptable for this research. This pool of items draws heavily from the consumer adoption emotion measures of Richins' (1997) CES, and Laros and Steenkamp's (2005) HCE.

To ensure the scale is measuring what it is intending to measure amongst the appropriate domain of interest, the scale is subject to robust content validity assessment through literature reviews, consultation with members of the target population, and expert review. The affective measure is next subject to empirical exploration, with an initial pre-test conducted on 24 respondents prior to administering the scale to final samples. Issues raised in the pre-test included respondents misinterpreting what is asked of them, and confusion with anchor points. To address such, additional instructions are added, with the option of zero provided to allow respondents to indicate they did not experience the emotion. Additionally, the width of the scale measurement is enhanced from 5 to 8, allowing respondents to indicate their affective experience with greater accuracy.

Having improved the validity of the scale, it is administered to a preliminary sample of 316 respondents and subject to exploratory factor analysis. In undertaking this procedure, the scale is refined to a preliminary composition of 30 items across 5 factors. The scale is then again administered to a second sample of 257 respondents where EFA analysis confirms the emergence of a sixth factor across the 30 items. Having satisfied all empirical EFA conditions for a robust scale, the measure is now subject to CFA. Through scrupulous re-specification and thorough analysis of several potential measurement model configurations, the scale is refined to a 17-item bi-valenced higher-order solution comprised of six first order factors: *Joy, Wonder, Apathy, Melancholy, Trepidation,* and *Cynicism*, and two higher-order factors: *Positive Affect* and *Negative Affect*. The derived solution stands up to meticulous examination of reliability, internal consistency, and convergent and discriminant validity. To reconfirm the factor structure of the measurement model, the scale is now subject to final investigation through a secondary round of CFA on a new sample of 200 respondents. Again, the same factor structure emerges, with the aforementioned tests of reliability and validity again satisfied, resulting in a proficient empirical measure.

Final scale:

Having re-specified the scale across three new and independent samples, and meticulously scrutinized its parsimony, generalizability, and validity, the final scale is suitably developed to capture the unique emotional appraisals of consumers when exposed to an innovation. The final 17-item scale is developed specific to the emotions experienced by consumers when exposed to new product innovation, and like that of Laros and Steenkamp (2005), is comprised of two second-order latent constructs of *Positive Affect* and *Negative Affect*, six first-order latent constructs of *Joy, Wonder, Apathy, Melancholy, Trepidation,* and *Cynicism*. Underpinning this factor structure, respondents indicate the extent to which the feel the following emotion towards the subject innovation through the following observed indicators: *Thankful, Happy, Pleased, Amazed, Surprised, Astonished, Bored, Unimpressed, Unexcited, Miserable, Sad, Depressed, Nervous, Panicky, Tense, Sceptical*, and *Suspicious.*

Research instrument:

So to ensure efficacy in capturing the personal, innovation, social, and attitudinal drivers of innovation acceptance, thorough research is undertaken in developing the research instrument utilized in this study. A breakdown of the sections of the research instrument, as well as steps taken to minimize common method variance, and the scale items employed are subsequently discussed.

Mitigating common method variance:

To minimize the effects of potential CMV, this study's research instrument is scrupulously developed, pre-tested, and refined over much iteration. Such pre-testing addresses the four key types of CMV effects as outlined by Podsakoff et al. (2003) in an attempt to minimize common-rater effects, item characteristic effects, item context effects, and measurement effects. Regarding such, the following steps are taken to reduce common-method variances:

- Scale formats and anchors considered *too similar* by respondents are capable of infecting the covariances amongst constructs with method variance (Podsakoff et al., 2003), thus a variety of scale anchors, including "Not at all" – "Very Strongly", "Strongly Disagree" – "Strongly Agree", "Very Unlikely" – "Very Likely", as well as some semantic differential scales are employed in the research instrument

- A variety of scale formats are also used, including bipolar scales, Likert scales, and continuums; with each administered in such a way that they do not damage flow, or add to respondent ambivalence or confusion

- The number of items utilized in scales is limited so to help eliminate respondent fatigue and carelessness (Hinkin, 1995), with scales large in size separated into several blocks so the likelihood of drawing upon previous questions in responses to subsequent answers is reduced (Harrison, McLaughlin, and Coalter, 1996)

- The complexity and clarity of scale items are refined so not to be ambiguous or confusing

- Acknowledging cautionary suggestions provided by several authors (see Spector, 1992; Peterson, 2000; Podsakoff et al., 2003), the research items and questionnaire instructions employed are also refined so to be focused, and free of idiosyncrasies or unfamiliar colloquialisms

- As recommended by Podsakoff et al. (2003), questionnaire instructions are provided that stress the anonymity of responses, informing that data will not be shared with any persons or

organizations outside of the study, and that the study's researchers do not work for the brand of the subject stimulus

- To help avoid respondent fatigue and incomplete or unintelligible responses, respondents are informed of the likely length of time to complete the questionnaire, and finally

Instrument composition:

This research employs a questionnaire style research instrument in both pen-and-paper (Student sample) and digital (*Qualtrics* sample) form. For logical and simplified facilitation the questionnaire is split into several sections; these are now discussed.

Innovation experience:

To assess (and control for) the level of experience respondents have with the subject product, respondents are asked to indicate if they have purchased of used the subject product before. So to ensure the study is delimited to non-adopters of the innovation, any respondents who indicate they have purchased or used the specific innovation before are removed from analysis. It must also be noted that such questions are directed at the specific model or version of the product shown. For example, it is acceptable for respondents to have purchased or used a stapler before, but if they have done so for the specific stapler of the stimulus, they are removed from the study. Such a condition is placed, as in the natural consumption environment, individuals possess familiarity with products learned from a variety of interactions with similar types of products or products of which knowledge and expertise can be drawn from and used in consumption decisions. Such experience influences consumer behaviour regarding specific product items, thus is important to this research. Herein, the condition is only imposed that respondents have not purchased or used that *specific* make or model of the product. This is particularly salient for the less "new" products that are likely to comprise what will be later referred to as conventional products (i.e. the stapler, and the Nintendo gaming console).

Contingency tests:

Upon commencing the questionnaire, respondents are initially asked to answer two rudimentary questions about the product and what it does (for example, "What is the name of the product in the stimulus?"). Such questions are used in the analyses stage of research to examine whether respondents

paid adequate attention to the stimulus, with those deemed not to, removed from the study. Such a manipulation check is essential to ensure the quality of data collected is acceptable, and responses to subsequent scales are considered acceptable for this research.

Affect:

Having been exposed to the product stimulus and completed the two basic manipulation check questions, respondents next assess the emotions they experience towards the subject innovation. To capture respondent's emotions in an unsullied form (not primed by subsequent cognitive or attitudinal appraisals), respondents are exposed to the emotion items as the first substantial set of questions, and asked to *"Please indicate to what extent you feel the following emotions TOWARDS THE PRODUCT shown in the stimulus"*. Such instructions make it explicitly clear that they are to assess emotions experienced towards the product, not one's general affective state, or towards the act of adoption.

To best capture respondent's affective appraisals of the product, emotions are measured through an 8-point continuum. Such a scale employs a score of "0" to indicate "Not At All", signifying that respondents do not experience that emotion in any degree. This is an integral characteristic of the scale, as in reality it is likely that not every consumer will experience every emotion (comprising the scale) when assessing an innovation. The scale then provides scores of "1" through "7", allowing respondents to indicate the intensity with which they experience the emotions, from "Very Weakly" to "Very Strongly". The width of such an emotions measure is believed to be an improvement on many scales that do not offer such variance, instead asking respondents to indicate the experience of emotions across a 5-point scale for example. Furthermore, to ensure respondents do not confuse this scale for a bi-valenced or Likert scale such as those employed in other emotions scales (i.e. the PAD), respondents are reminded during the question that the scale is a continuum, and a score of "4" is not a neutral response, rather a relatively strong intensity with which that emotion is experienced. Furthermore, any respondents that are believed to misinterpret the nature of the emotions questions (based on substantial objective evidence) are removed from the study.

The 17-emotion items employed in this phase of the study are those developed through the earlier chapters of this research, as published in Butcher, Phau and Marchegiani's (2013) Consumer Innovation Affect (C.I.A.) measure. Such emotions cover the unique range of emotions experienced

by a consumer when exposed to an innovation, covering both *Positive Affect* and *Negative Affect* through the sub-dimensions of *Joy, Wonder, Apathy, Melancholy, Trepidation,* and C*ynicism.*

Perceived level of innovativeness:

After exposure to the stimulus and completion of the emotions scale, respondents are asked to assess their perception of the level of innovativeness of the product observed. To enhance the objectivity of the assessment of innovativeness, the following definitions are provided to assist respondent's perceptions:

- "Innovativeness is the measure of the degree of 'newness' of a product or service AT THIS POINT IN TIME, compared to EXISTING and COMPETING products".
- "Innovation is the creation of better or more effective products, processes, technologies or ideas that possess a sharp difference of characteristics to those prior".

Respondents are asked to indicate to what extend the product in the stimulus is considered innovative, indicating through an 11-point continuum. In this scale, anchor points of "Not innovative at all" (as represented by a score of 0) through to "Very Innovative" (represented by a score of 10) are employed. Such are necessary so respondents can reveal if they do not perceive the product to be innovative at all, and if they do perceive a level of innovativeness, they can then evaluate such a perception on a simple scale of 1 to 10.

Utilitarian vs. hedonic:

Successfully determining the effect that the utilitarian or hedonic nature of an innovation may have on consumer acceptance in an empirical context lies in the ability to manipulate consumer product experiences. Hence, in this research respondents are exposed to a stimulus that features a predominately utilitarian, or predominately hedonic innovation as communicated through both the visual and oral cues, and application of the product. The process of manipulating the stimuli context in the form of utility vs. hedonism is conducted by authors such as Childers et al. (2001), and Nasco et al. (2008), thus to assess such perceptions in this research, respondents are asked to indicate their perception of the nature of the subject product. To again enhance the objectivity of evaluations, the following definitions are provided for each of these concepts:

A UTILITARIAN product is one that:

- Focuses on problem solving and accomplishing tasks
- Is reason-based and goal oriented

A HEDONIC product is one that:

- Allows you to experience personal gratification or enjoyment
- Is emotionally satisfying

After each definition, respondents are asked to agree or disagree with the statement that "Use of this product would serve a UTILITARIAN (HEDONIC) purpose", indicating agreement through a 7-point Likert scale anchored by "Strongly Disagree" (1) and "Strongly Agree" (7). Finally, so to ensure a conclusive decision is made on the nature of the product, respondents are asked to assess whether they consider the product to be utilitarian or hedonic, through a 7-point a semantic differential scale anchored by "Utilitarian" (1) and "Hedonic" (7).

Acceptance drivers:

Yang et al. (2012) caution one must maintain a holistic view in identifying the critical determinants of acceptance of innovations, incorporating cognitive, emotional, personal and normative influences (Yang et al., 2012). Thus, considering the personal evaluations made by consumers to break from the status quo and embrace change, the notion of perception is particularly important. Moore and Benbasat (1991) note, whilst the primary attributes of an innovation intrinsic to that product are salient, the behaviour of an individual is influenced by how these primary attributes are perceived. Herein, whilst the attributes do not change, different adopters may perceive these primary characteristics differently. For example, an innovation can only perform so many uses, but how useful it is to an individual is defined by their subjective interpretation. One consumer may face a problem a particular innovation can solve, thus perceiving it to be extremely useful (or more useful to them than another option), whilst another consumer may have no need for the same innovation as they don't experience the same problem, or already have a satisfactory solution. In such a case, the product's intrinsic attributes have not changed, however the individual's subjective interpretations of their realities are very different, and consequently, their behaviours may differ.

In order to assess the agents of change in breaking from one' status quo and accepting a new innovation, respondents are asked to complete questions relating to their personal, innovation, social, and attitudinal perceptions of acceptance. These perceptions form the constructs previously composed in the *FACE model of consumer innovation acceptance* (see Chapter 3), with all theoretical constructs (with the exception of *Credence, Attitude,* and *Acceptance*) operationalized using previously developed multi-item scales (outlined in Table 1), with each measured through a 7-item Likert type scale anchored with the extremities of "Strongly Disagree" (1), and "Strongly Agree" (7).

Complexity:

Complexity is a key component of Rogers' (1995, 2003) innovation diffusion characteristics, with the construct representing the degree to which an innovation is perceived as being difficult to use or understand (Rogers, 1983; Arts, Frambach and Bijmolt, 2011). Various authors (see Rogers, 2003; Yi, Fielder, and Park, 2006; Arts, Frambach and Bijmolt, 2011) note that from a conceptual perspective there is little distinction between the constructs of perceived ease of use and complexity (Rogers, 2003), with the significant point of difference being that empirically, complexity items are negatively valenced thus conceptualizing the costs associated with adoption. Evidently, in this research *Complexity* is employed, as the conceptualization of such a construct is more aligned to the context of innovation acceptance than its alternative. In Kim and Kankanhalli's (2009) status quo delineation, switching costs represent the disutility associated with switching to a new alternative (Chen and Hitt, 2002), a construct conceptually similar to perceived complexity through the increases in inputs required. In this research, *Complexity* is measured through three of Davis et al.'s (1989) PEOU items adapted to the consumer context by Pavlou (2003) and somewhat refined by Venkatesh, Thong, and Xu (2012). However, antonyms of these items are employed to dimensionalize the costs associated with adoption, additionally, one item is incorporated to assess respondent's perceptions of the switching costs associated with accepting the subject. Herein, such items measure a form of cost associated with breaking from the status quo in accepting a new product innovation.

Social influences:

Lu, Yao and Yu (2005) note social influences refer to the perceived pressures from social networks to make or not make a particular decision, with Taylor and Todd (1995a,b) describing the construct with respect to the opinions and influence of peers and superiors. Dimensionalized as either subjective

norms or social influences (of which Lu, Yao and Yu, 2005; and Taylor and Todd, 1995a,b detail as conceptually equivalent), the pressures of social groups have long been enacted into acceptance frameworks, dating back to the TRA, TPB, and UTAUT. Acknowledging the criticality of social influences in innovation acceptance, this research asks consumers to assess the construct through four items. The first three of these items are adapted from Pedersen and Nysveen (2003) as employed by Nasco et al. (2008), with the final item adapted from Sweeney and Soutar's (2001) social value sub-dimension in consideration of Venkatesh and Davis's (2000) delineation of people important to the individual. Such items capture respondent's perceptions of social compliance as an external enabler of change from a status quo option in accepting an innovation.

Perceived value for money:

Gao, Leicheter, and Wei (2012) discern that perceptions of value play a central role in impacting consumer purchase decisions. Analogously, Sweeney and Soutar (2001) develop a 19-item, four-dimension measure of perceived value (PERVAL), with each sub-dimension found to be distinct, yet correlated, and evidenced to impact upon consumption decisions. Supporting a "sub-dimensions" perspective of value, Sheth, Newman, and Gross (1991a,b) argue value dimensions can be conceived independently as they "relate additively and contribute incrementally to choice" (p. 12). Of the four value sub-dimensions, this study employs perceived value for money, a functional dimension encapsulating the utility derived from a product through the reduction of its perceived short and long-term costs. Regarding PVFM's relevance to innovation acceptance, Sweeney and Soutar (2001) confirm its applicability to innovation research, particularly research addressing consumer's pre-adoption of innovations, stating "value perceptions can be generated without the product or service being bought or used" (p. 206), hence such evaluations are likely to be salient in pre-adoption consumer decision-making (Woodruff, 1997). In light of such discussion, this research employs Sweeney and Soutar's (2001) original four PVFM items (with minor variation). Such items dimensionalize the financial trade-off facing a new innovation, thus capturing its contribution as an agent of change away from a status quo option.

Usefulness:

Usefulness is a key construct in Davis et al.'s (1989) TAM, dimensionalizing it as the degree to which an individual perceives something to enhance their productivity, with Chu and Lu (2007) later

contributing the construct is an assessment of something fulfilling the purpose of its activity. In this research, usefulness items are sourced from Lund (2001), and Kulviwat et al. (2007), and are employed in the analyses of conventional products only.

Relative advantage:

Relative advantage (RA) is a key construct sourced from Rogers (1995, 2003) innovation diffusion characteristics. As innovation acceptance requires consumers to break their status quo and adopt an innovation over the existing alternatives, a product is likely to be accepted if it is perceived as more useful than existing alternatives; not just useful in its own right. Herein, amongst innovation acceptance research, the positive utility derived from performing a function or enhancing productivity, efficiency, or convenience is likely to be better represented through RA as a measure of enhanced "usefulness" (Plouffe et al., 2001). Evidently, conceptual distinction between the two constructs is evidenced, as an innovation may be perceived to be highly useful with many great applications that are perceived as effective, productive, time saving etc., but if it is not (significantly) more useful than an existing product, it is unlikely to exhibit relative advantage. Thus, perceptions of relative advantage assess how much more useful an alternative is compared to the existing status quo option. Such is essential for an innovation study, as innovation acceptance requires a consumer to select a product (or service) over the existing alternative perceived to fulfill that goal or service by the consumer. RA is captured in this study through respondent's assessment of the enhanced usefulness a product brings, employing the scale items of Moore and Benbasat (1991), as utilized by Wang, Meister, and Wang (2008). Such items measure the additional value an innovation brings a consumer, thus capturing its benefits in breaking from the status quo.

Image:

Whilst social influences represent the pressures from reference groups experienced by consumers, the social environment's role in innovation acceptance is not likely to end there. In this research, social capital is explored as an aggregate of favourable social considerations not covered by existing acceptance constructs. Reliant upon (indirect and direct) inter-personal contact, such components represent the perceived social benefits gained through the consumption of innovations. Of such benefits, Rogers (1983), and Moore and Benbasat (1991) identify image, defined as the degree to which innovation usage is perceived to enhance one's standing in a social system, as an important

motivator in innovation acceptance. Beyond social gains attributed to one's image, Han, Nunes, and Dreze (2010) identify the salience of status gained through consumption. Herein, Rogers (1983) stresses, "undoubtedly one of the most important motivations for almost any individual to adopt an innovation is the desire to gain social status" (p. 215). Bestowing consumers with further gains in social standings, uniqueness motivations are also critical in consumption with Tian, Bearden, and Hunter (2001) arguing all individuals crave uniqueness to some degree. Recognizing the likely role uniqueness may play in consumption, Vandecasteele and Geuens (2010) acknowledge the social need for differentiation as a consumer innovativeness motivator, with such benefits derived from the reactions to, and perceptions of individuals concerning their similarity or dissimilarity to others (Snyder and Fromkin, 1977). Similarly, individuals also gain through the social environment when important others experience envy or jealousy in observing their consumption (Richins, 1997; Bagozzi and Lee, 1999). The elicitation of envy or jealousy in other consumers occurs when one feels another has something more, or better than them (Laros and Steenkamp, 2005). This study conceptualizes these vast extrinsic social benefits gained through innovative consumption as image, with the construct measured with four items sourced from Tian et al. (2001), Monkhouse, Barnes and Stephan (2012), Belk (1985), and Sirgy et al. (1997) (of which this item is adapted). Such items dimensionalize the social benefit an innovation may provide a respondent, thus capturing its contribution in invoking change away from a status quo option.

Knowledge:

Park, Mothersbaugh and Feick (1994, p. 71) state subjective knowledge (SK) is a person's "perceptions of what or how much they know about a product class". In employing SK, Flynn and Goldsmith (1999) delimit their measure to the broad domain of product class knowledge. Such a measure accommodates both a consumer's knowledge of the buying process and knowledge associated with the product category in general. Sujan (1985) argues that measuring respondent's product knowledge adds more ecological realism to a study than simply manipulating it does. Thankfully, Flynn and Goldsmith (1999) develop a valid and reliable multi-item measure of subjective knowledge suitable for a variety of different product and consumption domains, whilst additionally serving as a foundation for measurement standardization in consumer behaviour research. In light of such, this knowledge measure is used in this study to capture the familiarity respondents' possess with a particular product domain, thus conceptualizing an agent of change in breaking from the status quo.

Innovativeness:

Agarwal and Prasad (1998) develop a domain-specific measure of innovativeness known as personal innovativeness in information technology (PIIT), conceptualizing the construct as a stable descriptor of an individual that remains unwavering across various situations. However, it must be stressed that the stability of the trait is limited to different types of IT, not all types of innovations; herein it is domain-specific in nature, and is not considered a general characteristic of an individual's personality (Gatignon and Robertson, 1985). Rogers and Shoemaker (1971) relate innovativeness with how early an individual is to adopt an innovation, as Foxall, Goldsmith and Brown (1998; p. 41) suggest such is "the tendency to buy new products in a particular product category soon after they appear in the market and relatively earlier than most other consumers in the market segment". Focusing on specific domains of innovativeness, Agarwal and Prasad (1998) develop the construct of personal innovativeness in information technology (PIIT). The authors conceptualize the construct through recognition that factors related to an individual often form the most proximate influence on their cognitive interpretations. They describe this personal trait variable as symbolizing the risk-taking propensity that exists in certain individuals and not in others. In this study, innovativeness is measured specific to the domain of each subject product, employing three items adapted from Agarwal and Prasad (1998), with the final item adapted from Steenkamp et al. (1999). Such items capture the familiarity respondents' possess in a particular product domain as a driver of breaking from the status quo.

Perceived behavioural control:

As initially employed in Ajzen's (1991) TPB, and later in Venkatesh et al.'s (2003) UTAUT, perceived behavioural control represents an individual's assessment of their perceived capabilities. Supported in psychology and information systems research, Venkatesh (2000) note control-related constructs are separated into internal or external depending on whether the construct relates to an individual's abilities and constraints (e.g. self-efficacy) or external constraints (e.g. facilitating conditions). Representing the internal component of PBC, self-efficacy is derived from psychology (Bandura, 1986), and is concerned with a user's perception of their capabilities with regards to new technology (Compeau and Higgins, 1995), essentially encompassing belief in one's ability to organize and execute a particular course of action (Bandura, 1986). Representing the external component of PBC, facilitating conditions is detailed in Venkatesh et al.'s (2003) UTAUT through assessment of the degree to which an individual believes that organizational and technical infrastructure exists to support their use of a

system. In the consumer context, such a construct is more aligned with possession of the necessary resources. In this research, perceptions of both internal and external control are adapted from Taylor and Todd (1995a,b), and are conceptualized as acquisition of the necessary resources to accommodate change and break from one's status quo.

Compatibility:

Perceptions of compatibility explore the degree to which an innovation fits with a potential adopter's existing values, previous experiences and current needs (Rogers 1983). Regarding the construct's importance to innovation acceptance, Shih and Fang (2004) dictate that an innovation is more likely to be adopted to the extent that it does not defy social or cultural norms. In this research, the compatibility items employed are adapted from Moore and Benbasat (1991). Such are adapted in consideration of perceived compatibility as the degree of consistency between the subject product and an individual's values, needs, and lifestyle, as conceptualized by authors such as Taylor and Todd (1995a,b), and Yang et al. (2012). The items represent the fit of using an innovation in one's current situation, as a driver of change away from existing alternatives.

Credence:

Dholakia (2001) conceptualize perceived risk as a subjectively determined expectation of potential loss where some measure of probability is attached to each outcome. Jacoby and Kaplan (1972) dimensionalize the construct of risk through five subcomponents: financial, performance, physical, psychological, and social. Roselius (1971) later extends this risk assessment through a sixth dimension that explores the loss of time / convenience associated with a product. Inherently linked with risk, Gao, Leicheter, and Wei (2012) note uncertainty in innovation adoption is attributable to "factors related to the innovation, the adopter firm, the relationship between the two organizations, and market environments surrounding the adoption decision" (p. 666). With such in mind, unlike risk perceptions, uncertainty does not have a probability attached to it, and is considered a situation in which an individual is unsure of an occurrence. Enhancing traditional risk measures, Quintal, Lee and Soutar (2010) explore the degree of uncertainty associated with each of the aforementioned six risk perceptions, assessing the certainty of each of these negative consequence occurring. In this research, these authors' multi-dimensional risk / uncertainty perspective of probable loss is represented by the construct of *Credence* (commonly defined by *Dictionary.com* as "belief as to the truth of something",

or "something giving a claim to belief or confidence"), a representation of respondent's subjective and personal interpretation of the likelihood of consequences occurring. Herein, respondent's who perceive low levels of risk with high certainty are considered to possess *Credence* in the subject innovation. Responses are indicated through a 7-item assessment of the likelihood of the risk occurring, ranging from -3 (Very Unlikely) through to 3 (Very Likely), and a 7-item assessment of how certain they are of this (Very Uncertain – Very Certain). Items dimensionalize the likelihood of positive outcomes occurring with relative certainty, as a measure of one's confidence in changing to a new product innovation away from existing status quo options.

Attitude:

As employed by Stayman and Batra (1991), Berger, Rachford, and Haines Jr. (1994), and Pieniak et al. (2010), this research measures attitude towards the subject product, not towards the act of adoption. Intriguingly, Kim and Kankanhalli (2009) represent attitude analogously through the construct of "perceived value" in their user resistance to IT study, conceptualizing the construct as a comparison or judgement of the net benefits (less costs) perceived by respondents. Herein, this research employs the construct in a similar manner, with *Attitude* serving as a conceptual mediator between consumer's evaluations of an innovation's costs and benefits (as reflected through various personal, innovation, and social antecedents) and acceptance decisions. Herein, *Attitude* is measured through items (a 3-point, semantic differential scale with bi-polar adjectives "*bad – good*", "*negative – positive*", "*unfavourable – favourable*") sourced from Kulviwat et al. (2007) as adapted from Bagozzi, Baumgartner, and Yi (1992). In expanding the scope of attitudes, Berger, Rachford, and Haines Jr. (1994) acknowledges they are comprised of two identifiable dimensions: a general valence dimension, and a dimension of strength. Thus, the author notes, "An individual may have a positive or negative predisposition toward an object and may hold this predisposition with more or less strength" (p. 304), and whilst the valence dimension signals the direction of the attitude (i.e. positive vs. negative), the strength dimension influences the likelihood that these tendencies are actualized. Thus, in measuring the strength with which their attitude is held in this research, respondents perform a 7-item assessment of "How strongly do you hold this attitude?" Such a construct captures respondents' attitudinal assessment of an innovation as an agent of change in accepting new product innovations.

Acceptance:

To assess respondent's acceptance intentions of the subject product they are exposed to in this study, an enhanced assessment of resistance, trial, and purchase is employed. As this study unifies SQB theory with technology acceptance and innovation diffusion frameworks, such outcomes explore the range of behavioural responses consumers may experience in assessing their acceptance of new-product innovations in the natural consumer environment. This involves enhancing the typical empirical "adoption" measures of technology and innovation diffusion studies, and the "resistance" paradigm of status quo bias theory, to encompass three possible behaviours: resistance, trial, and purchase. Beyond enhanced ecological validity, the benefit of such a composition lies in the ability to determine how various independent variables interact as consumers move through these dependent variables. Having completed all the aforementioned questions in the research instrument, respondents are asked, "Which of the following best describes your current ACCEPTANCE INTENTION for this product", and are specified to select just one of the following options:

- *RESISTANCE* - You DO NOT wish to purchase or further trial this product
- *TRIAL* - You wish to have further opportunity to interact with, research, or use the product before deciding to purchase or not
- *PURCHASE* - You wish to buy this product in the future

Resistance:

Ram and Sheth (1989) note consumer resistance to innovations often occurs as a result of potential changes from a satisfactory status quo, or due to conflicts with a consumer's belief structure. Thus the authors (as employed by Kleijnen, Lee and Wetzels, 2009) acknowledge resistance is distinguished from the simplistic "not trying" perspective. "Innovations mean change to consumers, and resistance to change is a normal consumer response that has to be overcome before adoption may begin" (Laukkanen et al. 2007, p.420). Regarding innovations, Rogers (2003) considers resistance the act of not adopting, whilst Garcia et al (2007, p.82) discern resistance arises because an innovation "conflicts with consumers' ingrained belief structures, requires acceptance of unfamiliar routines or necessitates abandoning deep-rooted traditions".

Trial:

Trial is likely to play an important role in consumer behaviour, particularly the acceptance of innovations, as such is a natural reaction to perceived risk and uncertainty. Highlighting the importance of trial, Chang (2004) reveals, "Even though consumers sometimes rely on advertising as the single source of information in formulating their brand evaluations and purchase decisions, in other situations, consumers can gain additional product information via direct trials before purchase" (p. 83). Despite the acknowledgment of such importance, the concept of product trial as a precursor to purchase is one grossly under-developed in acceptance research. Thus, due to the newness and unfamiliarity inherent in innovation acceptance, trial as an acceptance intention is integral, and one likely to be indicated.

Purchase:

The construct of intention to "adopt" is one commonly employed in many acceptance studies (see Steenkamp and Gielens, 2003; Lu, Yao and Yu, 2005; Yang et al., 2012). However, the concept of "adoption" is conceptually ambiguous, with scholars using the title as a sort of one-size fits all for many different acceptance outcomes. With regards to purchase, constructs such as *willingness to pay* (e.g. Banfi et al., 2008; Borchers, Duke and Parsons, 2007) are conceptually very clear in what assessment they are asking respondents to make. On the other hand, Venkatesh et al.'s (2003) *intention to use* is an example of an acceptance intention considered too conceptually ambiguous for respondents, as "use" may take the form of many actions, including usage having purchased, usage in trial, borrowing and using something from a friend, or acquiring something through unethical means such as counterfeiting or theft for example. Regarding the concept of *adoption,* Steenkamp and Gielens (2003) detail adoption as the first purchase, or first few purchases of something. Furthermore, Rogers (2003, p.177) defines adoption as "full use of an innovation as the best course of action available". Herein, as a means to simplify and objectively clarify this category of acceptance, this research will measure purchase very explicitly, identifying it as a separate and distinct behavioural intention to that or trial and resistance, one where consumers wish to buy the product.

Demographics:

Finally, having provided their responses to all the aforementioned scales, participants are to provide information regarding their demographic profile. Discussing just some of these, Venkatesh, Thong and Xu (2012) reveal the demographic characteristics of age and gender exhibit influence over an

individual's information processing, with Morris et al. (2005) discovering older consumers tend to face extra difficulty in processing complex or new information. Furthermore, Venkatesh, Thong and Xu (2012) note "as age increases, gender differences in learning about technologies from experience become more pronounced" (p. 165). Exploring education and income, Gatignon and Robertson (1985) propose trial probability will increase as both of these characteristics do, whilst decreasing with age. Examining age's influence, Steenkamp and Gielens (2003) discover new products achieve a higher trial probability amongst younger consumers. Thus, in light of just some of the many impacts of demographics on acceptance discussed above, the demographic characteristics examined in this research include age, gender, education, income, occupation and country of origin.

Scale items:

As sourced from the previously mentioned studies (detailed in the "Source" column), this research adapts or employs the scale items exhibited in Table 1.

Questionnaire:

A copy of the pen-and-paper questionnaire can be found at Appendices 1. The digital version of the questionnaire is a digital replication with page-breaks between sections of the questionnaire.

Chapter conclusion:

In service of transparency, this methodology chapter details the process behind the research undertaken in great detail. Through this discussion of the scientific methodology behind the research, critical review and potential replication can both be achieved, assisting further pioneering of this research context. The methodological discussion continues in the next chapter, which details the scale development process undertaken and the subsequent results of the affect scale across multiple samples.

Table 1: Research instrument scale items

Measure	Source	Item
Complexity	Kim and Kankanhalli (2009), Venkatesh, Thong, and Xu (2012)	Learning to operate it would be difficult for me I would find it difficult to use Interacting with it would require a lot of effort Switching to this product from another would create difficulties for me
Social Influences	Pedersen and Nysveen (2003), Sweeney and Soutar (2001)	People important to me would think that I should use this product It is expected that people like me would use this product People I look up to would expect me to use this product Using this product would make a good impression on those important to me
Perceived Value For Money	Sweeney and Soutar (2001)	The product is reasonably priced The product offers value for money The quality of the product is good relative to the price The product is economical
Usefulness	Lund (2001), Kulviwat et al. (2007)	Would help me be productive Would save me time in using it Would help me be effective Would make the task I wanted to accomplish easy to get done
Relative Advantage	Moore and Benbasat (1991), Wang, Meister, and Wang (2008)	Would enable me to accomplish tasks MORE QUICKLY than using other products Is MORE USEFUL than other products Would increase my productivity MORE than other products do Would offer an IMPROVED level of quality compared to other products
Image	Tian et al. (2001), Monkhouse et al., (2012), Belk (1985), Sirgy et al. (1997)	Would signal to other people my personal uniqueness Would signal to other people I am of high status Would make others envy me Would reflect an image consistent with how I see myself
Positive Affect	Butcher, Phau, and Marchegiani (2013)	Thankful, Happy, Pleased, Amazed, Surprised, Astonished
Negative Affect	Butcher, Phau, and Marchegiani (2013)	Bored, Unimpressed, Unexcited, Miserable, Sad, Depressed, Nervous, Panicky, Tense, Sceptical, Suspicious, Disbelief

Knowledge	Flynn and Goldsmith (1999)	I know a lot about insert product type
		I know how to judge the quality and price of *insert product type*
		Compared to most other people, I know more about *insert product type*
		I am familiar with most types of *insert product type*
Innovativeness	Agarwal and Prasad (1998), Steenkamp et al. (1999)	If I hear about new *insert product type*, I look for ways to experiment with it
		Amongst my peers, I am usually the first to explore new *insert product type*
		When I see new *insert product type*, I am likely to trial it
		I often seek out information about new *insert product type*
Perceived Behavioural Control	Taylor and Todd (1995a,b)	Using the product is entirely within my control
		I have the knowledge and ability to use the product
		I have the resources necessary to use the product
		I could get help from others when using the product
Compatibility	Taylor and Todd (1995 a,b), Yang et al. (2012)	This product is something I would use
		Using this product would fit well with my lifestyle and habits
		I feel a need to use this product
		I would appreciate using this product instead of alternative products
Credence	Murray and Schlacter (1990),Quintal, Lee and Soutar (2010)	*Financial Risk:* Would meet your expectations based on the amount of <u>money</u> you are required <u>to pay</u> for it? How certain are you of this?
		Performance risk: Would meet your needs, desires, or expectations in regards to <u>performance</u>? How certain are you of this?
		Physical Risk: Would be <u>physically safe</u>, and would NOT become unsafe, dangerous, or harmful? How certain are you of this?
		Psychological Risk: Would <u>psychologically fit well</u> with your <u>self-image</u> or how you perceive yourself? How certain are you of this?
		Social Risk: Would make important others <u>think more highly</u> of you? How certain are you of this?
		Convenience Risk: Would allow you to <u>save a lot of time and effort</u> when having your needs satisfied? How certain are you of this?
Attitude	Bagozzi, Baumgartner, and Yi (1992), Kulviwat et al. (2007)	Bad - Good
		Negative - Positive
		Unfavourable - Favourable
		How strongly do you hold this attitude?
Acceptance	Adapted for this study	*Resistance:* You DO NOT wish to purchase or further trial the product
		Trial: You wish to have further opportunity to interact with, research or use the product before deciding to purchase or not
		Purchase: You wish to buy the product in the future

CHAPTER 5: SCALE DEVELOPMENT

Having identified a gap in the literature pertaining to the absence of a scale suitable to measure the affect consumers experience when exposed to an innovation, this chapter details efforts to remedy this empirical shortcoming. Firstly, the chapter details the process behind the scale development undertaken, before discussing existing research into consumer affect. Having set the context of theoretical and practical application, the six step scale development process is then explained from a methodological perspective, before such is put into practice with results of this scale development revealed and scrutinized, culminating in illustration of the final measure.

Scale development procedure:

The development of a scale is not an empirical necessity, nor is it an empirical afterthought. Such a procedure should only be undertaken upon demand for a new intellectual direction, or in the identification of a missing constituent of the academic lexicon. Such an undertaking is solely dependent on quality research; in turn, quality research is entirely dependent on quality conceptual and theoretical foundations (Rowe, 2002). Thus, the clear thought of a scale's content is dependent on the clear thought of the construct being measured. Evidently, the necessity for a scale to be grounded in substantive theories arises, and refuses to be ignored (DeVellis, 2012). To ensure a robust and serviceable scale is developed, a thorough and rigid scale development procedure, like the one detailed below (see Figure 8), is followed with the relevant concepts, theories and empirical foresight consulted throughout (DeVellis, 2012) the three samples collected (Sample 1, $n = 316$; Sample 2, $n = 257$; Sample 3, $n = 200$).

Due to the plethora of multi-dimension emotions scales existent in the academic literature (Holbrook and Batra, 1987; Richins, 1997; Laros and Steenkamp, 2005; just to name a few), the process of developing a scale that successfully captures consumer's affective evaluations of an innovative product is not an expedition commencing from an undefined location. However, as no existent scale is considered (in the eyes of this researcher, see *Research Gaps*) sufficient in capturing the unique and academically ignored affective evaluations of such a specific research context, the development of a scale is an indispensable challenge, but one where the aforementioned previously established and widely adopted scales have served as both a launching pad and a counter point of which the proposed scale is positioned to be examined against. As the intended scale to be developed for this research has

no suggestion of an advised empirical structure, undertaking the preliminary processes of scale development is imperative. Thus, in order to successfully develop an appropriate scale of emotions that can parsimoniously encapsulated consumer's affective evaluations of an innovation, whilst remaining practically generalizable to other emotions or acceptance studies, the frameworks indicated by Churchill (1979) and DeVellis (2003) are employed. Herein, the proceeding components of this chapter detail the results.

Figure 8: Scale development procedure

1. Construct Specification	5a. Scale Validation (Sample 2)
2. Item Writing	4b. Scale Confirmation (Sample 3)
3. Scale Exploration (Sample 1) (Sample 2)	5b. Scale Validation (Sample 3)
4a. Scale Confirmation (Sample 2)	6. Develop Norms
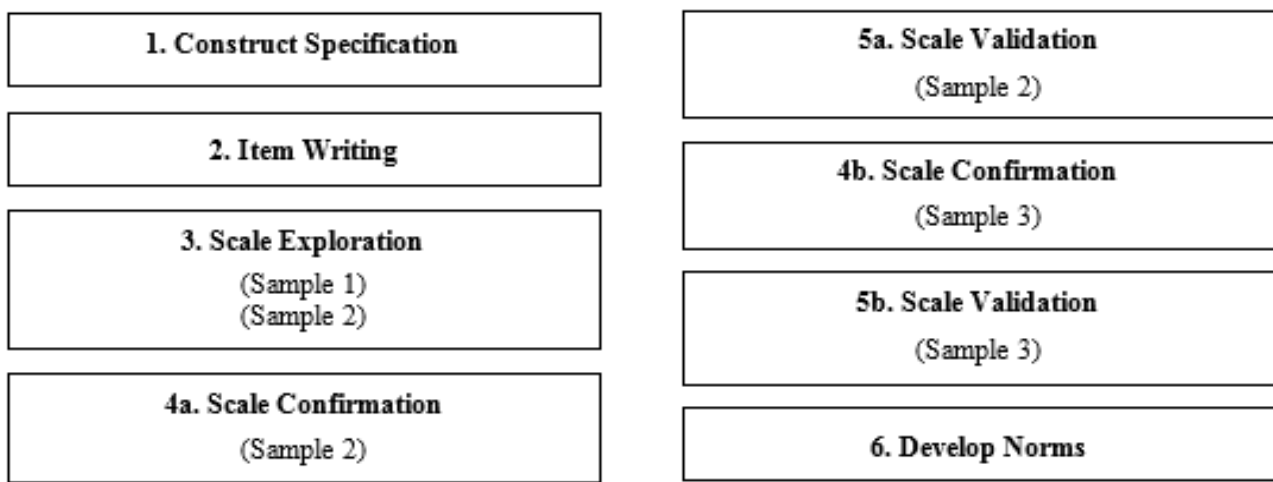
Adapted from Churchill (1979)

Scale background:

Just as the development of an efficacious affect measure has remained elusive to scholars, a universal definition of emotions is also yet to be established, and judging by the plethora of contexts in which emotions can be influential, such is unlikely to ever be established. Resultantly, various researchers develop affect measures suited to their own specific research context. One of these is Izard (1977), who based upon the identification of those emotions recognizable and universally associated with distinctive facial expressions, develops the differential emotions scale (DES) The ten fundamental emotions incorporating the DES are interest, *enjoyment, surprise, distress, anger, disgust, contempt, fear, shame/shyness*, and *guilt;* each measured with three adjective items making up the 30-item scale. However, several scholars note the high proportion of negative emotions in the DES, stressing the need for a broader sampling of emotions (Laverie, Kleine and Kleine 1993; Mano and Oliver 1993). Using an evolutionary perspective, Plutchik (1980) supports eight "primary" emotions that the author believes are in some form identifiable at all phylogenetic levels in the animal kingdom. Such research

birthed the emotions profile index (EPI), a 62-item forced choice emotion descriptors scale that measures the eight emotion constructs of *fear, anger, joy, sadness, acceptance, disgust, expectancy,* and *surprise*. Later, Holbrook and Westwood (1989) used Plutchik's (1980) eight primary emotions to develop their own shorter measure comprised of three adjectives for each emotion in which respondents reveal the intensity experienced for each of these adjectives. Whilst such scales are adequate affective measures, they are unlikely to be appropriate for application in all consumer contexts.

Affect in Advertising:

Affective responses to advertising are a locality of consumer behaviour research that has received a significant amount of attention (for a review see Wiles and Cornwell, 1990). Edell and Burke (1987) developed a 52-item scale to measure responses to advertising, discovering the feelings obtained from advertising could be summarized by three factors: upbeat feelings, negative feelings and warm feelings. Holbrook and Batra (1987) develop their own emotional scale to assess respondents' emotional responses to advertisements. The authors discover dimensions of pleasure, arousal and dominance in their data, just as Mehrabian and Russell (1974) had, concluding that these emotions mediate consumer responses to advertising. Furthermore, Batra and Holbrook (1990) develop a 34-item measure that assesses 12 affective-responses to advertising, whilst Steenkamp et al. (1996) further investigate the relationship between these three affective dimensions and evaluation of advertisements, discovering that emotions mediate consumer's responses to advertising.

Whilst the aforementioned measures are successful at assessing the primary dimensions of emotional states in response to advertising exposure, they are not designed to measure the nuanced and unique emotion states experienced during specific consumption situations. Through the process of developing her own consumption emotions measure, Richins (1997) recognizes several key reasons why this is so. Firstly, many of the emotions experienced as a result of advertising are vicarious rather than directly experienced, as a result, said emotions are often experienced in much lower intensities than they would be in a consumption experience (Aaker, Stayman, and Vezina, 1988). Secondly, advertisements are dramatic, often unrealistic re-enactments that are capable of eliciting and representing the huge range of feelings a consumer could possibly feel. Realistically though, the range of emotions likely to be elicited in consumption is much more restricted. Although these emotions may be addressed in the

advertising context, they are less likely to be relevant in consumer decision-making, and progress is not always germane with consumption-induced emotions.

Pleasure, arousal, dominance paradigm of affect:

Mehrabian and Russell's (1974) pleasure, arousal, dominance paradigm of affect (PAD) has been utilized in various acceptance studies (see Kulviwat et al., 2007; Nasco et al., 2008). However, the scale was initially developed not with the purpose of capturing the entire domain of emotional experiences, but to assess emotional responses to environmental stimuli such as architectural spaces or interactions with technology. Whilst considered empirically adequate, the generalizability of this scale to situations outside of its original contextual domain (such as interpersonal aspects of consumption or consumers pre-existing brand preferences) cannot be assumed. Another limitation of the scale lies in the specificity of its content. Herein, the PAD does not purport to "measure" as such; rather through 18 semantic-differential items (six each for pleasure, arousal and dominance) it assesses the perceived emotions one feels in response to environmental stimuli. Evidently, Chang and Chen (2008) criticize that the PAD is too narrow in its scope. Another apparent deficiency of the scale lies in its anchor point of measurement, of which many may not be considered to be antonyms by respondents, take for example *bored – relaxed, contented – melancholic*, or *excited - calm.* Such extremities could not only cause confusion amongst respondents, but may incidentally position researchers to overlook and even unduly assume the unique nuances of each emotion. Herein, as outlined by Richins (1997), "one cannot unequivocally infer the existence of specific emotion states such as joy, guilt, anger, or fear from a person's PAD scores. Thus, the PAD scale is best used when a researcher is interested in measuring the dimensions underlying emotion states and does not need to know the specific emotions being experienced" (p. 128).

Consumption emotions:

Whilst the academic examination of emotions has evolved over the last 40 years, the majority of established scales are incompetent in capturing emotions experienced specifically in the context of consumption. This is not to say that emotions are not pivotal in consumer acceptance studies though. In support of the findings of Childers et al. (2001), Dabholkar and Bagozzi (2002), and Bruner and Kumar (2005), Kulviwat et al. (2007) state that a more comprehensive understanding of adoption intention is likely by including affect into models of consumer technology acceptance. However, in

addressing the limitation of breadth in emotion measures (as recognized by Rogers, 2003), Kulviwat et al. (2007) proclaim, "the few studies that have incorporated affect have tended to measure a single emotion rather than modeling it comprehensively" (p. 1059). However, the few adoption studies that have included multi-dimensional affective measures (see Kulviwat et al., 2007; Nasco et al., 2008) have done so with some inadequacy, presenting the possible conclusion that a comprehensive integration of affect and cognition into one robust model is yet to be achieved.

From a methodological perspective, in addressing consumption related emotions, a common approach is to divide affective appraisals into positive or negative emotions (i.e. Izard, 1977). Through a bi-valenced categorization, Laros and Steenkamp (2005) infer several benefits, suggesting it allows a model to be kept simple (essential in any replicable research), whilst a combination of positive and negative emotions is more indicative of a person's attitude. However, in citing Bagozzi et al. (1999) and Lerner and Keltner (2000), the authors assert that through such a division, a precise understanding of consumer feelings may be neglected, whilst important distinctions within positive or negative emotions may be lost. Thus, studies such as Lerner and Keltner (2000) signify the importance of exploring with further depth the differences amongst emotions of the same valence. Such relates to Shaver et al.'s. (1987) assertion that different emotions may have different behavioural consequences. For example, a consumer who is disappointed or sad may not feel compelled to do something to rectify a situation; on the contrary, a consumer who is angry or irate may not. Thus, combinations of different emotions (of both valences) experienced in different intensities are likely to have significantly diverse effects on a consumer's behaviour and should be examined accordingly.

Richins (1997) suggests there are several profound limitations in the capacity of existing scales to measure consumption related emotions. Such paucities include the neglect of many emotions that may be pertinent in consumer's lives. Likewise, the author suggests many of the emotions comprising other measures may be confusing to respondents, and not easily identified as part of the everyday vernacular, with the unfamiliarity of which relegating them to a position of superfluity. In observing emotions from other like-minded scales such as "contemptuous", "revulsion" or "sheepish", this seems a legitimate argument. Finally, in identifying that emotions are context specific, and as a result experienced in different intensities, criticism is provided by Richins (1997) regarding the appropriateness of such measures in assessing the emotions elicited in consumption experiences altogether. In considering the difference in intensity (of a range of emotions) that may be experienced in various consumption experiences, for example purchasing underwear as opposed to purchasing a

winning lottery ticket, it is clear that the intensity and range of emotions are not comparable for these two situations. Additionally, certain consumption experiences may be unable to elicit the entire breadth of emotions that a person may experience; thus, a more refined and germane set of emotions is required. Resultantly, Richins' (1997) Consumption Emotions Set (CES) is designed as a starting point in determining the proper assessment of emotions elicited in consumption and should be used as a relatively broad coverage of consumption emotion states. In satisfying several objectives, the CES positions itself as a successor to many existing emotion measures, namely the DES (Izard, 1977), the PAD (Mehrabian and Russell, 1994) and Plutchik-based measures, subsequently capturing the range of emotions most frequently experienced in a breadth of consumption situations, and in a manner that is familiar to and readily understood by consumers in the field or amongst surveys and questionnaires.

Drawing heavily from Richins' (1997) whilst employing a hierarchical approach to measuring affect, pivotal consumption-related findings are discovered through Laros and Steenkamp's (2005) Hierarchy of Consumer Emotions (HCE). The authors integrate the allied research streams of psychology and consumer behaviour (drawing heavily from Richins, 1997) in developing their hierarchical model of consumer emotions. The significance of which lies in the development of an intermediate level of basic emotions that resides between the superordinate, most abstract level of positive and negative classifications, and the subordinate level of specific consumer emotions. The authors endorse an intermediate basic emotions level within their hierarchy, stating they "allow for a better understanding of the consumers' feelings, compared to only positive and negative affect" (p.1444). Furthermore, they stress that without a basic emotions level a researcher may merely collapse together emotions of the same valence. The consequences of such lie in the potential loss of important nuances, and in testing their HCE, Laros and Steenkamp (2005) discover improved measurement efficacy trough the incorporation of an intermediate level of basic emotions.

Step 1. Construct specification

A huge amount of research is conducted into affective processes across a plethora of disciplines and streams of research. However, when evaluating an innovative product, the influence of said emotions is a unique context that deserves its own measurement scale. As the development of this scale is heavily influenced by the existing scales of Richins (1997), and Laros and Steenkamp (2005), something that Noar (2003) identifies can assist in simplifying the process, DeVellis (2003) warns a scale developer must question whether the constructs they are measuring are distinctly different from those existing already. As both affect scales developed by the two aforementioned authors are quite similar (the latter a derivative of the former), it is essential that the final affective scale developed is distinct and unique from existing scales. This will be achieved by drawing from a wider palette of emotions employed across various disciplines and academic contexts, utilizing only those emotions deemed most salient to this research context. Throughout the exploratory stages of this research, the clusters (factors) of basic emotions that will be formed to comprise the final scale will not be speculated upon prior to completion of the final scale development stages, as empirical analysis will be employed as a guide.

Reflective vs. formative measures:

In relation to the measurement model being developed, several considerations must be made that inform the causal orientation of the measurement model (i.e. is it reflective or formative). The characteristics considered in this scale development process include:

- In such emotions, a change in a basic emotion factor (or construct) is likely to be observed through a change in the experience of an individual emotion item. This relationship does not exist in the opposing direction of association, and is expected to remain the same irrespective of other constructs that could be included in a structural model

- Emotion factors that may form exist independent to their measures and if we did not measure them, they would still exist. For example, perceptions of the *usefulness* of a product are made by consumers and measured through responses to empirical indicator variables; yet the construct still exists independent to its measure

- Changes in these latent variables precede changes in the indicator variables that will be used to capture them. For example, as a consumer has a stronger sense of *Construct A*, they will feel more of its indicator variables *A*, *B* and *C* (assuming a positive relationship is existent)

- Inclusion or exclusion of one or more indicators from the domain does not materially alter the content validity of the construct" (Coltman et al., 2008; p.8). For example, if Indicator B is removed from Construct A, and replaced with the semantically and conceptually similar *Indicator D*, the composition of the latent construct will not be strongly altered.

- Finally, emotion items within a construct are expected to be highly inter-correlated

As a result of these characteristics of the causality of emotions measures, the measurement model that will be employed will be reflective in nature, with latent constructs instigating changes in indicator variables (items).

Step 2. Item writing

A wide and diverse set of emotion items must be drawn upon to develop a suitable scale to measure consumer's affective evaluations of an innovation. In accordance with those procedures recommended by Churchill (1979) and DeVellis (2003), the items used to develop this scale are sourced in the following ways:

Development of an initial item pool:

Through a thorough review of emotions literature in the context of innovation acceptance and consumer behaviour, a pool of items is developed to comprise the initial items examined in the scale. Clark and Watson (1995) advise that if a wide range of content is included in the initial item pool, then a scale's range of utility will be more clearly defined, and as a result a broad conceptualization of innovation emotions is included. The development of this scale intends to draw items from a broad range of consumer and innovation acceptance contexts. This will ensure a multi-dimensional measure suited to the specific research context whilst remaining broad enough to exhibit maximum validity.

Item writing:

As each emotion item will be examined as a single-item with respondents questioned on the extent to which they experience that specific emotion when exposed to an innovation, the item writing stage is simplified considerably. Thus many of DeVellis' (1991) suggestions will be automatically satisfied, with careful consideration still be given in the wording of the scale question and its items, including their clarity and conciseness, concrete and specific nature, the variety of positive and negative emotions portrayed in conceptually different ways, and broad coverage of the entire domain of content without alienating any potential respondents. Items that are confusing or may be easily misinterpreted by respondents will be addressed during the content validity stage, particularly in consultation with members of the population and experts.

Content validity:

Haynes, Richard, and Kubany (1995) identify that instruments and scales have different applications (or domains of interest) of which they are content valid for. As the final scale will be employed to

examine it's empirical relationship with other psychometric scales, it is essential the measure is an appropriate representation of the constructs it is intending to capture – emotions experienced when exposed to an innovation. Thus, the measure itself must adequately sample its domain of interest (Wynd, Schmidt, and Schaefer, 2003), and is limited to pre-adoption of people who are generally unfamiliar with these new products. This research is not intending to examine the emotions they feel after trailing or purchasing. Thus, the items used to capture this context must be valid to this particular conceptualization; this is ensured through the following content validity procedures:

Literature reviews:

An initial step in this research involves exploring the extant literature to firstly establish what research had been conducted into consumers affective evaluations, and secondly, to examine whether any researchers had focused their attentions towards the specific context of affective evaluations of an innovation. This task is approached with an open and accommodating mindset, so that no potentially salient emotions are overlooked on face value as a result of their differing research contexts. Through a large amount of investigation, it became clear that research conducted on the impacts of emotions in consumer behaviour and other disciplines (see literature review chapter for a thorough summation) is ubiquitous, however no research had been conducted into the specific context of which this study directs its attention. The most relevant consumer emotions scales existing in the literature are that of the CES (Richins, 1997) and the HCE (Laros and Steenkamp, 2005). These scales suggest that individual emotions form into clusters of basic emotions, situating themselves within these overarching categories. The latter of these scales, the HCE, takes such a perspective further, indicating that emotions establish a hierarchy, with a superordinate level succeeding the basic level of emotions, which succeeds the individual emotion items themselves. As such observations are still in their academic infancy and are yet to face extensive empirical scrutiny, it is unclear whether such a hierarchy will be observed. However, due to their large size and somewhat removed conceptualization, these scales in their whole and final form, are deemed inappropriate to examine consumer's affective evaluations of an innovation.

Consulting with members of the population:

The aforementioned literature review unearthed numerous emotion items that are examined across a variety of consumer behaviour disciplines. However, as no existing scale alone is deemed sufficient,

126

these emotions must be drawn upon to compose the preliminary stages of the scale development procedure. The sizeable number of items drawn from the literature must now undergo thorough content validity assessment to ensure they are adequately contributing to the conceptualization of the measure. The next stage in the process involves consulting with members of the population.

Administering focus groups:

As this research draws on items from well-established and regularly employed empirical scales through an extensive literature review procedure, it is believed that little would be gained from considerable consultation with the population under examination. Furthermore, the resources required would outweigh the benefits, and the incremental validity of such a process is considered insufficient. Thus, it is deemed that only a modest focus group stage is necessary to discuss the conceptualization of consumer innovation emotions. Due to the existent nature of the items, their contextual re-shaping to this new and unique context, and the fact that the pool of items is comprised of single-worded semantic representations; two focus groups are conducted with 10 participants.

The first focus group is conducted with five individuals. After conducting this initial focus group, an identical session is conducted with five more homogenous participants that are of a younger age. As such individuals are believed to be more receptive to new technologies and products (Horrigan, 2003; Kulviwat et al., 2007), a richer discussion amongst participants is likely to be fostered (Morgan, 1996). Due to the relatively impersonal, and easily comprehendible nature of the focus group discussion, this is deemed a sufficient figure to create an appropriately deep discourse and extract the information needed pertaining to the experience of consumer emotions when exposed to innovations. Additionally, participants are informed prior to commencement of the focus group that they are participating so to provide information on the experience of emotions, and that there are no right or wrong answers, just their own appraisals or opinions. Furthermore, anonymity outside of the study is assured.

Due to the relatively specific nature of the research, and the minimal input required from participants, a member of the research team is employed as the discussions facilitator. This ensured the discussion stayed on course with the specific research context, yet is allowed to deviate if a particular evaluation or opinion is deemed beneficial to the group discourse. The focus groups are conducted in a comfortable boardroom scenario with participants sitting around a table with the facilitator, allowing each the opportunity to contribute equally. Additionally, each and every participant is encouraged, and

asked throughout the procedure to provide their opinion, particularly if it is different to that already discussed.

To arouse discussion, a series of open-ended questions regarding the innovations (that are later employed as stimuli in the research instrument) are initially asked, with several examples of innovations exhibited, and discussed in a general sense. Respondents are then asked to what degree they perceive these products and services to be innovative, and to what extent they consider them technological, and utilitarian and hedonic in nature. To ensure the correct comprehension of these terms by participants, general language and technical or academic jargon is avoided. Respondents are next presented with each emotion item, and asked to discuss if the emotion is clear and simple to understand, its relevancy to the innovation acceptance context, and to what extent and intensity they have experienced that emotion when exposed to the previous innovations. Respondents are finally asked if there are any emotions they experienced or could think of that had not been discussed.

The facilitator of the focus group (a member of the research team) is involved in the discerning of what information is and is not considered relevant to the research context. The research team then met and discussed the information extracted, forming a consensus that the emotions extracted, and the evaluations pertaining to them are suited to a broad conceptualization of the emotions experienced during exposure to a new innovation. Furthermore, the team do not note any concerns with the comprehension and clarity of the items. Krueger (1998) identify that such a consensus aids in establishing evidence for reliability of the data collected. This stage of content validity is considered iterative, as information provided in the focus group is used to approve and modify wordings of the definitions, questions and items to be retained. Through undertaking the focus group procedure, many items are removed from the pool due to issues with comprehension, their lack of relevance to the research context, and whether the experience (or absence) of that emotion is deemed necessary. Additionally, the definitions of innovativeness, technological, and utilitarian, hedonic are deemed satisfactory, and the wording of the scale question is slightly modified (as this is modified again, it will be discussed later). Specifically speaking, as a large proportion of items from both the HCE and CES are identified through the focus group sessions as relevant to this research context, both the scales are retained in full for further analysis alongside several other emotion items in the preliminary pool of 57 items.

Expert review:

In accordance with the steps outlined by Li, Edwards and Lee (2002) and DeVellis (2003), a group of three experts (academic and industry) evaluated the relevance of each emotion to the scale in a manner similar to the focus group participants. In accordance with Noar (2003) and Vogt, King and King (2004), a panel of experts will scrutinize the research instrument so to establish that the research instrument is correctly conceptualizing consumer innovation emotions. Due to nature of the research items, each of the emotions included could be considered an "influential force" on a consumer's evaluation of a particular innovation, and as a result, experts recommend no further items for removal. Additionally, it is the opinion of the researcher team that due to the unique personal appraisals made by consumers, one cannot say that a consumer could not, or with what intensity they could feel an emotion; for example *homesick* or *fulfilled*, in response to the innovative products examined. Each consumer is likely to evaluate innovations individually in a fashion that is subjective to them. Regarding clarity and comprehension, no items are removed.

In consideration of clarity and conciseness, the panel of experts did suggest minor modifications to the definitions of "innovativeness", and "technological" provided to respondents. These modifications recommended can be observed in the wording of the definitions and the scale question in the final research instrument. Furthermore, as the CES and HCE scales (as well as other items employed) are utilized in a unique context distinct to those of their original application to an innovation-specific affective appraisal, the scale items employed must reflect such a context to ensure the content validity of the scale is acceptable. Thus, based upon the suggestions of experts, and to highlight the empirical direction of this study to respondents, the wording of the scale question itself will make it clear that the emotions being measured are those experienced in regards to the product itself. No mention will be made of how respondents feel whilst consuming the product, or to the act of adoption. This slight, yet integral variation will better reflect consumer's affective evaluations of the product, and due to the nature of this specific scale, each emotion is included on its own, as the single focus of that particular item; the emotion is not used as a part of a larger sentence, or any sort of bipolar comparison.

Enhancing content validity:

Given the nature of questions, research environment, and anonymity of respondents, this research is not faced with any concerns of social desirability or similar issues in administering the affective scale

to respondents. However, in an attempt to improve content validity, DeVellis (2003) suggests that during the process of scale development, researchers may wish to include items in the questionnaire that detect flaws or respondent failure. It is the view of this researcher that firstly, the items employed have come from sufficiently established sources, and secondly the scale is already utilizing a large enough number of items (57), that inclusion of more items could lead to respondent fatigue, consequently deteriorating the accuracy and reliability of the findings. However, in an effort to ensure the scale is developed with as much rigour as possible, the randomization of items (see Pre-test), and the inclusion of one emotion twice ("Fulfilled") is employed to serve as an indicator of respondent's failure.

Additionally, other remedial tactics are taken, including the randomizing of the order in which respondents are asked to examine items (as identified in the "pre-test" stage of the scale development). This is employed by firstly splitting the emotions into two groups, with the order in which respondents are exposed to these two groups randomized, and the order with which each emotion appears within each group randomized. Such tactics help to ensure that the biasing effects of other emotions, the likelihood that items are incorrectly filled out, or respondent fatigue is minimized, thus enhancing the content validity of the scale.

Emotion items employed:

Results obtained from the initial literature review, consultation with members of the population, and expert review revealed 57 emotion items to be utilized for further assessment (see Table 2). Based upon this preliminary figure, a final scale of around 20 items would therefore adhere to DeVellis' (1991) recommendation that an initial pool of items be around two to three times the size of the final scale. Of these 57 emotions deemed most relevant, the emotion items from the HCE and CES (including *Pride*) scales are retained in full (as mentioned above), whilst 13 emotions are employed from Holbrook and Batra's (1988) Standardized Emotions Profile (SEP), and 3 from the research of Inman and Zeelenberg (2002).

Controlling for common method variance:

As previously addressed, common method variance (CMV) is observed when variance in the data is attributed to a measure, research instrument, or research environment, rather than the constructs being

Table 2: Initial pool of emotion scale items

Basic Emotion	*Adapted from the HCE* (Laros and Steenkamp, 2005) Individual Emotions
	Negative Affect (Second-Order Factor)
Anger	Angry, Frustrated, Irritated, Hostility*, Discontent, Unfulfilled
Fear	Scared, Afraid, Panicky, Nervous, Worried, Tense
Sadness	Depressed, Sad, Miserable, Helpless*, Nostalgia*, Guilty
Shame	Embarrassed, Ashamed, Humiliated
	Positive Affect (Second-Order Factor)
Contentment	Content, Peaceful, Warm Hearted$
Happiness	Optimistic, Encouraged, Hopeful, Happy, Pleased, Joyful, Relieved, Thrilled, Enthusiastic
(1)	Amazed, Astonished, Calm, Sentimental, Surprised,
(2)	Benefited, Bored, Competent, Confident, Entertained, Grateful, Light Hearted, In Control, Playful, Sceptical, Suspicious, Thankful, Unexcited, Unimpressed, Uninvolved
(3)	Disappointment, Regret, Anxious

(1) = Adapted from the CES (Richins 1997), not in the HCE
(2) = Adapted from initial SEP (Holbrook and Batra, 1987), not in the HCE or CES
(3) = Adapted from Inman and Zeelenberg (2002), not in the HCE CES or SEP
* Indicates the item exists in the HCE but not the CEP
$ Warm hearted extracted from Laros and Steenkamp's (2005) pre-specified HCE model

captured. Thus, CMV is damaging to studies, as estimates of construct reliability and validity can be damaged (see Cote and Buckley 1987; Baumgartner and Steenkamp, 2001; Williams et al. 2010), and bias may occur in the estimates of regression equations between predictor and criterion variables (Podsakoff et al. 2003; Siemsen et al. 2010). To reduce the potential of any bias in the measurement of the focal constructs, the aforementioned three procedures (literature reviews, consultation with members of the target population, and expert reviews) are undertaken so to select only the most appropriate items for the research context. Furthermore, qualitatively assessing (focus groups and expert reviews) and retaining items in consideration of sample responses helps maximize content validity. In doing so, it is believed that the negative externalities of CMV are suitably diminished, allowing for the appropriate capturing of data to explore the focal construct of consumer emotions experienced when exposed to new innovations.

Step 3. Scale exploration

In the development of the consumer innovation emotions scale, the main objective of the scale exploration step is to determine the set of individual emotion items that will comprise the clusters of basic emotion factors to be utilized in the final scale. This is undertaken so to successfully position the scale to further eliminate any items that produce unsatisfactory measurement error (Churchill, 1979). To achieve such an objective, the procedure of exploratory factor analysis is undertaken with the aspiration of maximizing validity and reliability. Prior to this, the data collection process is scrutinized, with specific attention paid to the pre-testing stage. Finally, scale exploration is conducted through the statistical analysis software package SPSS 19.

Issues with existing scales' collection:

Past emotion scales (e.g. the HCE and CES) have measured emotions with either four or five-point Likert type scales, anchored by semantic extremities. It is stated by Noar (2003, p. 625) that when developing a scale, "the key here is to think through the potential uses of the scale and what the most appropriate response format might be". Considering this perspective, this research considers such measures deficient for several reasons. Firstly, such a narrow range of scoring cannot fully accommodate the broad range of intensities that something as complex as emotions is likely to be experienced by an individual. Secondly, scale types such as the PAD (Meharabian and Russell, 1974) make the assumption that a respondent experiences emotions in a "trade-off" type scenario. Due to the complex, individual nature of emotions, this is an extremely unlikely occurrence. For example, the PAD (as utilized by Kulviwat et al., 2007; Nasco et al., 2008) measures emotions as bi-polar opposites in the form of semantic differential scales. Such a measure is considered dysfunctional in this research context, as emotions are personally subjective, difficult to conceptualize, and not always elicited in every situation. Additionally, several of the emotion bi-polars used in the PAD; for example "Pleased" and "Annoyed", or "In Control" and "Cared For", cannot conclusively be considered antonyms of the same emotion. Emotions are very complex evaluations and even simple antonyms such as "Unfulfilled" and "Fulfilled" do not necessarily always conceptualize the same primary emotion with opposing valences. Furthermore, because a respondent may experience one of these emotions, does not exclusively mean they cannot experience the opposing emotion in the bipolar comparison. Both emotions can be experienced in different intensities, or possibly but less likely, both emotions could be experienced in the same intensities. Specifically, it is possible that one attribute, element or

132

component of a product could elicit happiness in a respondent, whilst another sadness. Herein, this research does not conceptualize emotions as antonyms.

Pre-testing:

Having developed a set of items that are believed to allow for a broad conceptualization of consumer affect within the specific research context, the focus must turn to administering those items to respondents in a manner suggestive of the research environment and context. The collection of data is a very precarious stage of research that has the potential to create huge issues with the validity of the study; thus, substantial consideration for common method variance has been considered prior to the scale's administering, with pre-testing employed so to ensure it operates as effectively as possible in its execution. The research instrument is pre-tested with a sample of 24 students before it is administered to an appropriate sample for the main study (Student samples are identified as a successful surrogate sample group in scale development by Yavas, 1994). This pre-test employs a convenience sample, administering the research instrument to respondents through an online questionnaire. During the pre-test, the relevance of the sourced items to the scale is initially examined from a face-value perspective, and later assessed in more depth. Respondents will complete the questionnaire unprompted, other than the basic instruction provided within the instrument. Such examination is undertaken to determine whether a particular emotion or factor is relevant and appropriately administered through the unique context of this research. Additionally, the questionnaire faces pretesting to examine its clarity, length and flow, by requesting feedback on these characteristics. Such assessment is utilized so to perfect the scale and research instrument for the main study.

In examining the responses of the pre-test sample, it is clear that some respondents appeared to have issues with the emotions scale. As many conflicting responses are collected, it appears some participants misinterpreted what is asked of them, as well as the anchor points for the measurement scale itself. To negate these concern, the inclusion of an option of zero ("0"), is included into the scale points indicating that the respondent does not experience the emotion at all. This is necessary as it appears some respondents may have confused the scale with a traditional Likert-scale, as many of the emotion items (particularly the less relevant and more complex ones) are indicated through a score of "4", suggesting a neutral response (i.e. they did not experience the emotion). To further address this potentially severe issue, an instruction is included in later versions of the scale that if one does not feel the emotion, this is indicated through a score of "0", the midpoint of "4" indicates a strongly felt

emotion, not a neutral response. Therefore, a respondent who evaluates the emotion suggesting they did not experience it with any intensity should indicate a score of zero. The scale used does not offer counterpoints or opposing valences for the same semantic description like many Likert scales, rather it is a basic continuum ranging from not experiencing the emotion to experiencing it in a strong intensity. To avoid confusing respondents with the Likert-type scales where a middle score indicates a neutral or ambivalent response, it is outlined to respondents (in future instruments) that a score of "0" indicates a neutral or non-existence intensity of that emotion experienced.

Questionable responses from the pre-test confirmed the suspicions of this researcher that a 5-point scale may not be sufficient to encapsulated respondents affective appraisals of the innovation. If not rectified, (along with the aforementioned concern) such an issue could damage the convergent validity of the measure, as respondents who experience the emotion may indicate it through varying intensities, whilst content validity could also be over or underestimated. In light of this shortcoming further phases of the scale development procedure implement an 8-point continuum. This widened range of response is necessary, as a smaller range does not allow for respondents to make evaluations with any specificity. For example, as is the case of many extant affect scales (i.e. the HCE, CES), if a score of 1 is indicative of not experiencing the emotion, and 5 indicative of very strongly, there is very little room left for a respondent to reveal other intensities with which the emotions are experienced.

In light of these concerns raised in the pre-test, the scale question is modified. Thus, respondents will be asked, "Please indicate to what extent you feel the following emotions towards the product shown in the stimulus" when first faced with the items. Several specifics of this question are worth noting:

- To communicate that respondents need to consider their affective appraisals, the word "emotions" is bolded and in red in the question
- To draw attention to the context that the study is focused on the emotions experienced regarding the stimulus (not adoption, the advert etc, such as in other studies), the words "towards the product shown" are highlighted
- To clarify that the scale is a continuum, not a Likert scale where the middle score (i.e. 4) is a neutral response; below the question it is noted "PLEASE NOTE: a score of "0" indicates that you DO NOT feel the emotion towards the product at all"
- To further reiterate this point it is stressed that, "A score of 0 is a neutral response, not a score of 4. A score of 4 indicates feeling of that emotion rather strongly"

Additionally, it is acknowledged through the pre-test that the initial pool of items is sizable. Thus, to reduce the effects of respondent fatigue, the emotions measured are split into two blocks. Respondents indicate their evaluations regarding both blocks, but the order in which they received each block of emotions is randomized, as well as the order of the emotions in each block being randomized. It is expected that these amendments to the methodological assessment of emotions will result in a more valid, generalizable and quite simply improved measure of consumer's affective evaluations of innovations. Because of the extremely personal and unique experience surrounding emotions, and the unique way in which this study measures them, the provisions addressed from the pre-test will help ensure the scale captures the intended content with maximum validity. Furthermore, the scale is best positioned to ensure that respondents provide their evaluations in a manner as close to their actual experiences as possible, thus ensuring findings of the research remain valid. As the eventual scale administered will be quite small (expected to be around 20 items), the items generally single-worded, and the results from this initial pre-test are sufficient to the point that no further pre-testing is deemed necessary.

Pre-testing and common method variance:

Successful pre-testing further refined the research instrument, ensuring it not only performs adequately from a perceived content validity perspective, but that it also addresses the four key types of CMV effects as outline by Podsakoff et al. (2003). Speaking specifically to this research, through undertaking the pre-testing, the complexity and clarity of the items are refined so not to be ambiguous or confusing. In consideration of the cautionary suggestions provided by several authors (see Spector, 1992; Peterson, 2000; Podsakoff et al., 2003), the research items and questionnaire instructions employed in this study are further refined so to be focused, simple to understand, and free of idiosyncrasies or unfamiliar colloquialisms. As the stimuli are designed from industry examples in an attempt to maximize ecological validity and be as "realistic" as possible of real-world innovation exposure, the occurrence of any modified transient mood states because of this stimuli are not avoided; rather it is embraced. Thus, if any common method variance occurs as a result of this stimulus, they are accepted into the study as a necessary externality that a typical consumer would experience.

Administering the research instrument (Sample 1):

Having refined the scale through scrupulous content validity, common method variance, and pre-test assessments (across multiple stages of development), the research instrument is administered to a new and independent sample for the first round of data collection. This first sample collected is primarily a student sample (Kulviwat et al., 2007; Nasco et al., 2008), which Horrigan (2003) has identified (the young tech elite) as an attractive segment to marketers of innovations as their usage of innovative products is likely to influence how the later majority of consumers will eventually behave. Kulviwat et al. (2008) further stated, "Students were considered a particularly relevant and appropriate segment to use in a study of technology acceptance" (p.1069), and students are identified as appropriate surrogates in scale development studies by Yavas (1994). Thus, the sample collected in this study is considered appropriate for this research context and empirical contribution.

In this stage of data collection, a print-style stimulus typical of industry collateral (with minimal branding) is used to evoke appraisals from respondents. The feature innovation of the stimuli is a portable heating and cooling device named the *Electrolux Ribbon*. The product is a new innovation that at the time of data collection (and possibly still) is not available to the Australian, and possibly worldwide market; thus it is deemed eligible and relevant to the pre-adoption context of this research, as respondents have not had the opportunity to use or purchase the product. If respondents did indicate they had used or purchased the product previously, they are removed from the study; thus all respondents are situated as non-users experiencing pre-adoption. The focal innovation is also selected because of its relevancy and versatility to a wide range of consumer markets. The product is one that appeals to (more or less) all ages, genders, and geographic areas, and could be particularly useful to students, especially those living out of home. In the stimulus, the product is priced at $99.95, so it did require a moderate financial sacrifice, but is unlikely to be deemed so expensive (or cheap) that it's price would heavily influence respondent's affective appraisals, or any other non-value cognitive or conative assessments. The aforementioned methodological specifics are undertaken so to create a pre-adoption context that replicates what many consumers are likely to encounter in reality; one where they possess little existing knowledge about the product itself but are informed of the product's intrinsic and extrinsic attributes through the form of an advertisement-style stimulus. An example of the research instrument employed can be found in Appendices 1.

For this and any subsequent rounds of data collection, the research instrument administered commences with exposure to the stimulus, and is then followed by the affective items. This approach is employed so the affective evaluations of respondents are not violated by the length, tone or nature

of any other questions in the research instrument, thus minimizing the potential for CMV. Having viewed the print stimulus in the research instrument, respondents are asked, *"Please indicate to what extent you feel the following emotions towards the product shown in the stimulus"*.

Controlling for common method variance:

In this scale development, as advised by Podsakoff et al. (2003), a number of procedural controls are put in place so to reduce CMV in the data collected; these are as follows:

- The online data collection in this research is to be completed at the respondent's discretion, thus respondents can be provided in an environment and at a time that comfortably suits the respondent

- Efforts are made in item and questionnaire design, as well as the context in which the questionnaire is administered to reduce any potential method variances of social desirability or transient mood states

- Respondents are assured of the anonymity of their responses through the initial introduction to the research instrument, informing them their data will not be shared with any persons or organizations outside of the study, and that the researchers do not work for the brand of the subject of the stimulus

- Respondents are informed of the length of time the questionnaire should take to complete, so they are psychologically prepared for the questionnaire length, avoiding respondent fatigue and incomplete or unintelligible responses

- The subject innovations are inoffensive, relatively continuous (in innovation terms), and the questionnaire un-provocative, thus minimizing any potential social desirability feelings, or salient changes in mood states

- A variety of scale anchors (including "Not at all" – "Very Strongly", "Strongly Disagree" – "Strongly Agree", "Extremely Improbable" – "Extremely Probable") are utilized to avoid scale formats and anchors considered too similar

- A variety of scale formats are used, including bipolar scales, Likert scales, and continuums; with each administered in such a way that they do not damage flow, or add to respondent ambivalence or confusion

- Reverse-coded items are not employed in light of the critical findings of Idaszak and Drasgow (1987), Schmitt and Stults (1986), and the potentially damaging results observed from the pretesting

- Questions are long enough in length and separated into several blocks so the likelihood of drawing upon previous questions in responses to subsequent answers is reduced (Harrison, McLaughlin, and Coalter, 1996)

Exploratory factor analysis (Sample 1):

Methodology:

Exploratory factor analysis (EFA) examines the dimensionality of a set of empirical indicators, in this case emotion items, delineating the smallest number of interpretable factors to convey the correlations amongst these items (Brown, 2006). Therefore, employing this procedure will allow the number of emotion items to be reduced to a more relevant, usable pool based upon the correlations between items and their formation into clusters. As outlined by Brown (2006), the exploratory nature of the procedure allows minimal (or even no) restrictions to be placed on the pattern of relationships between items and latent constructs. Thus, the composition of the factor structures suggested by the data is not predetermined, allowing for the researcher's experimental disposition to direct proceedings. However, as stated, such results are purely what is suggested by the data based upon the correlations between items and latent constructs, thus they must be approached with an open mind, but also a degree of scepticism and rationality so researchers are not entirely driven by data. Evidently, to avoid such mistakes, this research will ensure any decisions made regarding the retention or rejection of items is done so based on a strong theoretical and empirical grounding.

Across a wide range of research contexts, the literature has suggested the formation of many basic emotion clusters (see Holbrook and Batra, 1987; Richins, 1997; Laros and Steenkamp, 2005) acting as latent constructs. Whilst it is anticipated that such a framework will be observed in this research, the composition of basic emotion clusters (latent constructs) is unknown, and evidently will not be estimated. Due to the large number of items under examination (57), the number of factors is not speculated prior to analysis, allowing the data (with a degree of research intuition) to drive the formation of latent constructs, thus reinforcing the exploratory nature of the research. It must be acknowledged that the EFA conducted in this research employs principal component analysis (PCA) (as recommended by Field, 2009), which is subtly distinct from conventional factor analysis (as communalities are estimated from a set of linear variables; Dunteman, 1989).

Conceptually speaking, the assertion that the experience of one emotion is not in some way linked to, or influential on the experience of other emotions, is difficult to entertain. Thus, due to the highly inter-related nature between emotions, oblique factor rotation is employed. Such a process helps ensure the axis with which variables are plotted onto is rotated so the latent constructs are best intersected by the factor that it is most strongly related with, whilst minimally loading onto all other factors. Alternatively, it could be interpreted that oblique rotation allows indicators to correlate freely amongst themselves. Supporting the use of such rotation, Field (2009, p. 644) suggests, "In practice, there are strong grounds to believe that orthogonal rotations are a complete nonsense for naturalistic data, and certainly for any data involving humans". Thus oblique rotation is justified for this research context, and *direct oblimin* factor rotation is employed.

Results:

Sample characteristics:

The research instrument (including the scale) is initially administered to a sample of 351 respondents, of which 35 respondents are removed due to failure to properly complete the questionnaire. As the questionnaire is completed online through software that enforces the completion of all items, no missing items are detected. However, some respondents may have not taken the time to read the questions correctly, provided unintelligible responses, or simply are disinterested in completing the questionnaire completely; thus, are removed from the study. Evidently, Sample 1 is comprised of 316 respondents, with the socio-demographic characteristics of the sample (as well as later collected samples) illustrated in Table 3.

Table 3: Socio-demographic characteristics (all samples)

Socio-Demographic Characteristic	Sample 1 (n = 316)		Sample 2 (n = 257)		Sample3 (n = 200)	
	n	%	n	%	n	%
Gender						
Male	131	41.5	90	35.02	93	46.50
Female	185	58.5	167	64.98	107	53.50
Age						
18 – 20	122	38.61	99	38.52	69	34.50
21 – 24	118	37.34	119	46.30	87	43.50
25 - 34	14	4.43	17	6.61	18	9.00
35 - 44	4	1.27	4	1.56	5	2.50

45+	0	0	1	0.39	0	0.00
Not specified	42	13.29	17	6.61	21	15.50

Annual Income

Less than $15 000	143	45.25	126	49.03	128	64.00
$15 001 - $30 000	58	18.35	40	15.56	31	15.50
$30 001 - $45 000	15	4.75	9	3.50	11	5.50
$45 001 - $60 000	12	3.80	8	3.11	6	3.00
$60 001 - $75 000	7	2.22	2	0.78	1	0.50
$75 001 – $90 000	2	0.63	4	1.56	1	0.50
$90 001 +	5	1.58	1	0.39	4	2.00
Not specified	74	23.42	67	26.07	18	9.00

Education

High School Yr. 10	3	0.95	1	0.39	0	0.00
High School Yr. 12	21	6.64	19	7.39	10	5.00
Tafe / Polytechnic	18	5.69	10	3.89	10	5.00
Trade / Professional	2	0.63	0	0.00	2	1.00
Uni. Undergrad. (incomplete)	268	84.8	222	86.38	175	87.50
Uni. Undergrad. (complete)	4	1.27	5	1.95	3	1.50
Uni. Honours or Masters	0	0.00	0	0.00	0	0.00
Greater	0	0.00	0	0.00	0	0.00

Occupation

Student	289	91.46	234	91.05	176	88.00
Self- Employed	5	1.58	1	0.39	4	2.00
Professional	12	4.00	12	4.67	15	7.50
Unemployed	3	0.95	2	0.78	0	0.00
Retired	0	0.00	0	0.00	0	0.00
Skilled Worker	0	0.00	2	0.78	0	0.00
Homemaker	0	0.00	0	0.00	0	0.00
Other	7	2.22	6	2.33	5	2.50

Country of Birth

Australia	76	23.42	86	33.46	36	18.00
China	25	7.91	30	11.67	21	10.50
Hong Kong	19	6.01	3	1.17	2	1.00
India	26	8.23	6	2.33	37	18.50
Malaysia	45	14.24	45	17.51	35	17.50
Mauritius	52	16.46	23	8.95	3	1.50
Singapore	2	0.63	3	1.17	46	23.00
Other	72	22.78	61	23.74	20	10.00

Country of Residence

Australia	225	71.20	197	76.65	80	40.00
Malaysia	37	11.71	38	14.79	25	12.50
Singapore	54	17.09	22	8.56	90	45.00
Other	0	0.00	0	0.00	5	2.50

As indicated in Table 3, of the 316 respondents of which data is collected for, 131 (41.5%) of the respondents are men, and 185 (58.5%) female. Of those respondents, the mean age is 21.2 years of age, with 75.95% of respondents (who indicated their age), 24 years or under. Of the sample collected, respondents are born in a variety of countries, with 23.42% born in Australia (the country the study is conducted), 14.24% from Malaysia and 16.46% Mauritius. The reason for the nationalistic diversity observed in the sample can be attributed to the data collection of this stage of the research happening across multiple campuses (domestic and international) of an Australian university. However, of these respondents 71.20% currently reside in Australia. Such suggests a very culturally diverse sample, with a large focus on the Asia-Pacific region. In assessing respondent's income levels, it is discovered that 63.60% or respondents earn only up to AUD $30, 000 per annum. This is no doubt due to the large number of students (91.46%) comprising the sample. In innovation studies such as this, the use of a student sample is not necessarily considered detrimental, and as identified by Horrigan (2003) and Kulviwat et al. (2007), similar samples are considered an attractive segment to innovation marketers. In light of these sample characteristics, it is determined unlikely that any demographics play a damaging role in shaping the appraisals made by respondents regarding their experience of emotions, when exposed to an innovation prior to adoption.

Item characteristics:

Of the 57 items examined in this initial sample, the frequency statistics can be observed below (Table 4). Across all of the emotion items, a wide range of average scores is observed, from 1.21 (*Angry*) to 5.76 (*Amazed*). In interpreting these averages, it is important to consider that a score of 1

Table 4: Item frequency statistics (Sample 1, *n* = 316)

Emotion Item	Mean	Std. Dev.	Emotion Item	Mean	Std. Dev.
Afraid	1.53	1.02	Joyful	4.23	2.31
Amazed	5.76	2.14	Light Hearted	3.37	2.11
Angry	1.21	0.50	Loving	3.75	2.35
Anxious	2.20	1.83	Miserable	1.52	1.24
Ashamed	1.37	0.86	Nervous	1.67	1.24
Astonished	4.46	2.31	Nostalgia	1.99	1.60
Benefited	5.18	2.15	Optimistic	4.83	2.08
Bored	2.15	1.64	Panicky	1.51	1.15
Calm	4.34	2.14	Peaceful	3.84	2.16
Competent	4,03	2.12	Playful	3.45	2.24
Confident	4.18	2.19	Pleased	5.04	2.05
Content	4.23	2.21	Regret	1.47	0.93

Depressed	1.39	0.91	Relieved	3.19	2.08
Disappointment	1.43	0.84	Sad	1.32	0.75
Discontent	1.70	1.23	Scared	1.46	0.96
Embarrassed	1.38	0.89	Sentimental	2.31	1.78
Encouraged	4.57	2.20	Sceptical	3.22	1.97
Entertained	4.76	2.11	Surprised	5.54	2.11
Enthusiastic	4.77	2.21	Suspicious	3.41	2.08
Frustrated	1.56	1.15	Tense	1.79	1.41
Grateful	4.24	2.31	Thankful	4.29	2.23
Guilty	1.41	0.95	Thrilled	4.00	2.32
Happy	4.78	2.14	Unexcited	2.45	1.86
Helpless	1.63	1.16	Unfulfilled	2.02	1.46
Hopeful	4.70	2.18	Unimpressed	1.96	1.48
Hostile	2.11	1.74	Uninvolved	2.74	1.86
Humiliated	1.56	1.24	Warm Hearted	3.64	2.25
In Control	3.85	2.17	Worried	1.78	1.33
Irritated	1.52	1.05			

is representative of not experiencing the emotion at all; thus an average of 1.21 suggests that there is very little experience of *Anger*, whilst the highest average of 5.76 represents an average score just over the mid-point for the experience of that emotion. Thus, as is anticipated, respondents (on average) are not experiencing these emotions in great intensity. Such a point will be discussed later, but is likely to be an externality of the self-report measure methodology in response to a stimulus. Such a methodology is unlikely to "move" respondents dramatically from an emotional perspective, thus mild to mid emotion experiences are observed.

From a standard deviation perspective, majority of the items indicated deviations of around 2. Considering the low mean scores, these figures do suggest relatively large variance observed in the scores (as supported by the large range of scores for most items, from 1 to 8 selected). For majority of emotions, it is most common that "1" is selected. This suggests firstly, that a lot of people do not experience these emotions, providing enormous support for the purpose of undertaking this factor analysis / item reduction procedure. Secondly, it demonstrates the uniqueness in emotions respondents experienced. Take for example *Grateful*, despite having a relatively large average score of 4.24, the most common score for the item is a "1". This suggests that those who did experience the emotion, did so with strong intensity, and reflects the large discrepancy that individual consumers may experience with regards to emotions. On the other end of the spectrum, *Angry* has a mode of 1, but a maximum score of 3. Such a discovery reinforces why its average (1.21), and the deviations from its mean as reflected by its very small standard deviation (0.50), are so low. As many of the items have a mode score of 1, it is interesting to understand the nuances of these emotions with regards to the absence of

intensity of emotions often experienced. Future analysis may suggest that the non-experience of an emotion item is just as integral as the experience of another, thus low scoring items may be retained in the final scale.

Perceived innovativeness:

Subjective interpretation of the level of innovativeness of the product employed in the stimulus as determined by the respondent is another important point of consideration. For such a study, it is integral that the product is deemed innovative otherwise the scale does not fit its conceptual positioning, and it may not be capturing the emotions experienced from an innovation, rather just any product. However, one perceived as too innovative may be problematic as respondents may be too influenced by the novelty or unfamiliarity of the product and overlook its attributes and purpose, and not suitably experience typical emotions. Herein, respondents are provided with the following definition about what an innovation is:

"'Innovativeness' is the measure of the degree of 'newness' of a product or service. Innovation is the creation of better or more effective products, processes, technologies or ideas that possess a sharp difference of characteristics to those prior".

Having read this definition, respondents are asked "How innovative do you consider the product shown?" indicating how innovative they perceive the product to be through options of (0) "Not innovative at all", through to (10) "Very Innovative". The idea behind this 11-point scoring is that respondents first of all establish if it is innovative, and then score that level of innovativeness out of 10. In interpreting the results, the mean innovativeness score of 9.07 (out of 11) is therefore reflective of a high level of innovativeness. It must be considered that a mean of 9.07 is equal to a level of innovativeness of 8.07 out of 10, as a score of "1" indicates not innovative, and "11" reflects an innovativeness level of 10. Thus, the product used in the stimulus is perceived as very new and novel, yet not likely too new that bias or respondent error may be incited. Herein, considering the mode of 10 (with a maximum score of 11 and minimum of 4), the subject product is confirmed as at least somewhat innovative by all respondents, further confirming its status as an innovation. Of all the respondents, 82% scored the product a level of innovativeness of at least 7 out of 10, reinforcing its high level of perceived innovativeness, and in in doing so, its appropriateness to this study.

EFA assessment of common method variance:

To assess CMV in an EFA context, *Harman's Single-Factor Test* for CMV is undertaken, where EFA is conducted forcing a single factor. If this factor accounts for more than 50% of variance in the data, then CMV is said to occur. In conducting such an assessment, the variance explained in this sample by this single-factor EFA solution is just 28.97%. Thus, it is determined CMV is not a violating factor at this stage of the research.

Sample size:

To consider a sample sufficient, the academic literature identifies a plethora of required sample size to indicator variable ratios, ranging from 4:1 (Hair et al., 1992) to 10:1 (Nunnaly, 1978; Kerlinger, 1986), and even 5:1 if sample size exceeds 300 (Kass and Tinsley, 1979). As the sample collected reflects a ratio of approximately 6:1, and the 316 respondents collected exceeds the often-recommended size of 300 (Tabachnick and Fidell, 2007; Field, 2009), the size of the sample can be considered adequate. Furthermore, as the average communalities (extracted from the diagonal elements of the *Reproduced Correlations* matrix, and shown in the *Communalities* matrix) figure of .605 exceeds .600, as recommended by MacCallum et al. (1999) and Field (2009), further support is provided for the adequacy of the factor solution based upon the level of shared variance amongst its emotion items.

Factor extraction:

In completing the EFA, five emotion factors (constructs) are obtained with Eigenvalues over Kaiser's acceptable criteria of 1 (Kaiser, 1960, Field, 2009). These factors are *Factor 1* (Eigenvalue = 8.489), *Factor 2* (Eigenvalue = 5.317), *Factor 3* (Eigenvalue = 1.836), *Factor 4* (Eigenvalue = 1.429), *Factor 5* (Eigenvalue = 1.077), which in combination explain a very acceptable 60.49% of the variance; exceeding the minimum value of 60%, reported by Field (2009). Of these five factors, 30 emotion items are conceptually aligned and retained in this stage of analyses. Given the large sample size (*n* = 316) and the convergence of Kaiser's criterion on five components, this is the number of components retained in the final analysis. As the conceptual composition of these factors is yet to be examined, at this point of the research, the factors remain unnamed and are referred to by their factor number from extraction.

The adequacy of the factor solution is examined through four procedures. Firstly, Bartlett's test of sphericity is examined, and through its statistically significant nature, provides support (x^2 (435) = 4904.748, $p < .001$) for the confirmation that the *R-matrix* is not an identity matrix and therefore the correlations between items are sufficiently large for PCA. Secondly, in observing these correlations, multicollinearity is also examined. Multicollinearity exists when two or more items are so highly correlated with each other that one variable can be predicted from the other. Such a scenario can affect the estimates of said variables, leading to inaccurate estimates in multiple regression scenarios. As the *R*-matrix exhibits that all variables correlate well with each other, without the existence of any particularly strong (i.e. equal to or greater than .850), or particularly weak (ideally .300 or less) correlations between items, the adequacy of the factor solution from a multicollinearity perspective is supported (Field, 2009). Thirdly, the Kaiser-Meyer-Olkin figure of the overall solution (KMO = .919; considered "superb" by Field, 2009) further verifies the sampling adequacy of the factor solution. The only concern arises through the factor that contains "*Suspicious*" and "*Sceptical*"; however, both these items are still above the acceptable limit of .500 (Kaiser, 1974; Field, 2009).

Model fit:

At this point of investigation, the fit of the solution is assessed through examination of the *Reproduced Correlations* matrix. Such values differ from those of the *R-Matrix* as the reproduced correlations stem from the model rather than the observed data; thus, the smaller the discrepancy between the two, the better the fit of the model (a similar principle to what will be discussed when comparing the model implied and population variance-covariance matrices in CFA). These discrepancies are determined through the number of non-redundant residuals that are greater than .05 observed between the two models, and Field (2009, p.664) states "if more than 50% are greater than .05 you probably have grounds for concern", evidently the smaller the amount; the better. In assessing such a figure, this sample produced 93 non-redundant residuals with absolute values greater than 0.05, which equated to 21.02%; an extremely tolerable number of residuals.

Factor rotation and loadings:

For oblique rotation, both the *pattern matrix* and the *structure matrix* can be enlisted for examination. As the *unique* contribution of a variable to a factor is of importance at this early stage of the research

(as opposed to the shared variance), the *pattern matrix* is employed for interpretation. Herein, the *Pattern Matrix's* factor loadings are exhibited in this section of the chapter (Table 5) due to their interpretable similarities with the *Factor Matrix* observed in orthogonal rotation (Field, 2009). Based upon this sample's size, Stevens (2002) suggests that factor loadings above .298 are considered salient, and thus will be scrutinized in this stage of the research. As a general rule of thumb, items will be removed from the EFA if they are below this figure, or have a cross-loading with a secondary (or

Table 5: Pattern matrix for PCA EFA (Sample 1, *n* = 316)

Emotion	Mean	SD	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Grateful	4.24	2.308	.879				
Happy	4.78	2.138	.844				
Thankful	4.29	2.232	.838				
Benefited	5.18	2.151	.820				
Hopeful	4.70	2.182	.797				
Enthusiastic	4.77	2.207	.752				
Encouraged	4.57	2.201	.741				
In Control	4.57	2.201	.730				
Joyful	4.77	2.207	.694				
Pleased	3.85	2.172	.684				
Amazed	4.23	2.312	.554			.309	
Astonished	5.04	2.050	.488			.392	
Surprised	5.76	2.144	.434			.353	
Miserable	4.46	2.310		.823			
Humiliated	5.54	2.105		.787			
Depressed	1.52	1.114		.779			
Embarrassed	1.56	1.244		.768			
Ashamed	1.39	.907		.749			
Sad	1.38	.888		.707			
Panicky	1.51	1.153		.638			
Sceptical	3.22	1.973			.824		
Suspicious	3.41	2.080			.798		
Unexcited	2.45	1.855				.771	
Uninvolved	2.74	1.864				.735	
Bored	2.15	1.642				.677	
Unimpressed	1.96	1.482				.588	
Anxious	2.20	1.829					.707
Unfulfilled	2.02	1.463				.455	.486
Tense	1.79	1.409		.378			.452
Nervous	1.67	1.240		.367			.380
Eigenvalue			8.489	5.317	1.836	1.429	1.077
% of variance			28.297	17.723	6.119	4.765	3.588
Cronbachs' (a)			.935	.881	.729	.706	.636
Mean (SD)			.712 (.114)	.750 (.049)	.811 (.018)	.693 (.033)	.506 (.058)

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy = .919
Bartlett's Test of Sphericity: Approx. Chi-square = 4904.748, *df* = 435, Sig = .000

more) factor that is half the size or greater of the loading on their primary factor. In observing the *Pattern Matrix,* several nuanced observations relating to the emotions factor structure appear intriguing for future research, with the five-factor solution primarily comprised of emotions more or less solely loading on a single factor (as highlighted).

Having demonstrated encouraging results so far, EFA is analyzed more closely. Moving attention away from numeric to a conceptual perspective, *Factor 1* appears to be comprised of a variety of emotions that share similarity in their positive valence. Whilst all appear somewhat related, the conceptualization of many of these emotions is slightly different. Emotions such as *Grateful* and *Thankful* appear to express that exposure to the innovation elicited a feeling of satisfaction or gratitude for what one has/is. Additionally, such emotions may imply empathy and reflection on the situation of others; thus may be multifaceted and complex, and not associated with positive affect exclusively. Herein, the experience of *Joyful*, *Pleased* and *Happy* pertain to one's feeling of being satisfied with something that has occurred, or in this case, something they have experienced from the innovation. Such emotions are likely to be strong in intensity, and related with purely positive affect. Additionally, the fact that these emotions are easy to understand and interpret from a semantic perspective no doubt also enhances their correlations with other emotions, as by nature, one would assume respondents to indicate that they did not (or to a small extent) experience an emotion if they are not able to comprehend it. Thus, the correlations amongst easily comprehendible emotions are expected to be high.

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indicate that they did not (or to a small extent) experience an emotion if they are not able to comprehend it. Thus, the correlations amongst easily comprehendible emotions are expected to be high.

Factor 2 appears to comprise of strongly negative emotions experienced from exposure to the innovation. It is unlikely that emotions such as *Miserable*, *Depressed* and *Sad* could be considered anything but negatively valenced, thus could be expected that they result in respondents having a dampened mood state, and feeling discouraged from wanting to actively pursue the innovation any further. Additionally, emotions such as *Ashamed, Embarrassed* and *Humiliated* appear strongly related to the negative perceptions of others, assumedly when respondents are imagining themselves using or purchasing the product. Such emotions could be strongly associated with the negative outcomes of social influences.

Comprising of two emotions, *Factor 3* clearly covers the conceptual ground of disbelief and cynicism. As innovations are deviations from the norm and novel in nature, often (depending on their degree of continuity) relying upon the adoption of new ways of thinking, behaving or consuming, it is highly likely that consumers experience *Scepticism* and *Suspicious* regarding things that are unfamiliar to them. Such emotions appear unique to the experience of innovations.

Factor 4 also appears to be relatively homogenous in conceptual nature, relating to a lack of enthusiasm or interest. Emotions such as *Bored*, *Unimpressed* and *Unexcited* appear to suggest that when respondents are exposed to an innovation, they experience these neutrally valenced emotions, and are not excited or impressed by what they see, thus failing to be enthused. Such emotions should be distinct from emotions such as scepticism and suspicion as they are inactive and relate to not really being impacted by what is observed as opposed to being exposed to an innovation and not believing what is suggested or claimed. Thus, these emotions reflect this neutral nature, and could be expected to impact on the experience of other emotions.

Finally, *Factor 5* is comprised of emotions such as *Anxious*, *Tense* and *Nervous* that appear to represent a sense of uneasiness experienced when exposed to the innovation. Indubitably, such a feeling is negative in valence, and may lead to active resistance of the innovation. However, such feelings may be perfectly natural when exposed to something new such as an innovative idea or product, and may have a redeeming degree of positivity in later stages of adoption, as opposed to other negatively

valenced emotions that appear to be more enduring. Furthermore, marketers may be able to devise strategies to remove this feeling of uneasiness (particularly compared to emotions such as depressed and miserable), and the negative consequences that go with it, as such emotions are likely to spawn a more temporary mood state.

Whilst the aforementioned affective factors appear to have relatively strong conceptual consistency amongst their emotion items, there are several emotions that appear slightly incongruent with their factors, or may reside purely for numerical reasons (i.e. no conceptual connection with the factor). Firstly, of these emotions, *Unfulfilled* does appear to be conceptually distinct from other *Factor 5* items, and may be a statistical artefact. However, as it is loading relatively strongly within this factor and appears conceptually similar to *Factor 4* emotions, it is retained for future scrutiny.

In light of their conceptually unique and empirically intriguing nature, several emotions are retained that, judging by recommended "cut-offs" or "criterions", may be removed with a more confirmatory mindset. In light of the exploratory nature of this stage of research, the theoretical relevance of the emotions as well as their potential for new findings in future research justifies their exemption from removal. The *Factor 1* emotions of *Amazed*, *Astonished* and *Surprised* suggest the existence of their own distinct factor amongst the broader "positive" emotion factor. At this point of the research these items are exhibiting relatively substantial cross-loadings within this factor. Additionally, these emotions also possess relatively strong cross-loadings with the emotions of *Factor 3* (i.e. scepticism and suspicion), a finding which is logical when considering the almost unexpected, unpredicted nature of the three positive emotions that could eventuate in some form of disbelief or cynicism. Additionally, the *Factor 5* emotions of *Tense* and *Nervous* are identified in that they exhibit relatively strong cross-loadings with the negative *Factor 2* emotions. When examining these emotions from a conceptual perspective, the pre-emptive, almost fearful nature of the *Panicky* emotion (the weakest of *Factor 2*) could be contributing to this moderate cross loading. Further, the general negative valence of these factors amongst the large number of items comprising *Factor 2* and employed overall in the EFA, could also be a contributing factor. However, due to their conceptually distinct nature, their relevance to the innovation acceptance context (one feeling uneasy when faced with something unfamiliar), and the relatively comprehendible semantics of the emotions, these items are retained for further research.

Scale reliability:

The internal consistency (otherwise known as the degree to which the items that comprise a measure are inter-correlated) of the factor solution is examined through the empirical criterion of Cronbachs' alpha. Whilst Churchill (1979) condones circumventing scale reliability in the early stages of exploratory analysis, Grayson (2004), and Cortina (1993) acknowledge that whilst adequate for assessing reliability Cronbachs' alpha is not a suitable measure of unidimensionality (hence inter-item correlations are examined), nonetheless, the criterion will be employed to assess the internal consistency of the factors derived. Cronbachs' alpha estimates are used to examine the systematic variance of a measure based on the correlations amongst the empirical indicators that comprise it. Employing such a criterion, the reliability of each of factor is examined and displayed in Table 5. Each factor, with the exception of *Factor 5* (α = .636), has a Cronbachs' alpha figure above Kline (1998), and Nunnaly's (1978) acceptable limit of .700 (*Factor 1* = .935, *Factor 2* = .881, *Factor 3* = .729, *Factor 4* = .706) indicating that each can be considered possessive of strong scale reliability. Further supporting such internal consistency, deleting any individual item (emotion) for any of the factors would not significantly improve the reliability of that factor; this indicates that all the items are positively contributing to the overall reliability of their factors. Finally, the corrected item-correlation score is examined to highlight the correlations between each item and the total score for the factor, and as none of the factors had items with correlations below .300 (Field, 2009), we can safely conclude that all the individual emotions correlate well with the overall emotion factor.

Unidimensionality:

In addressing unidimensionality, the inter-item correlation of factors is recognized by Clark and Watson (1995) as a straightforward and useful index of internal consistency. As indicated in Table 5, the mean value of these figures are quite large (ranging from .506 - .811) for each of the factors. Such a finding is a little concerning, as both the aforementioned authors, and Briggs and Cheek (1986) suggest a range of .40 - .50 is adequate for narrow constructs. However, as the emotion factors this research is exploring are likely to be quite narrow from a conceptual perspective and the fact that the items are single-worded, it is to be expected that the inter-item correlations will be large, and unidimensionality very strong. In light of this, unidimensionality can be regarded as too strong when very high inter-item correlations (>. 850) suggest multicollinearity, indicating the breadth of the construct is too narrow in its conceptualization, and the items may be essentially measuring the same thing. At this stage of assessment, the unidimensionality of these factors do not fall into the "too strong" category. Further assessing unidimensionality, Clark and Watson (1995) advise, that inter-item

correlations should be moderate in magnitude and cluster closely around the mean. As demonstrated in Table 5, whilst being large in magnitude, each of the factors (with the exception of *Factor 1* - Mean = .712, SD = .114), reveal relatively small standard deviation values (*Factor 2*: Mean = .750, SD = .049, *Factor 3*: Mean = .811, SD = .018, *Factor 4*: Mean = .693, SD = .033, *Factor 5*: Mean = .506, SD = .058), suggesting they do cluster closely around the mean. This is encouraging as it suggested the factors are demonstrative of strong unidimensionality. With regards to *Factor 1*, the observed unidimensionality is not as strong, with a range of large and small inter-item correlations culminating in a sizeable standard deviation of (.114). Such a finding may provide evidence for the existence of two factors?

Factor correlations:

The *Component Correlation Matrix* (Table 6) is interpreted to evaluate the correlations between factors. As observed in this matrix, *Factor 3* shares little relationship with any other factors (suggested by the *structure matrix)* as exhibited through its low correlation coefficients. This is perhaps due to the nature of the emotions expressing disbelief or cynicism, and the likelihood that

Table 6: Component Correlation Matrix (Sample 1, *n* = 316)

Factor	1	2	3	4	5
1	1.000				
2	.193	1.000			
3	.162	.057	1.000		
4	-.237	.306	.032	1.000	
5	.215	.254	.147	-.019	1.000

such emotions do not necessarily reflect a really strong positive or negative valence. However, all other factors do have some degree of dependency with at least one other factor. As is expected from a conceptual perspective, the emotions of *Factor 1* and *Factor 4* are inversely related. This is indubitably due to the concept that *Factor 1* is expressing a range of positive, grateful and fairly strong emotions, whilst *Factor 4* appears to be expressing emotions of a lack of interest, or strong disinterest, and thus likely to not be strong positive emotions. On a similar conceptual footing, the observed positive relations (in direction, not valence) can also be examined, where the negatively valenced *Factor 2* is positively related with both *Factor 4* and *Factor 5*. This may be due to the assumption that the former expresses the aforementioned lack of positive affect, and the latter has a fairly strong negative valence,

thus the experience of *Factor 2* emotions may also occur at the same time as the experience of *Factor 4* and *Factor 5* emotions.

If the factors comprising the scale are independent of each other (and therefore orthogonal rotation should be employed), then it will be observed that oblique and orthogonal rotation would exhibit comparable results, which would resemble uncorrelated factors. This would result in the above matrix appearing as an *identity matrix* where factor correlations are essentially zero. As this is not the case, and the majority of the relationships are definitively non-zero and behaving in accordance with what is expected when assessing the conceptual overlap of the factors, further support is provided for the use of oblique factor rotation as opposed to orthogonal.

Points of empirical attention:

This phase of the scale development procedure culminated in the clustering of five emotion factors, however further examination must be undertaken to accept the composition and contents of this scale as an appropriate measure of consumer's affective evaluations of innovations. It is evident from the EFA undertaken so far, that not all emotion scales are sufficiently generalizable to this research context. This is demonstrated through the finding that of the 30 emotions retained through this preliminary EFA process, only 20 of these emotions are from either the HCE or CES (of which a large proportion of initial pool items are comprised). Furthermore, both *Factor 3* and *Factor 4* are entirely comprised of emotions that do not appear in the HCE or CES. Thus, the empirical distinction between this scale and that of the two aforementioned is both immense and pertinent. Due to the new perspectives offered by this factor solution, the widely adopted CES (Richins, 1997) and HCE (Laros and Steenkamp, 2005) scales are not deemed appropriate for use verbatim, or in any way close to their initial forms; a position supported by the composition of the initial emotions retained through the EFA process. In light of this, the unique factor solution that is developed thus far will be exposed to further empirical scrutiny from a new and independent data set.

Re-administering the research instrument (Sample 2):

Whilst the results from the previous sample are considered very insightful, DeVellis (2012, p.158) suggests that, "replicating a factor analytic solution on a separate sample may be the best means of demonstrating its generalizability". In light of this, and in consideration of maximizing both validity

and generalizability, the findings of the initial EFA are further scrutinized through a second independent sample of 257 respondents. This sample is retained from an initial collection of 299, where respondents are exposed identically to the previous sample; with the same stimuli employed (the *Electrolux Ribbon*), whilst completing the instrument in their own time through online facilitation. Those respondents removed from the study are again done so due to unintelligible responses, or if they are determined through a series of manipulation checks, to have not responded to the instrument correctly. Furthermore, identical contingencies are made for common method variance as the extensive contingencies employed in the first sample. By keeping this methodological side of the scale development consistent across the two studies, particularly with relation to the stimuli employed, the results of this second sample can be used to compare and substantiate any discoveries made in the first sample.

Sample characteristics:

This secondary sample is collected in a manner similar to the first, and thus respondent demographics are expected to be comparable. As mentioned above, 299 respondents are collected, with 257 retained for this study. Of this sample (the characteristics of which can be observed in Table 3), 35.02% of respondents are men, with 64.98% women. With respect to the age of the sample, they are again young, with 90.83 % of those who indicated their age, 24 years or under. Yet again the majority of the sample are Australian (33.46%), Malaysian (17.51%), or Mauritian (8.95%). Assessing the important demographic of annual income level, 64.59% earn \$30 000 or less annually, which is again likely to be an externality of the large number of students (91.05%) comprising the sample. In light of the figures presented above, the socio-demographic characteristics of respondents collected in Sample 2 are considered comparable to Sample 1 (and those expected to be collected in later stages of this study), and are considered appropriate for this research.

Item characteristics:

Of the 57 emotion items again examined in this sample, the frequency statistics can be observed below. As exhibited in Table 7, a wide range of average intensities is again experienced by respondents stretching from 1.48 (*Scared)* to 4.00 (*Entertained*). However in this sample, the overall item scores are much lower. Considering the mid-point of the scale (if that emotion is experienced at all) is "4", this suggests that overall the affect experienced is with relatively low intensity. This is however in line

with what is expected, as respondents are simply exposed to an industry-standard product stimulus. Thus the affect experienced is not as strong as what could be expected from a major lifetime achievement or family tragedy. Furthermore, these mean results suggest that perhaps the previous sample's scores are quite high. In assessing the item's standard deviations, these scores are yet again quite high (around 2.0) relative to their means, suggesting large deviations away from these mean scores and a variety of scores across individual respondents.

Table 7: Item frequency statistics (Sample 2, $n = 257$)

Emotion Item	Mean	Std. Dev.	Median	Mode	Minimum
Afraid	1.51	1.16	Joyful	3.07	2.06
Amazed	3.23	2.03	Light Hearted	2.58	1.88
Angry	1.69	1.57	Loving	2.35	1.85
Anxious	1.99	1.54	Miserable	1.88	1.61
Ashamed	1.82	1.49	Nervous	1.68	1.40
Astonished	2.73	1.92	Nostalgia	1.87	1.50
Benefited	3.71	2.23	Optimistic	3.37	2.10
Bored	2.97	2.30	Panicky	1.59	1.27
Calm	3.23	2.10	Peaceful	2.41	1.72
Competent	2.82	1.95	Playful	3.03	2.10
Confident	2.92	2.07	Pleased	3.32	2.12
Content	3.17	2.04	Regret	1.70	1.40
Depressed	1.65	1.37	Relieved	2.61	1.88
Disappointed	2.59	2.04	Sad	1.53	1.24
Discontent	2.28	1.86	Scared	1.48	1.17
Embarrassed	1.82	1.57	Sentimental	1.84	1.37
Encouraged	2.95	2.06	Sceptical	2.99	2.04
Entertained	4.00	2.2	Surprised	3.55	2.15
Enthusiastic	3.09	1.85	Suspicious	2.43	1.80
Frustrated	2.49	1.96	Tense	1.84	1.47
Grateful	3.08	2.06	Thankful	3.14	2.17
Guilty	1.40	1.02	Thrilled	2.47	1.81
Happy	3.49	2.15	Unexcited	3.19	2.25
Helpless	2.09	1.79	Unfulfilled	2.53	2.04
Hopeful	3.08	2.09	Unimpressed	3.02	2.16
Hostile	1.80	1.39	Uninvolved	2.80	1.99
Humiliated	1.66	1.33	Warm Hearted	2.63	1.93
In Control	2.89	1.96	Worried	1.67	1.20
Irritated	2.56	2.10			

The mode and range scores again help clarify the scores observed, although, again in this sample, the most common score for all emotion items is a "1". This further reinforces that each emotion is not experienced at all by many respondents, highlighting the conceptual range of the scale, and the

favourable decision of respondents to indicate they have not experienced an emotion when they have in fact not experienced it. However, the high number of non-intensities experienced is again expected to be a result of the large number of items examined, and further suggests the need for refinement. What such an observation does definitively suggest though, is that for those emotions with higher mean scores (i.e. *Happy*, *Surprised,* or *Calm*) those who experienced it did so in a relatively strong intensity, and those who didn't, did not at all. For the nature of this scale, this can be a positive result, as the correlations between items are likely to be more pronounced in such occurrences. Interestingly, in this sample, the range of scores for every emotion is identical, ranging from $1 - 8$. Therefore, those items with modes of "1" but medians of "3" suggest that whilst "1" is the most common score (i.e. *Benefited*, *Amazed*, *Content)* there is a large number of scores indicated that are higher than "3" and approaching the mid-point. Not surprisingly, these items are those that have higher means.

Perceived innovativeness:

In interpreting Sample 2's interpretation of the perceived level of innovativeness, it is discovered that the mean score (6.12) is much lower than Sample 1's (9.07). Despite employing an identical stimuli, definition, and question, this finding reinforces the overall lower scoring of respondents in Sample 2. In light of this, the mean score is still indicative of a level of innovativeness above 5 out of 10, and does still position the product as innovative, as reinforced by the most common score of "7"; yet this time around only a third of the sample perceived the product to be a 7 out of 10 or more in its level of innovativeness. In light of these results, the product employed in the Sample 2 is considered an appropriate example of an innovation for this study.

Exploratory factor analysis (Sample 2):

Methodology:

As a result of the large number of items employed in the initial affective scale and in an attempt to enhance the rigour of the measure, this sample is also exposed to EFA. This secondary round of analysis contains the same 57 emotions from the previous stage of the study, revealing some reassuring results. Whilst this stage of the research does undertake the perhaps unorthodox approach of conducting a secondary EFA, this is done so in the name of transparency, to substantiate a similar factor structure to the previous sample. In doing so, this study is not undermining the importance of confirmatory factor analysis (CFA); rather its purpose is to confirm (through another EFA prior to CFA) that a comparable measurement model is explicated in this new and independent sample. Such a stage is deemed a necessary pre-cursor to CFA, as it is neither responsible nor reasonable to just assume that the first sample collected will always provide the best representation of the data. EFA is by its nature exploratory, thus one sample alone cannot provide conclusive results, and initial samples could suffer from any number of issues rendering it inappropriate for the research study. Furthermore, proceeding with a CFA when the initial factor structure is not comparable could lead to misleading results and model misspecification; hence the following results of the secondary EFA are interpreted.

EFA assessment of common method variance:

Comparably to the initial sample, assessment of CMV in this second sample (in an EFA context) is undertaken through *Harman's Single-Factor Test*, where EFA is conducted forcing a single factor. If this factor accounts for more than 50% of variance in the data, then CMV is said to occur. In conducting such an assessment, the variance explained in this sample by the single-factor EFA solution is just 26.94%. Thus, it is determined CMV is not a violating factor at this stage of the research.

Results:

Sample size:

Applying the same sample size conditions as the previous sample, the sample of 257 usable respondents across 57 emotion items sits just under the 5:1 ratio. Such is acceptable. However, equally

as pertinent to this argument is the size of communalities (extracted from the diagonal elements of the *Reproduced Correlations* matrix, and shown in the *Communalities* matrix), thus the average communalities size of .653 indicates a sufficient level of shared variance exists to suggest the sample size collected is adequate. Furthermore, as this figure exceeds the .600 criterion as recommended by MacCallum et al. (1999), further support is provided for the adequacy of the factor solution.

Factor extraction:

Contrasting to the five factors extracted in the previous sample, the inter-item correlations of *Factor 1* in the previous sample suggested the factor could in fact be comprised of two factors. The suggestion of six factors in this secondary sample is supported by the existence of six factors with Eigenvalues over 1. The total variance explained by these six factors is a pleasing 64.58%, providing further indication that the factor structure extracted is of strong psychometric validity.

Adequacy of factor solution:

In following a similar procedure to the previous EFA, the adequacy of the factor solution is again examined through four procedures. Initially, Bartlett's Test of Sphericity is examined, with the statistically significant measure (x^2 (435) = 4220.548, $p < .001$) confirming the *R-matrix* is not an identity matrix, and therefore the correlations between items are sufficiently large enough for Principal Component Analysis. Secondly, the correlations between items of this second sample, with particular attention paid to multicollinearity, are further scrutinized. In doing so, analysis is undertaken of the *R-matrix* to ensure the correlations between individual items are not so low that they are completely unrelated, or so high that they are essentially measures of each other. Whilst too large to publish within this chapter, such scrutiny shows that there is an adequate amount of correlations that are not too large (>. 900), or too diminutive (< .300). Thirdly, the Kaiser-Meyer – Olkin figure is examined (KMO = .901), and again due to its large size (well and truly exceeding the "good" size of .700), verifies the sampling adequacy for analysis. Finally, all individual KMO values for the individual items are above .790, with the vast majority above .900, deeming them very adequate.

Model fit:

The fit of the solution is examined through the *Reproduced Correlations Matrix*. This matrix identifies all the correlations between items, based on the factor model, and are used to determine the discrepancy

(residuals) between the model implied correlations, and that observed in the data. These discrepancies are determined through the non-redundant residuals between the two models that are greater than .05 (Field, 2009), and as this sample produced just 84 (or 19%) non-redundant residuals with absolute values greater than .05 (Field, 2009 identifies 50% as cause for concern), the fit of the model is considered very good.

Factor rotation and loadings:

The 57 emotions are examined in accordance with the procedure outlined by Danelon and Salay (2012), following the same procedure as the first EFA conducted, namely *direct oblimin* oblique factor rotation. Encouragingly, analysis of this pool of emotions resulted in the extraction of the same 30 emotions as the previous EFA; however, this time (as indicated by the *Pattern Matrix*; Table 8) the emotions clustered into 6 basic emotion factors. Whilst the previous factors extracted are not named due to their empirical infancy, due to the similar composition in this EFA, it is believed that adequate support is evident to confirm the early content validity of the constructs, thus allowing the naming of these factors. In light of these emotion item's conceptual compositions (see Table 8), it is suggested that in this EFA, factor 1 is entitled *Joy*, factor 2 *Melancholy*, factor 3 represents *Apathy*, factor 4 *Trepidation*, factor 5 labeled *Wonder,* and factor 6 entitled *Cynicism*. It must be noted however; these are merely entitlements purely for descriptive and distinguishing purposes proposed to represent the nature of affect grouped together.

As anticipated after the first EFA, the emotions *Amazed*, *Astonished*, and *Surprised* did all congregate on their own factor, this is named *Wonder*. This is an interesting discovery, as it seems that there is more conceptual overlap shared between these three emotions than there is between the (now entitled) *Joy* emotions of which the emotions belonged to in the first EFA. The *Joy* emotions also become a little less confused from a conceptual perspective, as a result. Despite the emergence of this new factor, *Amazed* is still experiencing a strong cross loading (.439) with the *Joy* factor, to a degree that would usually dictate its removal from a purely statistical perspective. Such is the exploratory nature of such analysis, further refinement of these factors, particularly the sizable *Joy* factor, could result in *Amazed* exhibiting a much stronger loading on it's own factor and weaker on others. Thus, the composition of this factor deserves further academic attention, and will remain as is for now.

Table 8: Pattern Matrix for PCA EFA (Sample 2, *n* = 257)

Emotion	Mean	SD	Joy	Melan.	Apathy	Trepid.	Wonder	Cynic.
Thankful	3.14	2.171	.811					
Grateful	3.08	2,065	.807					
In Control	2.89	1,963	.785					
Hopeful	3.08	2.095	.781					
Benefited	3.71	2.230	.766					
Encouraged	2.95	2.065	.753					
Happy	3.49	2.145	.747					
Pleased	3.32	2.117	.714					
Enthusiastic	3.09	1.846	.696					
Joyful	3.07	2.058	.582					
Humiliated	1.66	1.328		.830				
Ashamed	1.82	1.487		.821				
Embarrassed	1.82	1.572		.796				
Miserable	1.88	1.611		.694				
Sad	1.53	1.244		.661				
Depressed	1.65	1.367		.592				
Uninvolved	2.80	1.994			.850			
Unexcited	3.19	2.250			.730			
Unfulfilled	2.53	2.043			.586			
Unimpressed	3.02	2.155			.585			
Bored	2.97	2.301			.540			
Tense	1.84	1.466				.832		
Panicky	1.59	1.266				.828		
Nervous	1.68	1.403				.716		
Anxious	1.99	1.540				.679		
Astonished	2.73	1.923					-.818	
Surprised	3.55	2.152					-.666	
Amazed	3.23	2.028					-.444	
Suspicious	2.43	1.797						-.855
Sceptical	2.99	2.040						-.662
Eigenvalue	8.083	5.820		2.018	1.488	1.110	1.072	
% of variance	26.943	19.399		6.278	4.959	3.701	3.574	
Cronbachs' (a)	.928	.876		.826	.793	.728	.600	
Mean	.744	.732		.658	.764	-.643	-.759	

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy = .901
Bartlett's Test of Sphericity: Approx. Chi-square = 4220.540, *df* = 435, Sig = .000

In this secondary EFA, the *Joy* factor is still comprised of all the emotions (with the exception of the three that formed the *Wonder* factor) that are in the first EFA. Whilst the ranked order of factor loadings is slightly different, this provides evidence for the empirical and conceptual strength of this factor. As mentioned above, this factor is too cumbersome, and it is expected that further analysis (such as CFA) will reduce the total number of items in the factor to a more parsimonious figure.

Both the *Melancholy* and *Apathy* factors are revealed similarly to the initial EFA; each factor differing in only one emotion from the first sample. Through the removal of *Panicky* from the *Melancholy* factor, and the inclusion of *Unfulfilled* in the *Apathy* factor, it appears on face value that both factors are improved regarding their conceptualization of a single, distinct basic emotion in the second EFA. The absence of any significant cross-loadings supports such an assertion, indicating that perhaps the loading of these items in their initial factors from the previous EFA is spurious at best. Furthermore, the residence of which these emotions now occupy is more sensible from a conceptual perspective in this new EFA.

Such conceptual consistency is also observed in the *Trepidation* factor. The relocation of *Panicky* to the *Trepidation* factor appears to make sense from both a face value and theoretical perspective as many similarities can be seen between this emotion and the uneasiness or worry that underlines the other emotions of the factor. Perhaps the strong loading of *Panicky* changed the empirical structure of the *Trepidation* factor such that *Unfulfilled* no longer fits within that factor and now exhibits stronger correlations with the *Apathy* emotions of which it appears to have more in common with from a conceptual perspective?

As is expected, *Sceptical* and *Suspicious* remain as their own two-item factor, *Cynicism*. Again, no other emotions have joined these two and the factor remains comprised of just the two items. The composition of the factor solution presents a very clean, yet distinct cluster of basic emotion factors that appear on face value, to possess strong theoretical consistency. As is also presented in Table 8, each factor satisfies the criteria of Eigenvalue's above 1, whilst providing a sufficient contribution to the explanation of variance in the data, culminating in 65.30% of total variance explained. It should be noted that from a content validity perspective, the emotions retained at this point of the research are less complex, less subjective emotions that are semantically more versatile than some of the others (i.e. *Romantic*, *Nostalgic* or *Discontented*) from the initial pool. Thus, respondents from a variety of contexts and lifestyle are likely to be familiar with such emotions, creating a more user-friendly scale. This is an integral criterion with regards to the applicability of the scale and will help reduce common method variance amongst a diversity of respondents in future application.

Scale reliability:

Cronbachs' alpha is again used to examine the internal consistency of the scale based on the correlations amongst the empirical indicators in this EFA sample. As indicated in Table 8, the internal consistency of these factors are yet again considered strong, with scores ranging from .728 to .928 (*Joy* = .928, *Melancholy* = .876, *Apathy* = .826, *Trepidation* = .793, *Wonder* = .728), with the exception of the *Cynicism* factor. Indubitably a product of its two-item composition, the reliability of this factor is again low (a = .600); however, its reliability still meets the less stringent criteria's of Nunnally (1967) and Van de Venn and Ferry (1980). Overall, deleting an item (emotion) for any of the factors would not significantly improve the reliability of the factor, indicating that all the items are contributing to the overall reliability of their factors. Furthermore, none of the factors had items with corrected-item correlation scores below .300 (Field, 2009), and in meeting all these standards, we can comprehensively conclude the emotion items and factors in this sample demonstrate strong internal consistency.

Unidimensionality:

To address the unidimensionality of this sample, the inter-item correlations of these factors (see Table 8) are again examined in accordance with the procedures set out by Clark and Watson (1995). Again, the emotion factors employed in this research are likely to be quite narrow from a conceptual perspective and as the items are single-worded, it is to be expected that the inter-item correlations will be large, and unidimensionality very strong. Such a proposition is supported (*Joy*: Mean = .744, SD = .057, *Melancholy*: Mean = .732, SD = .047, *Apathy*: Mean = .658, SD = .053, *Trepidation*: Mean = .764, SD = .032, *Wonder*: Mean = -.643, SD = .077, *Cynicism*: Mean = -.759, SD = .136), with the figures again pointing to the conceptual narrowness of the constructs, with the average inter-item correlations outside of Briggs and Cheek (1986), and Clark and Watson's (1995) range of .40 - .50 for narrow constructs. However, the inter-item correlations observed, whilst a little large in magnitude, do cluster closely around the mean, as indicated by their relatively small standard deviations, suggesting they are closely related and further supporting their unidimensionality. Additionally, the existence of a sixth factor supports the proposition from the assessment of unidimensionality of the previous sample, that *Factor 1* is in fact not one dimension alone. The strong unidimensionality of the two factors *Joy* and *Wonder* supports such an assertion.

Factor correlations:

To gain further insight to how the factors interact, the *Component Correlation* matrix (see Table 9) is dissected to examine the between-factor correlations. Firstly, the independence of the clusters of emotions is again disproven, supporting the employment of oblique rotation over orthogonal. As indicated by the correlations (between factors), the majority of the relationships behave in accordance with what is expected from a theoretical perspective and what is observed in the previous EFA. However, some interesting relationships exist.

Table 9: Component Correlation Matrix (Sample 2, *n* = 257)

Factor	Joy	Melancholy	Apathy	Trepidation	Wonder	Cynicism
Joy	1.000					
Melancholy	-.096	1.000				
Apathy	-.235	.272	1.000			
Trepidation	.039	.359	.068	1.000		
Wonder	-.381	-.006	.145	-.132	1.000	
Cynicism	.010	-.348	-.202	-.194	-.005	1.000

Firstly, *Wonder* is demonstrating an inverse correlation with *Joy*. This is an unexpected finding considering the positive valence of the factors. Perhaps this has occurred as the innovation is performing in a way respondents are not expecting (hence the experience of *Astonishment*, *Surprise* etc.) and they have experienced some disbelief. However, as the factor does not have a strong correlation with *Cynicism* this cannot be confidently concluded. Perhaps another alternative is the fact that the degree of positive affect experienced by a respondent in response to the research stimulus is limited in the amount and intensity with which it can elicit such affect. Thus in such a scenario, as respondents feel some positive affect they are less likely to experience other positive emotions. In such a scenario, respondents may feel that *Joy* emotions are substituting *Wonder* emotions, and vice-versa. Considering the nature of empirical research and self-administered questionnaires, particularly the complex nature of affect, and the observation that such emotions are not indicated in strong intensity through a questionnaire stimulus design, it is highly plausible that this is the case.

As is to be expected, the *Melancholy* and *Trepidation* factors have shown a relatively strong positive correlation, yet interestingly, the *Cynicism* factor is observed to correlate inversely with *Melancholy*. Whilst not conceptually incongruent, one could be forgiven for thinking that the two would exhibit a positive relationship. Such a discovery may indicate that perhaps the suspicions and scepticism of respondents are not as negatively valenced as first expected, at least to the extent of not experiencing

162

melancholic affect. Perhaps the novelty of the innovation is preventing these melancholy emotions to be experienced when respondents are cynical? Additionally, emotions of *Melancholy* are quite strong in intensity, so perhaps the negative component of *Scepticism* is not strong enough to make someone feel such melancholic emotions. This is perhaps observed in the data, where the strongest inverse relationship between *Cynicism* and negative emotion factors is observed through *Melancholy*. In light of this and the aforementioned findings, further empirical examination should be undertaken.

Scale comparison:

The decision to undertake a second round of EFA on the secondary sample is justified through not only the empirical support for the findings of the first sample, but most saliently through the discovery of six basic emotion factors in this secondary sample. Whilst this is hinted at in the first sample, this new and independent sample supported the existence of this additional factor (birthed through the division of the positive emotion *Factor 1* from Sample 1, into *Joy* and *Wonder*). Had this discovery not been made, the CFA stage to next be undertaken, may be ill-informed in its pursuit of a five-factor solution, and substantial misspecification may occur.

It is evidenced from this second EFA undertaken, that firstly, the scale's factor composition has held consistent across two samples, providing strong evidence for its factorial composition and the relationships shared between indicators. Secondly, the CES and HCE scales have again only contributed 20 emotions to the scale in its current composition, proving the scales in their entirety, are incompetent at capturing consumer's affective evaluations of an innovation, and thus justifying the development of this new scale. This prerogative is supported by the similarity of findings across the two EFAs that again have rejected the efficacy of many of the alternative scales items, retaining just 20 items from these two scales. In light of the current composition of the scale, it is suggested that as an applicable measure, the scale is still too cumbersome; thus further refinement is suggested.

Items not retained:

Of the emotions employed in the initial pool of items that are not retained, *Angry*, *Frustrated*, and *Irritated* seemed three emotions that from a face-value perspective would be empirically related to the research context of consumer innovation adoption. One could be assumed that when a product is considered to be difficult to interact with, too complex in its operation, or would require considerable

learning or effort to switch to using it, a consumer is likely to become frustrated, angry or irritated. Whilst this is a direct feeling one may experience when interacting with the product, one is *not* likely to become frustrated (for example) *without* experiencing consistent failure or difficulty in interacting with an innovation. Herein, such an experience is not something pre-adoption exposure to a product stimulus (such as in this research design) is capable of eliciting, and as a result, respondents may have not felt such affect. Thus, and as exhibited by the findings so far, the more likely negative emotions influencing consumers in a pre-adoption scenario may be related to apathetic emotions such as boredom or a lack of excitement as they perceive the product to be inoperable or irrelevant to them, or even a sense of tenseness or nervousness. In light of the identification that emotions such as anger, frustrated or irritated may not be experienced in this research context, these emotions may eventuate indirectly in the cognitive appraisals of the products complexity, or ability to proficiently operate or use the innovation.

Points of empirical attention:

Having undertaken rigorous initial, and corroborative factor analysis of the 57 emotion-items sourced, the scale is now refined to a conceptually clearer and empirically more applicable 30-item, six-factor solution. Encouragingly, the content of this scale appears to successfully dimensionalize the unique affect experienced by consumers when exposed to an innovation. The findings related to both positive and negative affect, as well as affect related to *Apathy* and *Cynicism* are particularly intriguing, and appear as substantial contributions to the innovation adoption literature.

Importantly, this scale is bi-valenced. With regards to the context of research being pre-adoption of innovations, this is integral, as consumers default behaviour is non-adoption as the innovation is something they have not purchased before. Having a bi-valenced measure allows the scale to be employed in a manner that can equate to rejection (influenced more strongly by negative affect) or acceptance (influenced more strongly by positive affect). Because of this, the absence of affect experienced may be just as salient as that that is experienced. For example, one can anticipate the behavioural intention of purchase would be influenced by strong experience of positive affect and weak experience of negative affect. A single-valenced scale would not be operable in the innovation adoption arena, as it would not be able to explain respondent's complex behavioural change from non-adoption (as they are not yet familiar with innovation) to intended adoption. Whilst a positive (only)

scale could be used to predict acceptance, one cannot assume that low positive scoring can explain rejection; for this a negative-valenced measure is necessary.

At this point of assessment, the scale developed thus far is considered too large, and empirical aspects of it, namely the impacts of error in measurement, specification of the solution and its validity, must be scrutinized to further refine it. In recognizing this, confirmatory factor analysis must be undertaken, and a new and independent sample is collected to assess the efficacy of the scale with a new innovation (enhancing its generalizability). These essential steps are now conducted.

Step 4a. Scale confirmation (Sample 2)

Confirmatory factor analysis:

Methodology:

As the preliminary structure of the scale is initially cleansed through the EFA conducted on two independently collected samples, confirmatory factor analysis is employed to firstly refine the scale to a stronger more parsimonious composition, and secondly, ascertain the unidimensionality, reliability and validity of the scale. As the EFA conducted on the second data set corroborated the composition of the basic emotion factors found in the first EFA, it is used to administer confirmatory factor analysis (CFA) on this second data set. Had the findings been dissimilar between the two EFAs already conducted, a new and independent sample would need to be collected before the CFA could be employed.

Confirmatory factor analysis is a type of structural equation modeling (SEM) that examines measurement models (solutions), i.e. the empirical relationship between observed indicators variables and unobserved latent factors. In the development of this consumer affect scale, CFA is deemed necessary because of the uniqueness of the research context, specifically the innovative nature of the products in question, and the methodology in which it is measured. Thus, CFA of the six-factor, 30-item measurement model will be undertaken via maximum likelihood SEM, employing the statistical analysis software AMOS (version 19).

The distinction between CFA and its exploratory cousin (EFA) is that CFA is hypothesis-driven by nature and relies upon the factor structure being specified a priori (Brown, 2006). The purpose of undertaking CFA in this research is to verify the number of underlying dimensions, and the pattern of item-factor relations of the scale. Thus, in light of the findings of the previous stages of analysis, it is expected that range of individual emotions examined will cluster together into the positively valenced *Joy* and *Wonder*, and the negatively valenced *Melancholy*, *Apathy, Trepidation* and *Cynicism.* The first round of CFA is undertaken on Sample 2 to further empirically refine the 30-item measure ascertained from the EFA stages. CFA of a new and independent third sample is employed to confirm the factor structure of the scale so it can be approved for use in the main study of this research, and that of others. Through examination of the scales construct (including convergent and discriminant)

and predictive validity, particular attention is again drawn to the methodological subtleties of the study, ensuring the scale can be considered as valid, generalizable, and parsimonious as possible. Additionally, so to not fatigue respondents or create any additional systematic error, these stages of analysis will examine only the initial items determined relevant through the first two rounds of exploratory factor analysis. Those items that are omitted from the initial measurement model at this stage will remain omitted for further stages of the scale development process.

Expected distribution of items:

Considering the nature of the research design, the fact that the stimuli being used are new and unfamiliar innovative products, and the continuum measurement scale, it is anticipated the intense experience of affect is unlikely to be captured. Thus, particularly high scores (i.e. above 6) are not anticipated, rather it is expected that a large number of 0 scores (indicating a respondent did not experience that emotion at all) will be indicated. Thus, the distribution of scores across the continuum of this scale is likely to be non-normally distributed, in that it will *not* be symmetrically distributed around the mean. Furthermore, as each consumer responds subjectively to, and is connected with their affect very differently, it is highly likely that respondents will experience the affect items in a variety of intensities, further supporting the likelihood of non-normally distributed data.

When exploring the relationship between affect and consumer's attitudes and innovation acceptance behaviour, the influence may be just as strong in the absence of an emotion as it is for the experience of an emotion in strong intensity. For example, a respondent may develop just as strong a positive attitude towards an innovation when they do not experience *Apathy* emotions such as boredom or un-excitement, as when they do experience *Joy* emotions like happiness. Furthermore, the absence of these *Joy* emotions could accommodate a strong negative impact on consumer's attitudes, just as the experience of *Melancholy* emotions such as depression or sadness may. In light of this position and the aforementioned anticipated data distribution, it is preferred that variety of emotion intensities captured by this scale is wide and sundry, thus the non-normal distribution of the data is a likely externality.

Bootstrapping:

As the sample data this CFA is based upon is likely to be non-normally distributed (due to the continuum style of the scale), bootstrapping re-sampling is used to account for said distribution. Bootstrapping is a re-sampling procedure in which multiple samples (the number pre-determined by the researcher) are randomly drawn from the original sample (which acts as the sample population), with cases replaced to generate other data sets. As (in theory) the best representation we have of a population is our sample, the process of recalculating multiple samples from this initial sample (treating it as the population) produces distributions very similar to repeated sampling from the population; hence non-normality of distribution is remedied. This from of pseudo-population sampling is known as *non-parametric bootstrapping,* and Byrne, 2001 (p. 270) suggests that bootstrapping allows researchers to "assess the stability of parameter estimates and thereby report their values with a greater degree of accuracy", countering the effects of non-normality, thus empowering the study to achieve more accurate assessments of parameter estimates. Furthermore, Nevitt and Hancock (2001) even advise that for sample sizes greater than 200, bootstrap estimates are less biased than standard maximum likelihood estimation in the face of non-normality. Evidently, the findings in this study (where possible) are estimated through bootstrapping adjustments so to facilitate a greater degree of accuracy. In estimating through bootstrapping, Arbuckle and Wothke's (1999) identification condition that one factor loading per factor is constrained to a non-zero value is adhered to. Herein, the figures discussed in the proceeding *Results* section are bootstrap-adjusted (unless otherwise indicated).

Model re-specification:

In order to determine the most appropriate factor solution, beyond traditional significance testing and estimation of regression weights, SMCs, etc., model re-specification is undertaken through assessment of modification indices and the standardized residual covariance matrix. In this research, modification indices will be consulted in the covarying of any error terms, with only those represented by modification indices above 3.84 considered for removal in the event of very strong theoretical support to do so. Examination of the standardized residual covariance matrix will identify any particularly salient areas of localized strain in the factor solution. As this matrix exhibits the discrepancies between the sample variance-covariance matrix and the model implied variance-covariance matrix, such figures are indicative of the sample poorly recreating what is suggested by the model, thus variables with multiple values greater than ±1.96 (a 95% chance of rejecting the null hypothesis that the two figures are the same), and those greater than ±2.58 (a 99.9% chance of rejecting the null hypothesis that the two figures are the same) will be further scrutinized, and if indicated as problematic, will be removed.

Model Fit:

In examining a variety of alternative measurement model solutions, the "best fitting" one is determined in accordance with previous emotions and innovations literature, construct and predictive validity, and importantly, criterions of model fit. Model fit examines to what degree the model that best represents the data reflects the underlying theory (Hooper, Coughlin, and Mullen, 2008), hence, it is the objective of CFA to examine and compare various alternative measurement models in an attempt to discover the most appropriate model. Many "rule of thumb" recommendations exist (see Hu and Bentler, 1999; Brown, 2006) for the minimum cut-off values of model fit indices to be accepted as a satisfactory fit. Those employed in this stage of CFA, and their associated cut-off values, are as follows:

- *Absolute Fit Indices:* Chi-Square (x^2) (p > .05) and its associated *df*, Normed Chi-Square ($2.0 < x^2/df > 3.0$), GFI (> .95), AGFI (> .95), SRMR (< .08)
- Incremental Fit Indices: TLI (> .95), CFI (> .95)
- *Parsimony Fit Indices:* RMSEA (< .06, LO90 < .05, HI90 < .08, PCLOSE > .05), AIC (the smaller the value, the more parsimonious the solution)

It is suggested that of all the "good" fitting models (according to empirical model fit indices); that with the fewest model parameters is considered the best fitting (Noar, 2003). However, it is the opinion of this research that such a mentality presents the risk of developing conceptually narrow, inferior factor solutions that can overlook conceptual vigour in seeking a broad theoretical and empirical conceptualization. In light of this, model parsimony will be considered with great salience, but not ahead of validity and generalizability.

Comparison of factor solutions:

Throughout the process of confirmatory factor analysis, a range of comparisons will be made amongst a series of alternative factor solutions. Along with strong theoretical consideration, the aforementioned criteria for model specification will guide this re-specification process, and whilst it is acknowledged that the role of CFA is by nature confirmatory, as this is a new scale, it is deemed appropriate to examine a variety of solutions. In entering this process, it is anticipated that a two-factor (positive and negative affect) higher-order solution (as observed by Laros and Steenkamp (2005) comprised of

several basic emotion factors, is likely to be the most appropriate solution. However, to ensure empirical rigour whilst providing maximum transparency of results, a series of other solutions are examined. These are discussed below:

- *Null solution:* Such a solution affords no relationship between the affective items, or any exogenous factors and the items. This solution is conceptualized purely as a baseline to compare later solutions against, and as noted by Noar (2003), several CFA fit indices rely on the existence of a null model

- *One-factor solution:* A one-factor solution implies a model comprising of the thirty endogenous affective scale items measured by one exogenous factor of affect. Support for such a solution would imply that consumers do not cluster emotions together in any way, let alone upon their positive or negative valence, furthermore implying that a unidimensional construct best represents the affective scale items

- *Re-specified one-factor solution:* In re-specifying the solution, improvements are made to the initial one-factor solution through the removal of inappropriate parameter estimates (based upon the aforementioned empirical criterions) culminating in a more parsimonious, yet less descriptive solution. Retaining a unidimensional solution of this nature endorses that all affect is explained by one general factor, without the existence of any clusters of emotions

- *Uncorrelated factors solution*: An uncorrelated solution suggests that the 30 affective scale items are explained by six basic emotion factors that are wholly independent of each other, hence orthogonal in nature. Retention of this solution advocates that individuals discriminate between the six factors independently of one another, implying the existence of six very different constructs. Furthermore, this implies that respondents are not influenced, even marginally, by any other affect when they evaluate their experience of each individual emotion, and from a CFA perspective, such a model condemns the existence of any covariances between factors.

- *Correlated factors solution*: Such a solution examines the notion that six basic emotion factors explaining the 30 observed items exist with some relationship existing between factors. Such a conceptualization is insinuated in the obliquely rotated exploratory factor analysis previously exercised, implying that the factors are in some way inter-correlated, whilst opening the door for the existence of a hierarchy between the basic emotion factors.

- *Re-specified correlated factors solution:* A re-specified solution implies that the correlated factors solution is not the best possible fit to the data; thus, from the initial correlated solution,

a better fitting, more theoretically justifiable model is re-specified within the constraints of the initial correlated factors solution

- *Higher-order solution:* Such a conceptualization implies that a higher-order factor can explain the variance observed between the first-order basic emotion factors and the 30 observed emotion items. Such an assumption supports the notion that some or all of the six factors are correlated in some way, whilst further advocating that the experience of basic emotions are causally linked, perhaps through the valence of the affect experienced?

Results:

The competing factor solutions are examined, with the results of such analyses exhibited in Table 10 with their associated fit indices, parameter estimates, and model specifications shown to facilitate thorough comparison. The first solution examined, the null model reveals (as anticipated) a heavily inadequate fit, relegating it to purely a framework for comparison. Evidently, creating a one-factor solution by examining a single exogenous latent factor (*Affect*), did culminate in a vast improvement in model fit; however the solution still remained a long way from being considered "good-fitting" and is rejected for further use. Re-specifying this one-factor solution proves very successful from a model-fit perspective. Not only is this technically the best-fitting solution (based purely upon model fit indices) examined, it also has the fewest amount of model parameters and therefore is considered the most parsimonious. However, despite the claims of Noar (2003) that the solution with the fewest parameters is the best fitting, this solution is not retained as the final measurement model. This solution is rejected in light of its deficiency to fully capture and effectively profile the breadth of affect (both positively and negatively valenced) that consumers experience when exposed to an innovative product. This solution contained an unbalanced 15 emotions; of which 13 are positively valenced (10 gestated from *Joy*, and 3 from *Wonder*) and 2 are almost neutrally valenced (*Unimpressed, Unexcited*); thus from a content validity perspective the scale is inadequate for the research context. Furthermore, such a solution is not in line with logic or the progression of academic research (Richins, 1997; Laros and Steenkamp, 2005) that demonstrates a psychometrically sound multi-dimensional scale should possess both positive and negative valenced affect. Finally, another weakness of the solution is its reliance on spurious covariances between error (residual) terms, coercing it too far towards categorization as "sample specific", and away from the ultimate goal of being recognized as a generalizable scale, hence it is rejected.

As no single-factor solution is able to adequately account for the relationships observed between emotion indicators, multi-dimensional solutions are examined to rectify this empirical inability. An

Table 10: CFA analysis of competing measurement models (Sample 2, $n = 257$)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Model Fit Indices								
Chi square (x^2)	4407	2406	148	1229	804	228	1011	239
df	435	405	81	406	397	126	400	129
Chi square / *df* ratio	10.13	5.94	1.83	3.03	2.03	1.81	2.53	1.85
CFI	-	.496	.969	.793	.898	.949	.846	.945
TLI	-	.459	.960	.778	.888	.938	.833	.935
GFI	.265	.445	.930	.751	.827	.910	.778	.909
AGFI	.214	.363	.897	.714	.798	.877	.742	.879
SRMR	.299	.183	.042	.196	.077	.071	.139	.078
RMSEA	.189	.139	.057	.089	.063	.056	.077	.058
(LO90)	.184	.134	.042	.083	.057	.044	.071	.046
(HI90)	.194	.144	.071	.095	.070	.068	.083	.069
(PCLOSE)	.000	.000	.211	.000	.000	.184	.000	.133
AIC	4467	2526	226	1347	940	318	1141	323
*Parameter Estimates**								
Indicator variables	30	30	15	30	30	18	30	18
Latent factors (2nd order)	-	-	-	6	6	6	6 (1)	6 (2)
Constrained FLs	0	1	1	6	6	6	8	10
Error co-variances	0	0	9	0	0	0	0	1
Non-sig. F.L.s ($p > .05$)	-	11	0	0	0	0	3	0
Sig. F.L.s ($.05 < p > .001$)	-	3	0	0	0	0	1	0
Sig. F.L.s ($p < .001$)	-	15	14	24	24	12	24	15
SMC < .400	-	20	5	5	4	1	9	2
Sig. co-variances ($p < .05$)	-	-	-	-	9	9	-	0
Correlations > .850	-	-	-	-	0	0	-	1
n.s. variances ($p > .05$)	0	0	0	0	0	0	2	1
Model Specifications								
MI cov. > 3.84 ($p < .05$)[#]	-	-	5	35	27	2	26	0
MI R.W.'s > 3.84 (p	-	-	1	12	16	1	26	2
Std. resid. > ±1.96 ($p < .05$)	273	135	0	195	50	17	124	19
Std. resid. > ±2.58 ($p < .01$)	235	116	0	159	17	5	87	9

(1) Null factor solution, (2) One-factor solution, (3) Respecified one-factor solution, (4) Uncorrelated factors solution, (5) Correlated factors solution, (6) Respecified correlated factors solution, (7) Higher-order solution, (8) Re-specified higher-order solution

* Figures are bootstrap estimates

[#] Factor co-variances and MIs are those either between factors, or error terms within the same factor

uncorrelated six-factor solution is examined, employing the findings of the preliminary EFA. The six factors examined are *Joy* (10 items), *Wonder* (3 items), *Apathy* (5 items), *Trepidation* (4 items), *Cynicism* (2 items) and *Melancholy* (6 items). This solution does demonstrate significant factor

loadings of all its indicators, however the fit of the model is far from acceptable. Thus, it can be deduced that an orthogonal solution such as this that does not sufficiently account for the relationships between emotion factors, and is not acceptable for this research context. Specifically, this solution makes the illogical assumption that complete independence exists between the factors (it is highly unlikely that evaluations of an emotion do not influence, in any way, the evaluation of other emotions); hence, as expected it is not retained.

A correlated six-factor solution (re-specified so to only retain those factor covariances deemed statistically significant) is engaged to better represent the multi-dimensional nuances of affect in such a research context. The full array of affect (30 items) is confirmed at this stage of analysis, and a vast improvement is observed in the model fit of the correlated solution (compared to the uncorrelated alternative), with each model fit index experiencing substantial progress. Such a result supports the notion of formidable relationships between factors and the use of oblique factor rotation. However, at 30 emotion items, the solution is far from parsimonious and still possesses too many substantial model specification issues (27 modification indices and 50 standardized residual covariance suggestions) to be retained. Furthermore, the complex nature of correlations between factors is likely to detract from the generalizability of the model for future employment.

Evidently, the six-factor correlated solution is re-specified resulting in an adequately fitting model. This solution exercised the removal of 12 items from the scale, culminating in 18 statistically significant factor loadings. A much more parsimonious scale, the model fit indices are also in harmony with the adequacy of such a solution. However, like the previously examined solution, several covariances between factors are necessary to achieve such model fit; thus, the ability of the model to replicate such idiosyncratic relationships could be considered dubious despite its academically sound credentials. Whilst the factor solution is at this point considered statistically acceptable, the existence of research in the emotions field that advocates higher-order solutions (i.e. Laros and Steenkamp, 2005) cannot be ignored. Thus, further re-specification will be examined through two higher-order solutions.

Higher-order solutions:

As all the first-order factors are significantly co-varied in both correlated factor solutions (as identified in Table 10), there is empirical support for the notion that these factors are highly related (justifying

173

the EFA use of "oblique" rotation). Considering such highly related first-order factors, it could be likely that the construct is comprised of a broader dimension residing over several of these first-order construct sub-dimensions. As the measure is believed to be multidimensional in nature, and in light of the lack of conclusiveness of solutions examined thus far, a higher-order solution is initially fit to the data.

The acceptability of the higher-order solutions is examined with regards to the strength of the higher-order factor loadings and correlations. Like any parameters, these must meet certain requirements to be considered acceptable, thus, the significance of factor loadings, covariances and variances are exhibited in Table 10 as well as the number of parameters that don't meet the .400+ criterion for SMC's. The first of the solutions examined is comprised of a single higher-order factor to explain the relationships between first-order emotion constructs. Such a solution is not re-specified beyond this higher-order configuration, employing all 30 emotion-indicators in the solution with six first-order, and one second-order construct. Retention of such a scale indicates that the six (first-order) constructs are subscales of the one larger (second-order) scale (Noar, 2003), allowing for summation into a single scale. Unfortunately, the unspecified higher-order solution does not meet the criteria for adequate model fit to the data (x^2 = 1010.537, df = 400; x^2:df = 2.526; CFI = .846, TLI = .833, RMSEA = .077 (LO90 = .071, HI90 = .083, PCLOSE = .000), SRMR = .139). Furthermore, the solution is not capable of demonstrating that the second-order factor significantly influences *Melancholy* (β = -.084, p > .05), *Trepidation* (β = .021, p > .05) and *Cynicism* (β = -.041, p > .05), the SMC values of these factors are all negligible, and importantly, the substantial number of advised significant modification indices (26) and standardized residual improvements (124 > .05) fortify such a position, and cast a questionable light over the potential diffusion of this solution in this current, expansive form.

In the event that the single higher-order factor solution evidenced empirically significant factor correlations, acceptable model fit, or theoretical and conceptual justification, this solution would be further scrutinized. However, in absence of these prerequisites (see Table 10), a second-order factor solution is examined with two second-order constructs. These higher-order factors are named in a manner that can be defended by theory (as stipulated by Brown, 2006), entitling them *Positive Affect* and *Negative Affect* (see Figure 9 for a full measurement model). This is particularly important, considering the fact that higher-order factors are specified without indicators". In the absence of a clear empirical solution developed for such a research context, the higher-order composition of the HCE (Laros and Steenkamp, 2005), and wide empirical support for positive and negative emotions as

affective appraisals (see Westbrook, 1987; Izard, 1977; Derbaix, 1995; Phillips and Baumgartner, 2002; Wood and Moreau, 2006) is used to substantiate the scale's higher-order composition. Brown (2006, p.325) states, "With CFA in general, analysis of a higher-order solution should be fully confirmatory", these scales are used to provide the theoretical basis to ensure such a composition in this context is confirmatory.

In an effort to define the best fitting, most conceptually and theoretically sound solution, re-specification of this higher-order solution is undertaken. Such re-specification is again directed with parsimony and generalizability front of mind, removing any indicators that don't meet the aforementioned factor loading and SMC standards, and considering re-specification suggestions from modification indices and standardized residual covariances. Re-specification of the aforementioned higher-order solution to a parsimonious 18-item scale is achieved, with a profound improvement to the solution recognized through the substantial support of two second-order factors, *Positive Affect* and *Negative Affect*. Brown (2006) suggests the "empirical feasibility of the higher-order model should be evidenced by the patterning of correlations amongst factors in the first-order model (p.323)".

Covarying second-order constructs:

Having discovered a very acceptable factor solution through the employment of two-higher-order constructs, the efficacy of a correlated second-order solution is explored. When examining the factor solution with the two-second order constructs (*Positive Affect* and *Negative Affect*) co-varied, the covariance is highly insignificant (covariance =-.060, S.E.= .113, z-score = .531, p= .595). Evidently, this correlation between the two second-order constructs is not successfully reproduced in the data, thus it is suggested in this sample that those who experience *Positive Affect* are not necessarily likely to also experience more or less *Negative Affect*; and vice versa. As these higher-order constructs are merely accounting for the relationships between the first-order constructs though, conceptual distinction does not imply an inferior solution just as the observation of a significant relationship does not imply empirical superiority. Whilst one could anticipate that as a consumer experiences more positive affect they will experience less negative affect, emotions are complex and unique appraisals that cannot be explained by strict logic. Additionally, due to the fact that the pool of items this initial CFA solution is extracted from contains the full 57 emotion items, it is likely that the nuances of individual emotion items may be not as pronounced as in samples with a smaller pool of emotion items, explaining the inevidence of this correlation. Thus, despite it anticipated otherwise, it is not

surprising a statistical correlation is not observed; nonetheless, further examination on a new and independent sample will further explore this empirical idiosyncrasy.

Model fit:

In examining the first-order constructs relationship with emotion indicator variables, all factor loadings are statistically significant (see Table 10), and demonstration of the variance explained by these variables is adequate (with the exception of *Astonished,* which performs empirically weakly, and will face further scrutiny in the latter stages of scale development). Examination of the solution reveals that the fit of this higher-order solution is very good (x^2 = 238.687, *df* = 129, x^2/*df* = 1.850; GFI = .909, AGFI = .879; CFI = .945, TLI = .935, RMSEA = .058 (LO90 = .046, HI90 =. 069, PCLOSE = .133), SRMR = .0758, AIC = 322.687). Alongside its conceptual sense and support from academic literature of such a factor structure, this solution is considered appropriate.

Scale conceptualization:

Having subjected the factor solutions to scrupulous CFA, at this stage of the scale development procedure the consumer affect scale exists as an 18-item, bi-valenced hierarchical scale (See figure 9). From an empirical perspective, the most profound achievement of this model lies in its ability to successfully capture a broad range of unique emotions across six distinct (multi-item) factors whilst retaining acceptable model fit, without the employment of spurious error covariances. Evidently, at this stage in the development of the scale, the decision is made to abstain from further modifying the model to achieve "better fit", as it is the opinion of this researcher, not unlike Meuleners et al. (2003), that it is more important to maintain theoretical and conceptual consistency than purely modifying the model to make minor statistical improvements that are not theoretically driven. As each of the items associated with the six latent constructs have strong conceptual consistency, further specification at this stage of the research may be dubious. Thus, the structure of the higher-order factor solution (as illustrated in Figure 9) at this stage of the scale development process is as follows:

- First-order constructs *Joy*, *Wonder,* and *Apathy* (negatively) load on the second-order latent construct *Positive Affect*, whilst *Apathy*, *Melancholy*, *Trepidation* and *Cynicism* load on *Negative Affect*
- *Thankful*, *Happy, Pleased* and *Enthusiastic* load positively on the first-order latent construct *Joy*

- *Amazed*, *Surprised* and *Astonished* load positively on the first-order latent construct *Wonder*

- *Unexcited*, *Unimpressed* and *Bored* load positively on the first-order latent construct *Apathy*

- *Miserable*, *Sad* and *Depressed* load positively on the first-order latent construct *Melancholy*

- *Tense*, *Nervous* and *Panicky* load positively on the first-order latent construct *Trepidation*

- *Sceptical* and *Suspicious* load positively on the first-order latent construct *Cynicism*

Figure 9: Re-specified second-order factor solution (Sample 2, *n* = 257)*
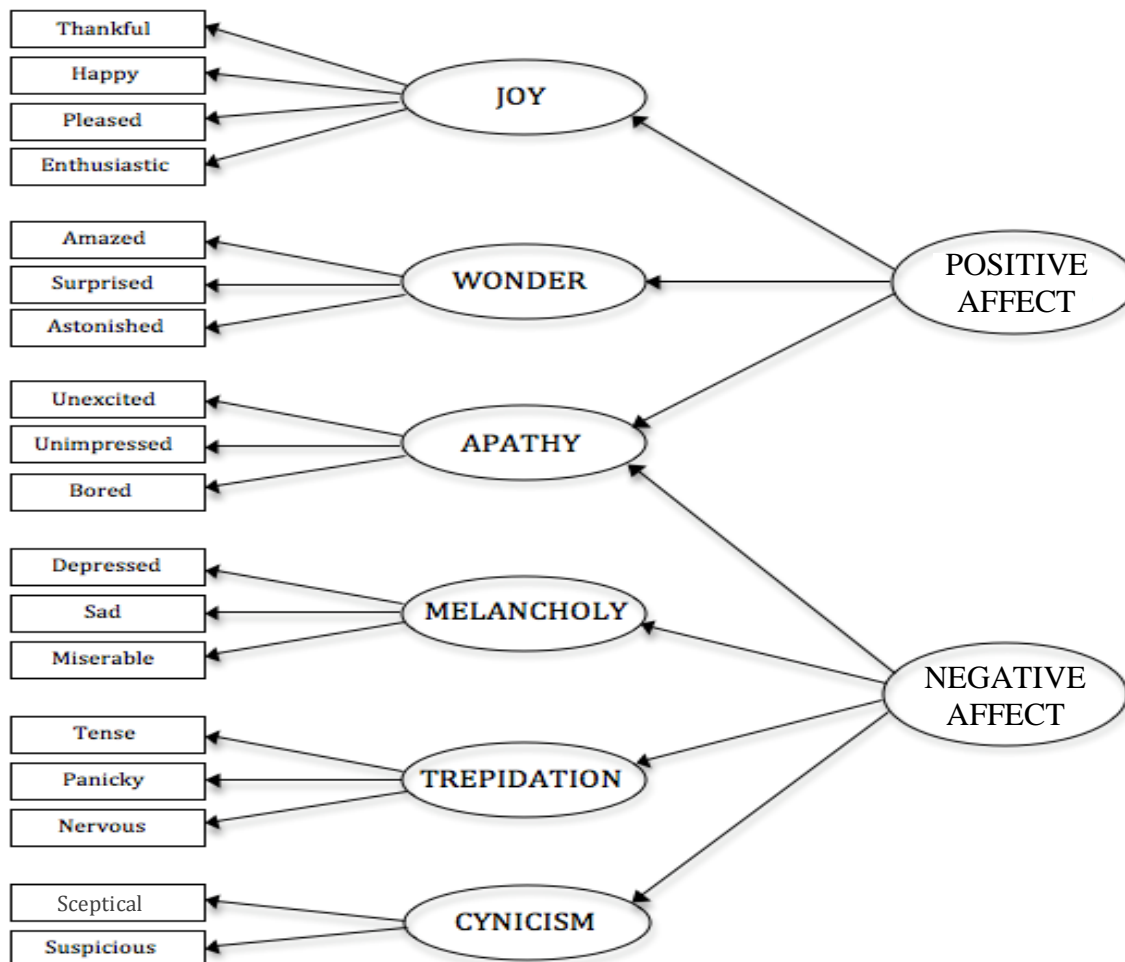
Items omitted:

Undertaking CFA of this scale has seen the further omission of 12 items from the EFA process, culminating in an 18-item scale (measurement model) that dimensionalizes consumer affect experienced when evaluating an innovation. Herein, several items have been dropped from this scale throughout the CFA process. From a conceptual perspective, it is likely the positively valenced emotions *Grateful* and *Hopeful* are suggested for elimination as they promote an empathetic appraisal

177

with another person's situation or life, and may rely upon deeper internal appraisal of one's own life when exposed to an innovation. Such an experience is emotionally demanding, and could be generalized as unlikely in a typical appraisal of an innovation. Furthermore, the temporal assessment of an experienced improved state, such as *Benefited*, may not be as provocable in such an experience. In assessing the other positive emotions, *Enthusiastic*, *Encouraged* and *In Control* may simply not be specific or relevant enough to this pre-adoption research context, thus not strongly related to the factors retained.

In assessing negative affect, whilst it is likely that consumers may often feel *Humiliated, Embarrassed* or *Ashamed*, such affect is more socially driven, and not as likely elicited from such a research procedure, highlighting the empirical context of the scale's application. It is likely that such affect does not hold as strongly in the factor as they are much more complex to understand than the three *Melancholy* items (*Miserable*, *Sad*, and *Depressed*) retained. Whilst these emotions may not be particularly nuanced to the research context, it is likely they are strongly supported, as they are the most simplistic expressions of negative affect, thus serving a great purpose in an empirical scale of this nature. *Uninvolved* and *Unfulfilled* may have suffered a similar fate, as both items require a higher level of comprehension, and are a more general, possibly even existential state than the clearer, internal experience of boredom for example. Finally, the complexity of comprehending the *Anxious* emotion may provide conceptual justification for the elimination of the item from the scale. Thus, the aforementioned results provide substantial evidence to advocate the application of conceptually similar, and easily comprehendible items when implementing this scale.

CFA assessment of common method variance:

Having conceptualized and specified a scale through thorough EFA and preliminary CFA, it is appears both logical and necessary to commence empirical assessment of this solution with confirmation that measurement bias is not evidenced in the data collected. Before further addressing the adequacy of the factor though, the extent to which the data is free of measurement biases must be addressed in a more rigorous CFA manner. Compared to that of EFA, CFA can be used to examine CMV through the simple, and admittedly basic procedure of conducting *Harman's Single-Factor Test* in the CFA context (Korsgaard and Roberson, 1995; Iverson and Maguire, 2000). In a CFA assessment, a single-factor (the method variance) solution is fitted to the indicator variables, and CMV is assumed to be substantial if the hypothesized model, with the aforementioned pathways between observed variables and the

method variance representative factor is determined to fit the data well (Mossholder et al. 1998). In conducting such an assessment on this sample, the results are conclusive in demonstrating a poor-fitting solution (x^2 = 1183.253 (135), CFI = .478, TLI = .408, RMSEA = .174 (LO =165 HI = .183) PCLOSE = .000, SRMR = .1921, AIC = 1255.253); thus CMV is not deemed problematic at this point.

However, with regards to *Harman's Single-Factor Test*, Kemery and Dunlap (1986), and Podsakoff et al. (2003) acknowledge the insensitivity of such a technique in detecting moderate levels of CMV effects, whilst Kemery and Dunlap (1986) discern such a method to be extremely unreliable. Hence, a more rigorous methodology is employed for further CMV scrutiny. Such a method is the *Unmeasured Latent Factor Comparison* method, as outlined by Carlson and Kacmar (2000), and Podsakoff et al. (2003). This procedure involves regressing a latent factor on all observed indicator variables, whilst maintaining the final factor solution. Importantly, the variance of this latent factor is fixed to unity, whilst (non-numerical) equality constraints are imposed on all of these regression pathways. The standardized regression weights of the normal-solution model parameters are now compared to their values in the unmeasured latent factor solution, and if a discrepancy exists larger than .200 for a parameter, CMV is evidenced for that relationship. In this sample, one discrepancy existed comparable to this number (*Negative Affect - Cynicism* = .217), thus minor CMV is localized to this relationship, but overall, no cause for great concern is arisen. In light of the previous findings, and having conducted this more rigorous assessment, it is determined that common method variance is not having a detrimental effect in this sample, with further analyses of this isolated minor symptom reassessed.

Adequacy of sample size:

To ensure the rigorous assessment of the size of the sample collected, this study will assess the number of sample observations required to successfully capture the appropriate power (.80, as detailed by Brown, 2006; Muthen and Muthen, 2002) through both Kim's (2005) minimum sample size estimate, and Westland's (2010) formula. In employing these formulas for Sample 2, the sample size advised (based on an indicator to latent variable ratio of 3 – 18 indicators to 6 first-order latent factors) by Westland (2010) is 200; with Kim's (2005) formula providing a sample size estimate of 107, using the models RMSEA figure of .058 with 129 degrees of freedom. Admittedly, these two figures are relatively disparate, possessing an average of 154. As this CFA solution is good-fitting from an RMSEA perspective, particularly in light of its inherent complexity and large degrees of freedom, the

latter formula is quite flattering, thus the sample collected ($n = 257$) is considered adequate in estimating model parameters relative to the population, with the necessary power required.

Defining the metric of the higher-order solution:

As the solution examined is a (reflective) higher-order solution, the first-order latent constructs are endogenous in nature as the variance observed within them is caused by the second-order construct(s). Thus, these endogenous variables will have non-zero residual terms (with an associated variance), as a degree of error will exist in their prediction. Evidently, it must be determined whether this error presents itself consistently across each of the latent construct's residual terms, or whether the error captured is unique to individual constructs. If the former is correct, then the variance of these residuals should be constrained to unity, if not and the variance of all residuals are not empirically equivalent, a marker variable approach to defining the metric of the scale and achieving identification should be employed.

To assess whether the residuals of the first-order constructs should be exposed to equality constraints in this higher-order factor solution, the "Variance" of the residual terms of the first-order constructs (r1 – *Joy*, r2 – *Wonder*, r3 – *Apathy*, r4 – *Melancholy*, r5 – *Trepidation*, r6 – *Cynicism*) are estimated. Keeping in mind "Variance" is representative of the average spread of the data, and the residuals examined are error in the measurement of a variable; these values inform a researcher of the range of error in the first-order constructs. Thus, a high "Variance" value suggests that for some respondents, the error in estimating the latent factor is low, whilst for others it is high (i.e. large deviations from the mean), whilst a low value suggests the error is consistent across respondents.

It must be noted however, that "Variance" of the error terms does not provide any sort of qualitative assessment of the sample; it is merely a measure of consistency in this context. It is highly possible that residual variance could be extremely low for a factor (generally a good thing), but the error predicting that variable is extremely high. In such a case, the low residual variance figure would just suggest that the error in predicting the variable is *consistently* high; this would be a problem. Hence, the purpose of this exercise is to determine the consistency of the error in predicting the first-order constructs, as if this error is consistent for all of the variables, then equality constraints can be imposed on the variance of the factor for the purpose of identification. In order for the solution to be

appropriately identified and the scale consistent with previous specifications, the regression pathways of the second-order constructs on *Joy*, *Wonder* and *Cynicism* are fixed to unity as marker variables.

Table 11: Residual variance estimates (Sample 2, *n* = 257)

Parameter	Estimate	S.E.	CR.	Sig	r1	r2	r3	r4	r5	r6
r1	.432	.214	2.019	*	0					
r2	.518	.278	1.864	.062	.280	0				
r3	1.413	.457	3.092	***	2.790	2.401	0			
r4	.253	.286	0.885	.376	-.840	-1.036	-3.307	0		
r5	.708	.280	2.529	*	1.155	.590	-2.293	2.445	0	
r6	.720	.344	2.093	*	1.204	.781	-1.978	1.771	.350	0

Figures are bootstrap estimates (where possible)
* = p <.05
*** = p < .001

In examining each of the first-order construct residual terms (r1 – r6) (see Table 11), the "Variance" of r1, r3, r5 and r6 are statistically significant or non-zero, suggesting that the prediction of these first-order constructs (good or bad) possesses wide deviations from the mean figure. Alternatively, the error in predicting *Wonder* and *Melancholy* is deemed somewhat consistent across the sample, as evidenced by their statistically non-significant residual values. Importantly, the variances of these residuals are somewhat similar for only two latent factor pairs (r1 - r2, and r5 - r6), suggesting inconsistency across residuals. As the overall "Variance" of these residuals (error values) are dissimilar, the data is essentially informing us that the spread of error in capturing these first-order constructs (away from the mean) is not consistent for each of the factors, and in comparing r3 (1.413) with r4 (.253), the two are dramatically different. In such a scenario, it can be interpreted that a large *Variance* in the residuals is an undesirable characteristic; as for some respondents the error in capturing the variance in the data for that construct is high, whilst for others, low. Furthermore, in this solution, the "Variance" figure for r3 is very large, perhaps as the factor (*Apathy)* is predicted by both second-order constructs, thus a more complex series of relationships needs to be replicated, and is not done so consistently in this sample.

Secondly, the relationships between residuals are examined so to determine if any, should be constrained to unity. Such scrutiny is undertaken by examining the critical ratios (the difference in parameters divided by the standard error in estimating this discrepancy) for the pair-wise differences amongst parameters, with off-diagonal elements providing a statistic for testing the hypothesis that two parameters are equal in the population. In such a scenario, statistically significant values (those not highlighted) suggest the two parameters are statistically different, or non-zero. Of the relationships

specified, more than half (9 of 16) of the interactions are statistically non-significant (see Table 11). Such non-significant interactions *do not* reject the hypothesis that "the two residual variances are equal in the population" (Byrne, 2001; p. 128); hence invariance, or consistency is assumed for just over half (9) of the relationships between the solution's residuals.

As few of the residual variances are similar and the pair-wise relationships are not convincingly similar, equality constraints should not be imposed on residuals (through their variance terms), and the choice to freely estimate them, and hence constrain marker variables, is supported for the higher-order solution. The data has clearly indicated that the error in capturing data related to the first-order constructs is not consistent across each of the constructs, thus it would be careless to constrain them equivalently. Further justification of this decision is provided by the lack of extant empirical literature to suggest residual variances should be constrained to unity for such a higher-order affective measure, thus doing so would potentially jeopardize the exploratory potential of such a scale. In light of such, the marker variable approach is supported in its employment, with benefits existing for scale reliability and assessments of measurement invariance for later scale assessment (Brown, 2006).

Parameter estimates:

Having developed a solution with acceptable CMV, an adequate sample size, and correct empirical specification, the relationships of the model parameters can be further scrutinized. In interpreting these results[2], it is important to consider that in this sample, responses have been provided for all 57 affect items of the initial pool of items; hence it is possible that some of the empirical relationships observed may be slightly atypical of the scale's final harvest where a smaller number of items are examined.

Factor loadings:

As exhibited in Table 12, the emotion items all load strongly and significantly onto their respective first-order factors, with these factors loading significantly onto their second-order factors (*Joy* = 1.000, *Wonder* = 1.000, *Apathy* = -.634 (*Positive Affect*) and .927 (*Negative Affect*), *Melancholy* = 1.145, *Trepidation* = .766, *Cynicism* = 1.000). As each of these unstandardized regression weights are statistically significant, we can safely reject the null hypothesis. It is important to note that whilst all factor loadings relationships are significant, the empirical influence of the exogenous variable on the endogenous variable is not necessarily identical in size across all relationships. Through further inspection of factor loadings, it is discovered the *Apathy* factor is impacted by both the second-order

factors, including a negative relationship with *Positive Affect*. Such an observation leads one to believe that not only is *Apathy* (conceptually explained as a lack of interest or enthusiasm) experienced more as *Negative Affect* increase, but it is also reduced in intensity as *Positive Affect* increase. From a conceptual perspective, such a discovery is logical, as one could assume the more a consumer is experiencing positive affect, presumably the more engaged and interested they are in the innovation, and feelings of apathy will be reduced. Considering this research is focused on the pre-adoption stages of innovation acceptance, this is an important finding as the challenge of engaging consumers with a new or novel concept is a daunting one, and an innovation's newness and unfamiliarity may elicit a lack of interest or enthusiasm for some consumers. Therefore, a positive affective state may help reduce this, and engage consumers with the innovation, whilst reducing a sense of apathy. On the other hand, the more consumers experience a negative affective state when exposed to an innovation, the

Table 12: Parameter estimates second-order factor solution (Sample 2[#], n = 257)

Endo.	Exo.	F.L.	Δ	S.E.	Δ	C.R.	Sig.	S.R.W.	Δ	S.M.C	Δ
Joy	Pos. Aff.	1.00	-	-	-	-	-	.922	.00	.850	.00
Wonder	Pos. Aff.	1.00	-	-	-	-	-	.909	.00	.828	.01
Apathy	Pos. Aff.	-.63	.00	.087	.01	7.287	***	-.556	.00	.551	.03
Apathy	Neg. Aff.	.927	.01	.206	.04	4.500	***	.477	.01	-	-
Melan.	Neg. Aff.	1.14	.00	.360	.18	3.181	.002	.890	-.0	.806	.00
Trep.	Neg. Aff.	.766	-.0	.263	.13	2.913	.004	.620	-.0	.401	.00
Cynicism	Neg. Aff.	1.00	-	-	-	-	-	.728	.02	.547	.05
Thankful	Joy	1.00	-	-	-	-	-	.780	.00	.610	.01
Happy	Joy	1.08	.00	.064	.00	16.95	***	.853	.00	.728	.00
Pleased	Joy	1.01	.00	.065	.00	15.63	***	.809	.00	.656	.00
Enthusiastic	Joy	.834	.00	.065	.00	12.83	***	.761	.00	.580	.00
Amazed	Wonder	1.00	-	-	-	-	-	.844	.00	.713	.00
Surprised	Wonder	.843	.00	.072	.00	11.70	***	.671	.00	.452	.00
Astonished	Wonder	.489	.00	.087	.01	5.621	***	.436	.00	.196	.01
Bored	Apathy	.963	.01	.121	.03	7.959	***	.736	.00	.545	.01
Unimpresse	Apathy	.954	.00	.127	.05	7.512	***	.777	-.0	.607	.00
Unexcited	Apathy	.00	-	-	-	-	-	.786	.00	.622	.00
Miserable	Melan.	1.16	.00	.133	.04	8.722	***	.802	-.0	.647	.00
Sad	Melan.	.800	.00	.147	.08	5.442	***	.717	.00	.520	.00
Depressed	Melan.	1.00	-	-	-	-	-	.821	.00	.677	.01
Nervous	Trep.	.918	.00	.139	.05	6.604	***	.705	-.0	.504	.00
Panicky	Trep.	.933	.00	.097	.01	9.619	***	.795	.00	.635	.00
Tense	Trep.	1.00	-	-	-	-	-	.737	-.0	.547	.00
Suspicious	Cynic.	1.00	-	-	-	-	-	.698	.00	.491	.01
Sceptical	Cynic.	1.00	-	-	-	-	-	.622	.00	.390	.01

Error terms of Surprised and Astonished are co-varied
*** = p < .001
All figures are bootstrap estimates (500 iterations), with grey columns indicating the discrepancy between bootstrapped and non-bootstrapped estimates

more feelings of boredom or a lack of excitement result. This may suggest that as consumers feel a generally negative affective state towards an innovation, they "switch off" and become disinterested. This is an intriguing discovery as such a unique relationship is yet to be empirically discovered, andappears to be specific to the innovation (pre-adoption) consumption research context; further justifying the decision to develop an affective measure for this specific context. However, at this stage of the research, it is not possible to determine if a positive affective state (the second-order construct) directly reduces, for example, the level of *Bored*, *Unimpressed* or *Unexcited* (the observed indicators). Such analysis will be undertaken in the subsequent "indirect effects" discussion.

Other interesting findings revealed in this sample include the moderate factor loading of *Astonished* on *Wonder*. Whilst again this relationship is highly significant, it does suggest that as the construct increases only a small - moderate rise in the emotion item is observed. This could perhaps be due to the intensity of *Astonished* and the fact that it is likely to represent a stronger form of *Wonder* than for example *Surprised*, thus demanding a more intense experience of *Wonder* to increase it. Additionally, *Sad* (.800) is observed to be impacted less by a rise in *Melancholy* than *Miserable* (1.160). This may suggest that this affective state is more likely to impact on a sense of misery than sadness, indicating the latter is a more intense emotion than the former, however, this could merely be a statistical observation unique to this sample.

Variance explained:

As indicated in Table 12, the standardized factor loadings of the scale are considered adequate (as indicated by the *S.R.W.* column) for the majority of the empirical relationships, with the exceptions of *Astonished's* loading on *Wonder,* and *Apathy's* loading on both second-order factors. To further explore such relationships, scrutiny of the variance explained by each variable, as exhibited in the *S.M.C.* column, must be undertaken. In examining the proportion of variance in the first-order factors explained by the second-order factors, it is demonstrated that *Positive Affect* and *Negative Affect* accounts for an average of 66.38% of variance in their first-order factors (*Joy* = .850 *Wonder* = .828, *Apathy* = .551, *Melancholy* .806, = *Trepidation* .401, = *Cynicism* = .547). With the exception of *Trepidation*, such figures are very acceptable and suggest strong empirical connections; however *Trepidation* will require further scrutiny in subsequent analyses.

In examining the variance explained in the emotion indicators by their respective first-order factors, the variance explained in each of the endogenous variables is sufficient (greater than .500), with the exception of *Surprised* (.452), *Astonished* (.196), *Suspicious (.490)* and *Sceptical* (.390). However, when considering the data collection process, a possible explanation for the low variance explained for some variables is offered, as whilst this scale is analyzed as an 18-item measure, at the point of data collection, the research instrument contained all 57-emotion items. Thus, the responses provided are likely to be influenced or framed to a small degree (believed only "small" because of the rigorous empirical scrutiny the scale has held up to thus far) by some of the other affect respondents evaluated, and some of the variance in responses may be influenced by this. Furthermore, *Astonished's* weak SMC could be a result of respondent's conceptual confusion between *Astonished* and *Surprised* (as is suggested by the sizable between-parameter modification index informing the covarying of their error terms); further scrutiny of this variable is required to confirm such a suspicion.

Indirect effects of second-order constructs:

Having examined the direct effects of the empirical scale developed thus far, the indirect effects can be elucidated using the "Schmid-Leiman Transformation" procedure (Schmid and Leiman, 1957; Brown, 2006) to further scrutinize higher-order CFA solutions[3]. A factor solution's first-order constructs are responsible for mediating the effects of the second-order constructs on the individual items. Herein. a distinction between the two should can made, as well as identification of the direct influence of higher-order factors on indicator terms. By observing the relationships between these figures, one can determine and compare the degree to which a second-order construct's impact on a first-order construct (whether attenuated, or reduced) is carried through to the observed indicator variables. Such findings provide a valuable and intriguing contribution to conceptual and empirical understandings. Moreover, beyond regression analysis, the variance explained within the various components of the solution can also be ascertained, including the variance in the indicator variable explained by the first-order construct, the variance in the indicator variables explained by the second-order construct, the total variance explained in the indicator term, and the variance not accounted for by the constructs. Such results (see Tables 13 and 14) provide a substantially more nuanced understanding of the interaction between variables, allowing researchers to dig deeper into the relationships, both direct and indirect, between latent constructs and their indicator variables. As the *Apathy* construct is influenced by two second-order factors in this scale, the outcomes of the second-

order factors (*Positive Affect* and *Negative Affect*) are estimated separately to maximize empirical interpretation.

Factor loadings

As indicated through the asterisk in the table heading, for both the *Positive Affect* and *Negative Affect* constructs all standardized direct and indirect effects (as obtained through two-sided bias-corrected confidence intervals) are significantly different from zero, providing evidence for the power of their effects. Such figures suggest that, for example, the indirect effect of *Positive Affect* on *Happy* is significantly different from zero. Again, this is supported for all relationships. In examining Table 13 and 14's second column, the standardized factor loading of the first-order construct on the emotion item is exhibited, essentially delineating the influence of the second-order construct that is mediated through the first order construct to the indicator. It must be noted however; this does not represent the unique influence of the first-order construct on the indicator variable (such a unique contribution is demonstrated through the *Residualized 1st Order Factor Loading* (5), rather the effect of the second-order construct that is mediated through the first-order. For all emotion relationships the magnitude of these factor loadings (with the exception of *Astonished)* are strong (.581 - .846) with a mean of .732

Table 13: *Positive Affect's* indirect effects (Sample 2, *n* = 257)*

Indicator Variable	FACTOR LOADINGS					VARIANCE EXPLAINED			
	(1)#	(2)	(3)	(4)&	(5)$	(6)	(7)	(8)	(9)
Unexcited	.775		-.430	.832	.645	41.56%	18.50%	60.06%	39.94%
Unimpres.	.778	-.555	-.432	.832	.647	41.83%	18.62%	60.45%	39.55%
Bored	.715		-.397	.832	.594	35.33%	15.72%	51.05%	48.95%
Amazed	.830		.738	.456	.378	14.30%	54.50%	68.81%	31.19%
Surprised	.681	.890	.606	.456	.310	9.63%	36.68%	46.31%	53.69%
Astonished	.422		.375	.456	.192	3.69%	14.07%	17.77%	82.23%
Happy	.846		.784	.375	.317	10.06%	61.43%	71.49%	28.51%
Thankful	.776	.927	.719	.375	.291	8.47%	51.75%	60.22%	39.78%
Pleased	.800		.742	.375	.300	9.00%	55.00%	64.00%	36.00%
Enthusiastic	.698		.647	.375	.262	6.84%	41.81%	48.65%	51.35%
Mean	.732	.804	.587	.536	.394	18.07%	36.81%	54.88%	45.12%

(1) Mediated, (2) 1st Ord. - 2nd Ord, (3) Indicator - 2nd Order, (4) √Uniqueness, (5) Residualized 1st order, (6) Variance explain in indicator by 1st order, (7) Variance explain in indicator by 2nd order, (8) Total variance explained, (9) Residual variance

* All direct and indirect standardized loadings are statistically different from zero and mid-point of bias-corrected bootstrap confidence intervals

Indicator – 1st Order factor loadings represent the factor loading carried from the second-order construct through to the indicator variable

&Uniqueness represents the proportion of variance in the DV not explained by the IV

$ Residualized factor loadings represent the unique contribution of the first-order construct to the indicator variable

Table 14: *Negative Affect's* **indirect effects (Sample 2, *n* = 257)***

Indicator Variable	FACTOR LOADINGS					VARIANCE EXPLAINED			
	(1)#	(2)	(3)	(4)&	(5)$	(6)	(7)	(8)	(9)
Sceptical	.581	.764	.443	.417	.375	14.05%	19.64%	33.70%	66.30%
Suspicious	.681		.520	.417	.439	19.31%	26.99%	46.31%	53.69%
Tense	.728		.468	.587	.558	31.09%	21.91%	53.00%	47.00%
Panicky	.774	.643	.498	.587	.593	35.14%	24.77%	59.91%	40.09%
Nervous	.700		.450	.587	.536	28.74%	20.26%	49.00%	51.00%
Depressed	.789		.714	.181	.336	11.27%	50.99%	62.25%	37.75%
Sad	.690	.905	.624	.181	.293	8.60%	38.94%	47.54%	52.46%
Miserable	.783		.709	.181	.333	11.10%	50.21%	61.31%	38.69%
Unexcited	.775		.357	.788	.688	47.35%	12.71%	60.06%	39.94%
Unimpressed	.778	.460	.358	.788	.690	47.66%	12.79%	60.45%	39.55%
Bored	.715		.329	.788	.634	40.25%	10.80%	51.05%	48.95%
Mean	.727	.686	.497	.529	.498	26.80%	26.73%	53.14%	46.86%

(1) Mediated, (2) 1st Ord. - 2nd Ord, (3) Indicator - 2nd Order, (4) √Uniqueness, (5) Residualized 1st order, (6) Variance explain in indicator by 1st order, (7) Variance explain in indicator by 2nd order, (8) Total variance explained, (9) Residual variance

* All direct and indirect standardized loadings are statistically different from zero and mid-point of bias-corrected bootstrap confidence intervals

Indicator – 1st Order factor loadings represent the factor loading carried from the second-order construct through to the indicator variable

&Uniqueness represents the proportion of variance in the DV not explained by the IV

$ Residualized factor loadings represent the unique contribution of the first-order construct to the indicator variable

and generally small differences between them. Such evidence indicates strong relationships exist between latent constructs as the empirical impact the second-order construct is having is being transmitted strongly through to the emotion item through the first-order construct. This suggests that a one SD rise in *Positive Affect* causes *Apathy* to fall by .555 SDs, and a one SD rise in *Apathy* then causes *Bored*, for example, to rise by .715 SDs; a strong connection between the two exogenous factors.

The third column indicates the standardized factor loading of the first-order constructs on their second-order constituents. Although briefly mentioned above, these values indicate the rise (or fall) in first-order constructs SDs caused by a one SD rise in the second-order construct. As displayed in Tables 13 and 14, the factor loadings are sizable (*Positive Affect* mean = .804, *Negative Affect* mean = .686), demonstrating that the second-order constructs have an acceptably strong impact on first-order constructs. It must be noted however, the means of these factor loadings are purely based on the size of the loading irrespective of its negative or positive nature.

As exhibited in the fourth columns, the standardized factor loadings of indicators on the second-order constructs are displayed. These direct effects are calculated through the product of the emotion item's

(standardized) factor loading on the first-order construct (i.e. *Miserable - Melancholy)* and the first-order construct's factor loading on the second-order construct (i.e. *Miserable - Negative Affect*). Conceptually, such figures represent the direct effect of the affective states on the emotions observed by respondents; effects that are not mediated through first-order basic emotion constructs. In relation to the aforementioned inverse relationship, for *Positive Affect* and *Apathy* it is denoted that as a respondent experiences *Positive Affect*, they are less likely to experience *Unexcited* (-.430), *Unimpressed* (-.432) or *Bored* (-.397), and a strong proportion of this is directly due to the influence of the positive affective state. Whilst the assumption cannot be made that respondents feel more excited or stimulated; this does however show that increasing the positive affective state a consumer experiences does result in the reduction of the negatively valenced *Apathy* emotions by a mean of approximately .420 SDs. Whilst not as large an impact, a one SD rise in *Negative Affect* is directly attributable to a mean rise in *Unexcited*, *Unimpressed* and *Bored* of .348 SDs. Such a discovery suggests that marketers are able to reduce a substantial proportion of the intensity of experience of these three negative, apathetic emotions by increasing the overall positive affective state as opposed to trying to reduce through a negative affect state; an interesting discovery.

Also demonstrated in the fourth columns of Tables 13 and 14, all other emotion items experience a substantial direct effect from their second-order constructs, however the *Joy* emotions of *Happy, Thankful, Pleased* and *Enthusiastic* are influenced particularly strongly (mean SD rise of .723 by a one SD rise of the latent factor) by *Positive Affect*. In an attempt to conceptualize this observation, this scale findings suggest the more *Positive Affect* a respondent feels, the more *Happy*, *Pleased* etc. they are, irrespective of the general feeling of *Joy*. In assessing the direct impacts of second-order constructs within factor items, the majority of items are impacted similarly, with the exception of *Astonished* (.375) that is impacted much less strongly than its counterparts *Surprised* (.606) and *Amazed* (.738). However, as the overall impact on *Astonished* has been identified as small, this is not surprising. Further intrigue in the empirical structure of the scale lies in the comparison of positive and negative affective states. As shown in Tables 13 and 14, the mean direct effect of a positive affective state is .587, whilst its negative counterpart is .497. This demonstrates that the direct effect of *Positive Affect* is more than 18% stronger than that of *Negative Affect* on the emotion items observed. This is an intriguing discovery as it delineates that positively valenced apathy (and in the case of apathy emotions, negatively valenced ones) are more susceptible to the direct influence of a general positive affective state than negatively valenced emotions are affected by a negative affective states. This could suggest that to achieve the desired marketing outcomes and facilitate innovation adoption, practitioners should direct more resources to enhance positive affect than attempting to reduce negative affect.

In such a higher-order solution, the second-order exogenous factors cannot perfectly explain the variations observed in indicator variables. As a result, the proportion of variance in the first-order construct not explained by the second-order construct (uniqueness) is acknowledged and utilized in calculating the "Residualized First-Order Factor Loading" (see column 6). Such a figure represents the "the unique contribution of the first-order factors to the prediction of the indicators" (Brown, 2006; p.335), and is calculated by multiplying the first order factor loading by the square root of the residuals "uniqueness". Thus, such factor loadings indicate the direct effect of the first-order construct on the emotion items; an effect that is not attributed to the mediating role of the higher-order constructs influence. Herein such findings allow comparisons to be drawn as to which of the constructs (first or second-order) is having a stronger direct effect on the emotion indicators. The results show that the emotions comprising *Apathy* (1st Order: *Positive Affect* mean = .629, *Negative Affect* mean = .671; 2nd Order: *Positive Affect* mean = -.420, *Positive Affect* mean = .348) and *Trepidation* (1st Order: mean = .562, 2nd Order: mean = .472) are affected more strongly by their first-order construct than the direct effect of their second-order construct. This suggests that the experience of *Unexcited*, *Unimpressed,* or *Bored* can be increased or decreased more effectively by targeting the direct experience of *Apathy*, rather than a general positive or negative affective state. Furthermore, *Trepidation* emotions can be reduced in a similar manner, where going direct to the "basic" emotion experience should prove more influential. On the other hand, the experience of *Happiness* or *Enthusiasm* for example (*Joy* factor items), is more ascribed to increases in the positive affective states of a respondent (its second-order construct) than the more specific, basic emotion construct (*Joy*). This is the case for all *Joy*, *Wonder*, *Melancholy* and *Cynicism* emotion items. The implications of this for marketers may be substantial, as these emotions are more susceptible to the influence of a general positive affective state, and due to its non-specific nature, may be the easiest emotions to be manipulated by practitioners. Such a finding may support the notion that from a semantic and conceptual perspective, these emotions are far easier for consumers to comprehend and marketers to manipulate.

Variance explained:

Having empirically scrutinized the direct and indirect effects of the measurement model, the variance in the indicator variables explained by both the first and second-order constructs is examined (see the latter columns of Tables 13 and 14). The first of these columns indicates the variance in the emotion items explained uniquely by the first-order construct (i.e. the residualized first-order factor loading).

189

In other words, these values represent the true proportion of variance in the indicators explained by the first-order construct. In line with the findings related to the residualized factor loadings, *Apathy* and *Trepidation* items have a substantially larger amount of variance explained by their first-order construct, averaging 42.33% and 31.66% respectively (as opposed to the 14.86% and 22.31% explained by their second-order constructs). The second "Variance Explained" column details the variance in the emotion item explained directly by the second-order construct, with the *Melancholy*, *Cynicism*, *Wonder* and *Joy* emotion items explained much more by their second-order constructs than their first-order. This suggests that for these emotions a general positive or negative affective state accounts for much more of the variations observed in the data than specific basic emotions do.

Delving deeper into the *Apathy* construct, Tables 13 and 14 reveals that on average 17.61% of the variance in *Unexcited*, *Unimpressed* and *Bored* is explained by a positive affective state, whilst 39.57% of the variance in these emotions is explained by the more specific emotional state of *Apathy*. From a negatively valenced perspective, 12.10% of its variance is explained by a negative affective state, with *Apathy* explaining an average of 45.09% of the variance in these emotions. Whilst the variance explained overall (an average of 57.19%) is the same irrespective of the valence of the affective state; interestingly, in this sample the experience of *Apathy* emotions (*Unimpressed, Unexcited* and *Bored*) is more or less similarly explained by a negative and positive *Apathy* (first-order) state (39.57% and 45.09% respectively), with on average, 42.81% of variance not explained by either of the first or second-order constructs. Such findings stress not only the importance of *Apathy* to this scale, but the necessity of it to be modeled as both a negative trait, and one that is reduced by positive affect.

In assessing the overall variance explained by the direct and indirect effects of second-order constructs in this sample (see column 9), the majority of variance of the scale's items are explained, with little residual variance existing. As demonstrated in Table 13, the average variance explained in the positive affect emotions is 54.88%, indicating that more variance is explained by first and second-order constructs than what is not explained. Similar results are demonstrated in the negative affect emotions (see Table 14), with a slightly smaller average total variance explained figure of 53.14%. Therefore, from such findings, one can have confidence that the empirical results observed in this sample are more often than not as a result of observed variations in the data, not scrupulous or unexplainable phenomenon[4].

- *Footnotes:*

2. In assessing the results of the higher-order CFA solution, the grey highlighted columns of Table 12 indicate the discrepancy between bootstrap-adjusted figures, and those not adjusted. As can be observed in the Δ *S.E.* column, the standard errors of many of the factor loadings (particular the second-order construct's loadings on *Melancholy* and *Trepidation*) are substantially different in the bootstrapped analysis. This is imperative to identify, as had bootstrapping not been used, the traditional parametric tests would have grossly underestimated many of the standard errors (see endogenous variables *Melancholy, Trepidation, Sad* or *Nervous*), thus presenting inaccurate and inflated *z*-scores, and incorrectly reporting the extent of significance of several factor loadings. In comparing bootstrapped and non-bootstrapped estimates, the SMC figures do perform a little more consistently, with the only noteworthy discrepancies coming from the *Apathy* and *Cynicism* constructs which are underestimated rather sizably without bootstrap adjustments.

3. As AMOS does not explicitly report bootstrapped adjustments of standardized direct and indirect effects, such figures are calculated using the bootstrapped adjusted figures provided in the "*bias-corrected percentile method matrix*", with bias-corrected confidence intervals set at 95% (500 iterations). The figure is calculated by estimating the lower and upper bounds of the parameter using a 95% confidence interval, finding the estimate figure (midpoint) within.

4. In examining the total variance explained in the emotion items by the constructs, these figures are mostly comparable to the SMC figures presented in Table 12. However, a discrepancy exists as the figures used to calculate the standardized factor loadings are bootstrapped adjusted and are calculated from confidence intervals, of which (due to the sampling nature of bootstrapping) differing standard errors will be determined, resulting in slightly different confidence intervals. Hence slightly different standardized factor loadings are calculated, resulting in slightly modified estimations of variance explained; but overall, these figures are comparable.

Step 5a. Scale validation (Sample 2)

Having empirically explored the composition of the scale under development through EFA of 2 independent samples, with the second subject to further CFA, assessment of the scales construct validity is now undertaken. Construct validity is recognized as the notion that a scale is measuring what it is intended to measure (Anastasi, 1988), thus is an integral step in examining the affective responses of consumers to innovation. As the preliminary step "content validity" has been examined in depth earlier in the scale development process, the latter two steps of the three-step procedure outlined by O'Leary-Kelly and Vokurka (1998) are employed to further establish the construct validity of the measurement model. In determining if such a measure effectively dimensionalizes the concept of consumer's affective appraisals towards an innovation, these two steps of analysis examine the scales unidimensionality and reliability, as well as its convergent, discriminant, and trait validity.

Reliability:

Reliability is recognized as the stability or consistency of a measure (Bollen, 1989). All scales, including this one, will reflect not only its theoretical concept, but also a degree of error (random and systematic) in the measurement of that concept (Bagozzi, Yi and Phillips, 1991). In an attempt to confirm the measure is satisfied as valid, the scale's reliability must be assessed. During this stage of the scale development process, both reliability (through Cronbachs' alpha coefficient and composite reliability) and inter-item correlations are considered, honouring the balance between maximizing internal consistency and statistical power (as indicated by reliability estimates) with the breadth and validity of the scale (as indicated through inter-item correlations) considered of utmost importance.

Cronbachs' alpha:

Cronbachs' alpha coefficient is often employed to estimate the systematic variance of a measure (in this scale, the basic emotion first-order constructs), based upon the correlations amongst the empirical indicators (emotion items) that comprise it. Cronbachs' alpha is estimated by specifying the proportion of total variance that is communal amongst items. In examining this coefficient, Nunnaly (1978) considers coefficient values of .700 or above as sufficient representatives of reliability. In this sample, the Cronbachs' alpha coefficients for the scale's first-order constructs are as follows: *Joy*: $\alpha = .875$, *Wonder*: $\alpha = .728$, *Apathy*: $\alpha = .812$, *Trepidation*: $\alpha = .790$, *Melancholy*: $\alpha = .819$, and *Cynicism*: α

= .600. Such figures indicate that each of the basic emotion constructs exceeds the .700 criteria for Cronbachs' alpha, with the exception of the *Cynicism* construct. However, as this construct is only measured by two indicator variables, it had not been expected to satisfy this criterion. In applying Nunnaly's (1967) more liberal criterion of .500 however, the construct does meet the (diminutive) cut-off set out. From an individual item perspective, each emotion item is strongly contributing to the internal consistency of the factor (as evidenced by alpha), and should any be deleted, the internal consistency of the constructs would not improve. Additionally, the corrected item-total correlations of the indicators of each construct all satisfy the criterion of exceeding .300 (Field, 2009). Even the *Cynicism* construct items exhibit acceptable corrected item-total correlations of .432, indicating the emotions correlate adequately with the total score of the research instrument (Field, 2009), thus its residence in the scale is considered justified.

Composite reliability:

In light of the inadequacy of Cronbachs' coefficient when assessing two-item measures, its inability to account for measurement error, and it's ignorant pursuit of maximized correlations amongst items (identified by Clark and Watson, 1995) by encouraging the retention of items purely because of strong internal consistency, composite reliability is examined in a CFA context. Composite reliability (CR) (as assessed through CFA) examines the extent to which sets of indicators of a latent construct share in the measurement of the construct, with the reliability of a scale determined by comparing a construct's true score variance with its observed variance. As the scale is *not* held to the condition of tau equivalency (i.e. each item measures the same latent variable, on the same scale, with equivalent item true scores, Raykov, 1997), CR should be a better estimator of reliability compared to Cronbachs' alpha (Brown, 2006). To calculate the composite reliability figure for each first-order construct, the sum of their item's standardized regression weights is squared, and divided by the sum of this figure and the sum of the item's measurement errors. Such analysis reveals the following composite reliability figures: *Joy:* .878, *Wonder*: .697, *Apathy*: .810, *Melancholy*: .824, *Trepidation*: .790, *Cynicism*: .607. This indicates that *Cynicism* (.607) does not demonstrate sufficient CR, whilst *Wonder* is on the borderline of acceptance (CR = .697). However, as *Cynicism* is a two-item measure, the CR value is likely to be low as multiple items are not able to offset the low S.R.W. value of an associated item, just as *Wonder* has done with *Astonished*. To further explore the consistency of the scale, unidimensionality is explored.

Unidimensionality:

The unidimensionality of the scale is identified as how well the scale's latent constructs reflect a single trait underlying a measure. Essentially it examines whether the emotion indicators are related to only one, single construct, or in this case, basic emotion. Such validity makes the implication that a latent construct (a cluster of basic emotions) is capturing only variance related to its own construct (Gerbing and Anderson, 1988); thus, confirming the scale is unidimensional if all the items of the scale are measured by only one latent variable. As is indicated in Table 12, each of the emotion items are significantly, and often very strongly, influenced by a single latent factor, indicating ample unidimensionality is achieved. Further support is provided through the desirable model-fit of the higher-order solution.

Average inter-item correlation:

In light of the inadequacy of Cronbachs' coefficient when assessing two item measures, and it's ignorant pursuit of maximized correlations amongst items (as identified by Clark and Watson (1995), the average inter-item correlations are examined from an SEM perspective, with such figures assessing the homogeneity of the measure. As this solution is over-identified, the model implied correlations are examined. For the scale, the average inter-item correlations between indicators of each latent factor are relatively moderate, ranging from .431 - .640, whilst promoting the constructs as not too internally consistent that they disregard the breadth of the construct. Clark and Watson (1995) advise that inter-item correlations of .40 to .50 are acceptable for narrow concepts, and considering the semantic similarities of the items, and their relative simplicity, the means of these inter-item correlations may be considered a little high. However, Clark and Watson (1995) further advise that unidimensionality is not ensured through just the mean inter-item correlations though; the range and distribution of these correlations is also important. The authors suggest that the *majority* of inter-item correlations should fall within the .15 - .50 range, not necessarily the mean. As we can see from the *range* figure indicated in Table 15, although the correlations are what could be considered relatively moderate in magnitude (again considering their simplicity and their semantic similarities), some of the constructs, but not all of them, fall within this range. However, further advice is given (p. 316) that "to ensure unidimensionality, almost all of the inter-item correlations should be moderate in magnitude and should cluster narrowly around the mean value". Table 15 exhibits the standard deviations of these

constructs, and as can be observed through the negligible standard deviation figures, these correlations do cluster narrowly around the mean.

Table 15: Assessments of inter-item correlations (Sample 2, *n* = 257)*

	Joy	Wonder	Apathy	Melancholy	Trepidation	Cynicism
Range	.592 - .691	.366 - .568	.581 - .660	.579 - .667	.529 - .593	.431
Mean	.640	.467	.589	.610	.564	.431
S.D.	.001	.010	.001	.001	.001	-

*Bootstrapped correlation estimates cannot be provided for model-implied correlations

In light of the trade-off between internal consistency (as indicated through high inter-item correlations and composite reliability) and conceptual breadth (as indicated through moderate average inter-item correlations), the reliability and internal consistency of the scale and its constructs are considered sufficient, with later assessment through an independent sample used to verify this assertion.

Convergent and discriminant validity:

To determine whether the systematic variance observed in a measure results in high correlations with related indicators of the construct and low correlations with those it should not be associated with (Peter, 1981), assessments of convergent and discriminant validity are conducted. Essentially, this form of validity aims to establish that emotion indicators are in agreement with indicators of the same construct, whilst being conceptually distinct from others measures (Oh, 2005; Campbell and Fiske, 1959). As this scale is employed in the evaluation of consumer's complex affective appraisals unique to the context of innovations, it is essential that each of the basic emotion factors successfully measure a single sub-dimension of affect without crossing into the territory of the other emotion factors. Evidently, Noar (2003) asserts that convergent and discriminant validity must be established together.

Convergent validity:

Convergent validity is indicated by "evidence that different indicators of theoretically similar or overlapping constructs are strongly interrelated" (Brown, 2006; p.2). Thus, such validity is established when proof is given that measures (in this case the individual emotion items) that should be related, are related. This is evidenced by significant factor loadings, and average variance extracted figures above .500 (Bollen, 1989; Segars and Grover, 1993). Meuleners et al. (2003) identifies that for second-order factor solutions, the relationship between endogenous (basic emotion factors) and exogenous

latent constructs (*Positive Affect* and *Negative Affect*) must also demonstrate significance to achieve convergent validity.

Table 16: Convergent validity estimates (Sample 2, *n* = 257)

1st-Order 2nd-Order	Joy Pos.	Wonder Pos.	Apathy Pos.	Apathy Neg.	Melanch. Neg.	Trepidat. Neg.	Cynicism Neg.
F.L.	1.000	1.000	-.634***	.927***	1.145***	.766**	1.000
S.R.W.	.922	.909	-.556	.477	.890	.620	.728
A.V.E.	.644	.454	.591	.591	.615	.562	.441

Estimates are bootstrap estimates
** $p > .01$
*** $p > .001$

In examining these criteria (see Table 16); firstly, the direct effect of the second-order construct *Positive Affect* on the first-order latent constructs *Joy* and *Wonder,* whilst both constrained to unity as marker variables, do exhibit strong standardized regression weights (.922 and .909 respectively), whilst the *Apathy* construct's factor loading is statistically strong and significant. The direct effect of the second-order construct *Negative Affect* on the first-order latent constructs *Apathy, Melancholy* and *Trepidation* are also statistically significant, whilst the *Cynicism* construct (also constrained to unity as a marker variable) possesses a strong standardized regression weight (.728). Thus, in light of these empirical relationships, preliminary support is provided for the convergent validity of this scale. Each construct's convergent validity is further examined through average variance extracted (AVE), with a figure of .500 set as an acceptable criterion for a latent factor (Danelon and Salay, 2012; Hair et al., 2009). As demonstrated in Table 16, the AVE for the scales six first-order constructs are as follows: *Joy* = .644, *Wonder* = .454, *Apathy* = .591, *Melancholy* = .615, *Trepidation* = .562, and *Cynicism* = .441. Herein, the majority of the scale's AVE figures satisfy the condition of convergent validity, with *Cynicism* and *Wonder* marginally failing to meet this criterion. In consideration of their insufficient factor loadings, these constructs are deemed poor demonstrators of convergent validity at this point of the scale (in light of one weak item in the case of *Wonder*), thus further attention will be paid to the validity of these constructs in upcoming analysis of just the 18-items of this scale, as opposed to the sizable initial pool of items (57) examined at this stage of the research.

Discriminant validity:

One of the concerns of the scale development process for such a complex measure is that the sub-dimensions (basic emotion factors) may exhibit multicollinearity, being so closely related that

conceptual overlap occurs in the measurement of the independent variables. Herein, discriminant validity is examined to establish that the scale's constructs are unique, and statistically distinct. Such validity is demonstrated through "results showing that indicators of theoretically distinct constructs are not highly inter-correlated" (Brown, 2006; p.3). In the context of this research, the variance captured within the basic emotion constructs should be attributable to that latent variable only, not any other basic emotion constructs, and in testing for discriminant validity, three methods are employed using *bias-corrected 95% confidence interval bootstrapping* (500 iterations) values. These tests include the chi-square difference test, the confidence interval test, and the average variance extracted test, for which the results of these tests are exhibited in Table 17.

Chi-square difference test:

The chi-square difference test is a widely adopted practice in examination of construct (and specifically discriminant) validity (Bagozzi and Phillips, 1982; Anderson and Gerbing, 1988; Shiu et al., 2011). Through implementing a chi-square difference test on each of the two-construct relationships of this scale, its discriminant validity is examined. As six emotion constructs have emerged through the employed factor analyses, this process is undertaken a total of 15 times, with the results of each between-factor relationship illustrated in Table 17. The Chi-square analysis of the scale's discriminant validity is achieved by calculating the (chi-square) difference between the two factor solutions with a single degree of freedom discrepancy (resulting from a freed parameter). To examine this, a solution where the covariance between the two constructs is constrained to unity (perfectly correlated) is compared with a solution that allows this correlation to be freely estimated. A chi-square discrepancy of 3.84 or more is statistically significant and indicative of rejecting the null hypothesis that the correlation between the two constructs is 1 (i.e. the two constructs are the same). However, considering the fact that the pool of items this initial CFA solution is extracted from contains the full 57 emotion items, it is likely that the nuances of individual emotion items may be not as pronounced as in samples with a smaller pool of emotion items (as subsequent samples do), and as a result, non-related items in this sample may be correlating higher across constructs than they will in a more parsimonious scale where each emotion item is more discernible from a respondents perspective due to the sheer lower number of items.

In comparing the chi-square values of each of the two-construct solutions examined, the majority of differences are statistically significant between the paired constructs. Those that did not satisfy this

Table 17: Assessments of discriminant validity (Sample 2, n = 257)

Constructs	x^2 diff [#]	Confidence Intervals[*]				AVE Method[$]		
		r	Lower	Upper	t-value	AVE	SV	AVE > SV
Joy Wonder	$x^2 = 2.112$	.842	.737	.934	.007	.642 .450	.709	No
Joy Apathy	$x^2 = 117.933$	-.533	-.635	-.424	.002	.642 .594	.284	Yes
Joy Melancholy	$x^2 = 33.037$	-.075	-.210	-.064	.238	.641 .613	.006	Yes
Joy Trepidation	$x^2 = 38.006$	-.013	-.153	.153	.753	.641 .566	.000	Yes
Joy Cynicism[%]	$x^2 = 7.699$	-.015	-	-	-	.641 30.660	.000	Yes
Wonder Apathy	$x^2 = 91.955$	-.466	-.595	-.237	.003	.473 .594	.217	Yes
Wonder Melancholy	$x^2 = 33.148$	.050	-.107	.232	.502	.489 .613	.002	Yes
Wonder Trepidation	$x^2 = 34.478$	.127	-.052	355.	.185	.488 .567	.016	Yes
Wonder Cynicism[%]	$x^2 = 7.630$	.039	-	-	-	.488 9.630	.002	Yes
Apathy Melancholy	$x^2 = .024$	.423	.267	.590	.002	.594 .612	.179	Yes
Apathy Trepidation	$x^2 = 13.316$	.188	-.012	.396	.060	.594 .566	.035	Yes
Apathy Cynicism	$x^2 = 0.189$	.550	.346	.721	.004	.594 .492	.302	Yes
Melancholy Trepidation	$x^2 = 0.666$	.634	.427	.881	.002	.613 .566	.402	Yes
Melancholy Cynicism	$x^2 = 0.001$	.612	.468	.767	.002	.612 .473	.375	Yes
Trepidation Cynicism	$x^2 = 9.788$	.366	.175	.595	.002	.566 .432	.125	Yes

[*] Estimates are bootstrap calculated (95% bias – corrected confidence interval)
[#] All chi-square difference tests possess 1 *df*
[$] Estimates are bootstrap estimates
[%] The variance for the *Cynicism* construct is negative, thus bootstrap estimates cannot be estimated

test are the *Joy – Wonder*, *Apathy – Melancholy*, *Apathy – Cynicism*, *Melancholy – Trepidation* and *Melancholy – Cynicism* relationships. From a conceptual perspective, such findings do appear logical. For example, the conceptual overlap between *Joy* and *Wonder* may be substantial as the items are all very clearly positive in valance. Therefore, if one feels astonished, there is also likely to be a degree of happiness experienced etc. The negatively valenced constructs that demonstrate insufficient discriminant validity (i.e. *Apathy – Melancholy*, *Apathy – Cynicism*, *Melancholy – Trepidation* and

Melancholy – Cynicism) are doing so because of relatively large correlations shared between items; this may be due the large number of initial pool items from which the sample is drawn grouping these negatively valenced items together. Whilst this situation is far from ideal, the degree of concern of this occurrence will be determined through further scrutiny in the form of other discriminant validity tests (see below), and employment on a new independent sample examining only those 18 emotions retained in the scale to date. As this is just one methodology for assessing such validity, further conclusions will not yet be drawn in light of these findings.

Confidence interval test:

A further examination of the scale's discriminant validity is achieved through examination of the bootstrapped bias-corrected (500) confidence intervals (95%) of the correlations between factors (Bagozzi et al., 1991; Shiu et al. 2011). Constructs are said to be discriminant if the upper or lower boundaries of the confidence intervals do not reach 1.000 when (freely estimated) two-construct correlated solutions are examined as before. It must be noted however, that due to the large negative error variance attributed to *Suspicious* for the *Joy – Cynicism*, and *Wonder – Cynicism* validity tests, bootstrapped estimates cannot be calculated, and thus the confidence interval test is not undertaken for these relationships. As is demonstrated in Table 17, despite several paired constructs not satisfying the criteria of the chi-square difference test, all of the constructs satisfied the confidence interval test of discriminant validity. The vast majority of these tests revealed high discrimination between constructs as indicated by confidence intervals approaching, or less than zero. The only pair of constructs branded a concern is the *Joy – Wonder* relationship, which featured an upper confidence interval of .934, but as this is not exceeding the tests criterion of 1.000, discriminant validity is supported. Herein, all the paired solutions, including those identified as a concern in the previous test, have satisfied discriminant validity.

Average variance extracted (AVE) test:

The final assessment of discriminant validity is made through the AVE procedure, where the average variance extracted (average of item's S.M.C.) of the two-constructs are compared with the shared variance (the correlation figure squared) between constructs, with it required that each construct should correlate more strongly with its own items (indicator variables) then with another construct in the CFA model (Fornell and Larcker, 1981; Hair et al., 2009; Farrell, 2010; Shiu et al. 2011). To calculate the

most accurate variance figures, bootstrap adjustments (500 iterations) are employed. If the AVE of each construct is larger than the variance shared between the two, then discriminant validity is supported. It must be again noted that due to the large negative error variance related to *Suspicious* for the *Joy – Cynicism*, and *Wonder – Cynicism* validity tests, bootstrapped estimates cannot be calculated for these relationships, and the shared variance figure is calculated through a regular estimate. As this variance figure is so low for both relationships (see Table 17), it is highly unlikely a bootstrapped estimate would be different enough to have these relationships violate the AVE test. In employing the AVE test, it is determined the condition is satisfied for all paired constructs, with the exception of the *Joy – Wonder* relationship, which failed this test as a result of its high proportion of shared variance between factors. As this relationship is flagged through the chi-square difference test, this is not a surprise. Nonetheless, despite satisfying the criteria of the confidence interval test, the identified relationship between the *Joy* and *Wonder* constructs will require further examination on an independent sample before the scale can be approved as possessive of acceptable discriminant validity.

Points of empirical attention:

Having undertaken extensive analysis of the two samples collected thus far, robust scrutiny of the solution has identified several relationships or variables that require further empirical attention in subsequent scale development analysis. In saying that, it is important to note that this sample collected data with all 57 emotions of the initial poll of items, thus full support for every empirical variable and relationship was anticipated unlikely. In light of this limitation, the findings revealed thus far identify seven areas of empirical consideration, including:

- The covarying of second order constructs *Positive Affect* and *Negative Affect* – whether this relationship is supported or rejected in further samples requires further scrutiny
- The *Apathy* construct is discovered to be significantly influenced by both positive (inversely) and negative affect – such a finding is a profound discovery, yet further support is needed to confirm its empirical substance
- The covariance between the error terms of *Surprised* and *Astonished* is employed in this sample – such a relationship is not ideal as it is the prerogative of this researcher than any error covariances (particularly those without strong prior support) diminish the generalizability of the solution, thus future scrutiny is necessary

- The variance explained (as indicated through SMC values) in the *Astonished* item is insufficient – further scrutiny is necessary to determine if this is sample specific, or if further model re-specification is required

- Despite its conceptual contribution to the research context, the two-item *Cynicism* factor failed to satisfy the criteria for reliability – further scrutiny should determine if such a construct should be collapsed, re-specified, items added, or removed altogether

- The convergent validity of the *Cynicism* and *Wonder* constructs (as identified through the AVE figures) is not satisfied in this sample – further examination should determine whether such indicators are adequately inter-related

- The discriminant validity evidenced between *Joy* and *Wonder* is questionable – a new sample must be examined to determine if further model re-specification is required

Beyond these areas of small empirical imperfection, the 18-item consumer affect scale developed thus far has withstood rigorous empirical scrutiny, particularly in its higher-order composition. Beyond the substantial evidence of strong content validity, and construct reliability and validity, the conceptual structure of the scale is particularly encouraging as a new addition to consumer affect studies, whilst appearing very suitable in assisting this study to answer its research question in understanding the drivers of consumer innovation acceptance.

Step 4b. Scale confirmation (Sample 3)

It is suggested by Brown (2006, p.124) that "modified solutions should be replicated in independent samples", a condition that Churchill (1979) and DeVellis (2003) also stipulate the necessity of in their scale development procedure. As the previous stage of analysis involved substantial modification and re-specification of the initial measurement model, it is essential that the scale is re-administered to a new, and independent sample. Such a procedure will not only explore any points of empirical concern, but also validate the intriguing results observed in the previous sample. As the factor structure of the measurement model is meticulously analyzed (through two EFAs and a confirmatory factor analysis with significant re-specification), culminating in an encouraging solution demonstrative of acceptable model fit, this third sample is exposed to a second round of CFA. This analysis is undertaken in a manner identical to the CFA conducted on the previous sample (with the exception of the research stimulus, discussed below); thus the specifics of this analysis will not be explained again.

As Sample 2 is collected with a research instrument comprising of all 57 emotion-items, it is essential that a new sample (Sample 3) be collected to examine the refined scale and confirm its validity and generalizability in a new sample. It is the position of this researcher that confidence in the structure and psychometric properties of a new scale cannot be achieved by undertaking CFA across multiple samples derived from a single larger sample. Such a tactic presents substantial content validity and common method variance issues, degrading the validity of the study. Thus, a new and independent sample of data is collected, to re-examine the scale, undertaking a second CFA on the current 18-item scale.

Administering the research instrument:

In acquiring this new sample, a new product stimulus is employed in the research instrument, communicating information about the innovation in a broadcast-style video advert. The product employed in this stimulus is the *MyBotto* inverted bottle holder. The stimulus is a (approximately) 1-minute video sourced directly from *MyBotto* introducing what the product is, what problem it solves, and basic information about using it. Again, this stimulus is employed to expose respondents in a manner typical of an advert or content shared digitally. The stimulus simulates the pre-adoption stage of adoption where consumers are first exposed to a new innovation, and make personal appraisals about it and its acceptability to them. With regards to the questions asked of respondents, they are

again asked, "Please indicate to what extent you feel the following emotions towards the product shown in the stimulus"; however, in this sample, they are only required to make this appraisal for the 18 emotion items of the scale refined thus far.

Data assessment:

Sample characteristics:

The research instrument is administered to a sample of 269, of which 69 respondents are removed due to failure to properly complete the questionnaire. As the questionnaire is again completed online through software that enforces the completion of all items, no missing items are detected. However, some respondents may have not taken the time to read the questions correctly, provided unintelligible responses, or simply are disinterested in completing the questionnaire completely; thus, are removed from the study. Thus, Sample 3 is comprised of 200 respondents, with the socio-demographic characteristics of the sample illustrated in Table 3.

As demonstrated in Table 3, the demographic characteristics of Sample 3 are again relatively comparable to those collected previously and a student sample is again employed (accepted by Horrigan, 2003; Kulviwat et al., 2007; Nasco et al., 2008). Of this sample 46.50% are males, with 87.15% of respondents (who provided their age) 24 years of age or under. In assessing income, 64.00% earn under $15, 000 per annum, with 79.50% earning less than $30,000. This is again not a surprising figure, with 88.00% indicating their occupation as a student. In terms of nationalities, the sample is again quite evenly split with 18.00% Australian born, and a similar amount Indian and Malaysian, with the largest segment (by country of birth) Singaporean (23.00%). Again this sample has been collected across a variety of campuses of an Australian university, hence the demographics are very Australian-Asian focused. In assessing these sample characteristics, it is once again determined unlikely that any demographics play a biasing role in shaping the appraisals made by respondents regarding their experience of affect, when exposed to an innovation prior to adoption.

Item characteristics:

Interpretation of the item frequency statistics for Sample 3 shows some interesting results (see Table 18). Firstly, the means for these figures are quite high. This is perhaps a result of the reduced number

203

of items allowing respondents to better discriminate between the emotions, thus providing a clearer and more accurate response of the intensities in emotions experienced. In this refined scale, the mean emotion scores range from 1.25 (*Sad*) to 5.22 (*Amazed*), again showing a variety of experiences. In this sample, the standard deviations are again quite high, once more revealing that the responses across individual respondents are quite wide and varied. Of these figures, the deviations of the lower scoring items such as *Sad*, *Depressed*, *Nervous*, etc. are very low. This suggests that respondents are much more certain of the experience of such affect thus scoring more consistently (low) across the sample compared to other higher scoring items which are quite varied in their responses. For example, *Astonished* reflects a standard deviation of 2.41, suggesting some respondents experienced this emotion in strong intensity, whilst others with quite low intensity.

Table 18: Item frequency statistics (Sample 3, *n* = 200)

Emotion Item	Mean	Std. Dev.	Emotion Item	Mean	Std. Dev.
Happy	4.56	2.11	Unexcited	2.34	1.63
Thankful	3.70	2.19	Nervous	1.55	0.98
Pleased	4.67	2.02	Panicky	1.57	1.13
Enthusiastic	4.54	2.20	Tense	1.98	1.46
Amazed	5.22	2.25	Miserable	1.38	0.84
Surprised	5.01	2.31	Depressed	1.33	0.73
Astonished	4.25	2.41	Sad	1.25	0.57
Bored	2.07	1.50	Sceptical	3.40	1.94
Unimpressed	2.20	1.41	Suspicious	3.15	1.95

For items such as *Amazed* and *Surprised,* the most common score observed is "7". This indicates that many people scored this emotion very highly. However, as they exhibit only somewhat strong averages (5.22 and 5.01), such affect is also experienced at a lot of lower-intensity scores. This is perhaps due to the slightly subjective and more complex conceptualization of the items compared to the conventional and less semantically subjective emotions, such as *Happy* for example which possessed a higher mean (4.56) despite having a lower mode score of "6". In comparison of semantically similar items, *Sceptical* has a slightly larger average than *Suspicious,* however the item has a much larger mode of 3. This is perhaps indicative of the occurrence that those who did experience *Suspicious* did so with a stronger intensity than those who experienced *Sceptical*. Overall, analysis of Sample 3's emotion item frequencies paints a much clearer picture of this new refined scale, showing very consistent results amongst conceptually related items, with numerical distinction from the much larger previous scale.

Perceived innovativeness:

The level of innovativeness perceived of this new product is again around the desired range of scores for such a study. A mean of 7.89 is indicative of a moderate - high level of innovativeness for the product, and its relatively low standard deviation (SD = 1.74) supports that the consistency in responses is quite strong, with a low level of deviations observed. Interestingly though, the sample exhibits a mode of "9". This high mode in light of its lower mean score suggests that a relatively sizeable segment of respondents may have scored the product quite lowly for its level of innovativeness. However, based upon the minimum score of "2", every respondent did perceive it to have some amount of innovativeness. Such a finding is quite encouraging though, as it suggests that the product elicited both high and low perceptions of innovativeness, positioning it suitably for such a study, as the sample demonstrates some degree of heterogeneity amongst its strong consistency. This suggests responses are not coming from individuals who all perceive the product similarly, thus the emotion items have captured a variety of responses. Finally, almost two thirds of respondents scored the product above a 7 out of 10 for its level of innovativeness, further supporting its perceived newness and appropriateness to this study.

Model re-specification

As the measure demonstrated some concerns regarding it's validity (particularly the convergent validity of *Cynicism* and *Wonder*, and the discriminant validity of *Joy* and *Wonder*), it appears logical and necessary to re-examine such validity in this new sample before proceeding with further assessment. This is undertaken as a preliminary means, so to determine if any further model re-specification is required. Due to the likely "sample specific" nature of the discovery of suggested co-varied error terms of *Astonished* and *Surprised* in Sample 2 (particularly in light of its 57-item composition), these variables will be freely estimated in this new sample, allowing the data to dictate whether this covariance should remain in further applications. Additionally the co-variance between second-order constructs is also freely estimated with a similar mentality guiding this decision. As Sample 3's data is again non-normally distributed (as anticipated due its continuum style of scale measurement), bootstrapping (500 iterations) is employed, with all parameter estimates discussed from herein bootstrap-adjusted (unless noted otherwise).

Convergent and discriminant validity:

In an attempt to address the issues explicated in the previous CFA regarding convergent and discriminant validity (particularly the lack of empirical distinction between *Joy* and *Wonder,* and the convergent validity of *Cynicism* and *Wonder*), assessments of the validity of the scale in this new sample are examined. Should such validity issues present themselves again, this scale will require further re-specification. However, if validity is proven, evidence will be provided that the clusters of basic emotions are in agreement with measures of the same construct, whilst being conceptually distinct from others measures (Oh, 2005; Campbell and Fiske, 1959).

Convergent validity:

Convergent validity provides "evidence that different indicators of theoretically or overlapping constructs are strongly interrelated (Brown, 2006; p. 2)". Thus, by determining that those emotion items that should be related are in fact related, such validity is confirmed. For the 18-item affect measure in Sample 3, a correlation of .349 ($p > .001$) (bootstrap adjusted) is observed between the two second-order factors. Presenting itself as a sizeable correlation between second-order constructs, such a figure is strong enough to suggest that some relationship is occurring between the first-order constructs in this sample, yet not so large that multicollinearity concerns are raised.

Table 19: Convergent validity estimates (Sample 3, *n* = 200)

1st-Order 2nd-Order	Joy Pos.	Wonder Pos.	Apathy Pos.	Apathy Neg.	Melanch. Neg.	Trepidat. Neg.	Cynicism Neg.
F.L.	1.000	1.000	-.285[***]	.864[**]	.904[**]	1.576[***]	1.000
S.R.W.	1.019	.899	-.495	.422	.799	.951	.407
A.V.E.	.661	.708	.486	.486	.504	.547	.508

Estimates are bootstrap estimates
** p > .01
*** p > .001

Meuleners et al. (2003) outlines the relationship between endogenous (first-order) and exogenous second-order factor solutions must also demonstrate significance to achieve convergent validity, thus these relationships are scrutinized. With the aforementioned higher-order correlation taken into account, the relationships exhibited between the first and second-order constructs must all demonstrate significance to achieve convergent validity. As exhibited in Table 19, this is the case with all unconstrained regression pathways statistically significant to at least *p* = .01.

Analogous to the analysis of higher-order regression relationships, a scale's items must "account for a relative substantial proportion of the total variance in the data" (O'Leary-Kelly and Vokurka, 1998; p.402). Thus, convergent validity is also examined through observation of a construct's AVE, with a figure of .500 set as an acceptable cut-off criterion (Danelon and Salay, 2012; Hair et al., 2009). In this sample, the AVE of the six first-order constructs (bootstrap adjusted) are as follows: *Joy*: .661, *Wonder*: .708, *Apathy*: .486, *Melancholy:* .504, *Trepidation:* .547, and *Cynicism:* .508. In addressing the AVE concerns of the previous sample, both *Wonder* and *Cynicism* satisfied the AVE criterion for validity, and thus are supported for retention in the measurement model. However, in spite of these encouraging results, AVE concern does exist in this sample for the *Apathy* factor, which despite being very close to sufficient (.486) did not quite meet the AVE criterion. However, as this factor is again statistically significantly impacted by both its respective higher-order factors (with *Positive Affect* again impacting inversely on the construct*)*, and as no convergent validity issues are raised in the previous sample, the *Apathy* construct is retained in the final measurement model, and no model re-specifications are made to satisfy convergent validity.

Discriminant validity:

As the previous sample revealed discriminant validity concerns for the *Joy - Wonder* relationship, the entire scale is subject to further empirical scrutiny, with extra attention directed towards these constructs. In accordance with the previous sample, discriminant validity is assessed through the chi-square difference test, the confidence interval test, and the average variance extracted (AVE) test, with the results of each presented in Table 20.

Through chi-square assessments, discriminant validity issues are identified in the *Joy* and *Cynicism* *(x^2 = 0.578, df = 1)* relationship. However, for this relationship the confidence interval and AVE methods did not confirm such validity issues, and as no concerns are raised for the discriminant validity of these constructs in the previous sample, no further specification is taken. In examining the confidence interval procedure, several concerns are flagged. Firstly, the *Joy – Wonder* relationship is again precarious (but supported as discriminant nonetheless), with this relationship close to violating the boundary, with an upper estimate of .982. Secondly, the upper bound confidence interval of .988 for the *Melancholy – Trepidation* relationship is also precariously close to being identified as a concern. From an empirical perspective, the reason this figure is so inflated is attributable to the large

standard error of the correlation, and this is likely to be sample specific. Therefore, as the bootstrap-adjusted correlation estimate of .739 bares no cause for concern, this relationship is not identified as alarming.

Table 20: Assessments of discriminant validity (Sample 3, *n* = 200)

| Constructs | x^2 diff [#] | Confidence Intervals[*] | | | | AVE Method[$] | | |
		r	Lower	Upper	*t*-value	AVE	SV	AVE > SV
Joy Wonder	x2 =82.192	.918	.861	.982	.001	.661 .708	.836	No
Joy Apathy	x2 =63.103	-.344	-.476	-.160	.004	.660 .488	.114	Yes
Joy Melancholy	x2 =44.373	.200	.071	.367	.003	.660 .533	.039	Yes
Joy Trepidation	x2 =6.738	.361	.219	.514	.002	.661 .551	.124	Yes
Joy Cynicism	x2 =0.578	.346	.158	.501	.006	.660 .576	.118	Yes
Wonder Apathy	x2 = 62.88	-.340	-.501	-.171	.003	.711 .488	.114	Yes
Wonder Melancholy	x2 = 56.705	.094	-.055	.226	.218	.711 .536	.009	Yes
Wonder Trepidation	x2 = 12.384	.276	.137	.421	.003	.710 .551	.072	Yes
Wonder Cynicism	x2 =3.959	.508	.324	.706	.002	.705 .515	.225	Yes
Apathy Melancholy	x2 = 60.197	.329	.173	.522	.004	.488 .528	.110	Yes
Apathy Trepidation	x2 = 40.812	.154	-.006	.36	.069	.488 .551	.026	Yes
Apathy Cynicism	x2 = 14.767	Unable to calculate[%]				-	.081	-
Melancholy Trepidation	x2 =46.792	.739	.513	.988	.010	.502 .644	.589	No
Melancholy Cynicism	x2 = 57.309	.141	.037	.293	.020	.531 .610	.022	Yes
Trepidation Cynicism	x2 = 9.516	.410	.259	.588	.002	.550 .528	.163	Yes

[*] Estimates are bootstrap calculated (95% bias – corrected confidence interval)
[#] All chi-square difference tests possess 1 *df*
[$] Estimates are bootstrap estimates
[%] Unable to calculate due to *Sceptical'*s large negative variance

In addressing the AVE assessments, concerns are raised for the discriminant validity of *Joy - Wonder*, and *Melancholy – Trepidation,* as these constructs are incapable of explaining more variance than that which is shared between them (due to the strong correlation between the two constructs). With regards to the *Joy – Wonder* relationship, the AVE of the two constructs is again less than the variance shared between the constructs; this is a recurring concern as observed in the previous sample. As a result, it is acknowledged that model re-specification should be undertaken to rectify this concern. Validity issues are also delineated through the AVE test for the *Melancholy - Trepidation* relationship. However, such issues are statistically mild (the confidence interval and AVE tests are only negligibly alarming), and are not identified in the previous CFA sample. Evidently, undertaking re-specification in light of this minor concern could represent taking action based upon a statistical anomaly or sample specific variance, and thus would be deemed irresponsible. In light of this, no re-specification is undertaken for these constructs.

Model re-specification:

Having examined the areas of empirical concern identified in the previous sample, the scale is subjected to further model re-specification in an attempt to address the recurring discriminant validity issues identified between the *Joy – Wonder* relationship. To be able to confirm the validity of the scale, such re-specification must be undertaken. To achieve improved validity (pertaining specifically to these two first-order constructs) removal of an item from the *Joy* factor is employed. This is a chosen strategy as the major concern for the relationship between the two variables is the substantial amount of variance shared between the 4-item *Joy* construct and the 3-item *Wonder* construct. In consideration of this, and the importance of parsimony of the scale, removal of an item from *Joy* (as opposed to *Wonder*) allows for the retention of a three-item factor, and may contribute to reducing the variance shared between the two constructs. Omission of *Enthusiastic* is undertaken, as this item explained the least amount of variance in the data in the previous sample (as evidence by its lowest SMC figure of .580 of the *Joy* items). Additionally, from a conceptual perspective, the item appears to have the least in common with its corresponding affect; thus the decision is made to remove *Enthusiastic* from the *Joy* construct.

Convergent validity:

Having re-specified the model with the removal of *Enthusiastic*, the convergent validity of the 17-item measure is now assessed. As such validity seeks to establish that theoretically related indicators are

strongly inter-related (Brown, 2006), the moderate and statistically significant (bootstrap adjusted) higher-order correlation of .349 provides evidence of such an empirical association. Herein, convergent validity of the scale is further confirmed through the statistical significance of first-order factor loadings on higher-order constructs, and as exhibited in Table 21, such relationships are all statistically significant.

Table 21: Convergent validity estimates – respecified 17 item scale (Sample 3, *n* = 200)

1st-Order 2nd-Order	Joy Pos.	Wonder Pos.	Apathy Pos.	Apathy Neg.	Melanch. Neg.	Trepidat. Neg.	Cynicism Neg.
F.L.	1.000	1.000	-.290***	.864**	.890*	1.542***	1.000
S.R.W.	1.004	.879	-.510	.434	.800	.947	.412
A.V.E.	.678	.708	.486	.486	.504	.547	.508

Estimates are bootstrap estimates
* $p > .05$
*** $p > .001$

To further substantiate convergent validity, the proportion of variance explained within each factor is assessed. In examining the AVE figures for the scale, only the re-specified *Joy* factor exhibits a change in AVE values as a result of removal of its *Enthusiastic* indicator. By re-specifying the factor, the construct's AVE has improved from .661 to .678. This represents a 17% improvement in the variance explained in the factor, and provides additional support for the convergent validity of this factor and removal of the item.

Discriminant validity:

Having established convergent validity for the 17-item measurement model, further examination is undertaken to assess the discriminant validity of the new 3-item *Joy* factor (see Table 22), using the three previously employed validity tests. As no re-specification has occurred on the remaining factors, such validity assessments are superfluous as they are identical to above. Two violations are identified through such examination. Firstly, the *Joy – Wonder* interaction failed the AVE test, as the average variance extracted for both constructs did not exceed the shared variance between them. However, the re-specification of the construct has improved its discriminant validity with regards to *Wonder* from an AVE test perspective. In support for the validity of the newly specified constructs, both the chi-square difference and confidence interval tests are satisfied; thus, in light of these two satisfied tests, and the fact that the one violated test is only marginally so, the *Joy* and *Wonder* constructs are deemed discriminant. The second observed violation pertains to the chi-square difference test for the *Joy –*

Cynicism relationship that does not exceed the required minimum chi-square difference of 3.84. However, as the other two alternative tests are overwhelmingly satisfied, these constructs are also deemed discriminant, and the overall discriminant validity of the 17-item solution is considered adequate. In light of the model specification undertaken for the new empirical structure of the 17-item scale, both convergent and discriminant validity are supported, accommodating its further empirical scrutiny.

Table 22: Assessments of discriminant validity – respecified 17 item scale (Sample 3, *n* = 200)

| Constructs | x^2 diff [#] | Confidence Intervals[*] | | | | AVE Method[$] | | |
		r	Lower	Upper	*t*-value	AVE	SV	AVE > SV
Joy Wonder	x2 = 72.900	.880	.816	.943	.002	.679 .709	.769	No
Joy Apathy	x2 = 60.447	-.335	-.464	-.161	.005	.679 .488	.108	Yes
Joy Melancholy	x2 = 43.447	.193	.047	.363	.012	.679 .532	.037	Yes
Joy Trepidation	x2 = 11.173	.358	.205	.515	.002	.679 .550	.122	Yes
Joy Cynicism	x2 = 0.253	.356	.162	.508	.005	.679 .564	.123	Yes

[*] Estimates are bootstrap calculated (95% bias – corrected confidence interval)
[#] All chi-square difference tests possess 1 *df*
[$] Estimates are bootstrap estimates

Scale assessment:

CFA assessment of common method variance:

Confirmatory factor analysis is again employed to assess the level of CMV rife in this third sample. In conducting *Harman's Single-Factor Test* in this CFA context, the results ($x^2 = 740.128$ (*df* = 119), CFI = .584, TLI = .525, RMSEA = .162 (LO =151 HI = .173) PCLOSE = .000, SRMR = .1664, AIC = 808.128) suggest the single unmeasured factor solution is a very poor fit to the data. Such is a similar finding to Sample 2 and suggests CMV is not having a violating factor in this sample. To further scrutinize potential CMV in this scale, the *Unmeasured Latent Factor Comparison* method is employed. However, due to the data's relationships with the CFA solution, the iteration limit is reached for the solution before a local minimum is found, and the results provided by AMOS are "incorrect". A potential solution to this problem would involve re-specifying the solution so AMOS can compute

it, however, this would involve modifying model parameters, and would therefore not be adequately assessing the scale as it is intended. As further scrutiny is unachievable, confidence must be placed in the procedural precautions taken throughout data collection and results of *Harman's Single-Factor Test* in discerning CMV is not a violating issue in this sample.

Determining adequate sample size:

To ensure rigorous estimate of sample size adequacy, this study will assess the number of sample observations required to successfully capture the appropriate power (.80, as detailed by Brown, 2006; Muthen and Muthen, 2002) through both Kim's (2005) minimum sample size estimate, and Westland's (2010) formula. In employing these two formulas for Sample 3, the sample size advised (based on an indicator to latent variable ratio of 2.833 – 17 indicators to 6 latent factors) by Westland (2010) is 226. Kim's (2005) more rigorous formula provides a sample size estimate of 103, with the models RMSEA figure of .061 and 112 degrees of freedom. Again these two figures are relatively disparate, and despite its inherent complexity and large degrees of freedom, as the solution is very good-fitting from an RMSEA perspective the latter formula is quite flattering. However, even if one is to assume an average of these two figures (164), the sample collected ($n = 200$) is still considered adequate for the estimate of model parameters relative to the population with the necessary amount of power.

Defining the metric of the higher-order solution:

To assess whether the residuals of the scale should be exposed to equality constraints in Sample 3, the variance of the first-order constructs' residual terms (r1 – *Joy*, r2 – *Wonder*, r3 – *Apathy*, r4 – *Melancholy*, r5 – *Trepidation*, r6 – *Cynicism*) are estimated (see Table 23). To maintain consistency with the previous sample, the regression pathways for first-order constructs *Joy*, *Wonder* and *Cynicism* are constrained to unity as marker variables.

Table 23: Residual variance estimates (Sample 3, *n* = 200)

Parameter	Estimate	S.E.	CR.	Sig	r1	r2	r3	r4	r5	r6
r1	-.031	.373	.083	.934	0					
r2	1.116	.589	1.896	.058	1.250	0				
r3	.805	.256	3.145	***	2.136	-.405	0			
r4	.134	.091	1.473	.141	.566	-1.588	-3.429	0		
r5	.071	.148	.480	.631	.393	-1.663	-3.267	-.437	0	
r6	1.550	.302	5.132	***	3.670	.768	2.195	5.156	4.958	0

Estimates are bootstrapped estimates
* = .05 > *p* < .001
*** = *p* < .001

212

Of the endogenous (unobserved) latent variable residuals (r1 – r6), half of these residuals (r1, r2, r4 and r5) are statistically non-significant. However, and more importantly, none of the *variance* of these residuals is equivalent to another residual. This suggests that when examining the spread of the error in capturing the first-order constructs, each latent factor is performing dissimilarly. For example, in comparing the differences between r1 (-.031) and r6 (1.550), the discrepancy is quite dramatic, thus constraining the variances of such residuals to be equal would be irresponsible.

Further support for not constraining the variance of these residuals (and thus constraining indicator factor loadings as marker variables) is provided through examination of the critical ratios (the difference in parameters divided by the standard error in estimating this discrepancy) for the pair-wise differences amongst parameters. These values represent a statistic for testing the hypothesis that two parameters (residuals) are equal in the population. Examination of Table 23 demonstrates that of the relationships specified, only half (8 of 16) of the interactions are statistically non-significant, thus suggesting only a few of these residual variances are similar, with the pair-wise relationships convincingly dissimilar. Herein, the data has again indicated that the error in capturing data related to the first-order constructs is not consistent across each of the constructs, providing further support for the methodology of freely estimating residual terms. Therefore, equality constraints should not be imposed on residuals (through their variance terms), and employment of the same marker variable approach to that implemented a priori is believed to be a prudent solution, as modifying this scale as this stage of analysis may be problematic.

Covarying second-order factors:

Just as the preceding sample is subject to investigation pertaining to the (freely constrained) covarying of the second-order constructs, so too is Sample 3. Previously, assessing the scale in Sample 2 revealed the higher-order constructs of the measure are not statistically correlated. It is believed this could be due to the large number of emotion items examined (57) preventing the occurrence of any conclusive patterning of relationships between the two higher-order variables. However, in this new sample, the pool of items examined is substantially smaller (18), thus the likelihood of a relationship occurring between the two opposingly valenced constructs is enhanced, and when examining this covariance (bootstrap-adjusted), the figure is sizable and statistically significant (covariance = .389, $p > .05$; r = .359, $p > .001$). In interpreting this statistic from a conceptual perspective, one must keep in mind

that the second-order factors of this scale are merely unobserved, latent constructs; thus a significant covariance purely shows that for this sample as respondent's experience of *Positive Affect* increases, so too does the experience of *Negative Affect*. Such statistics cannot conclude that one variable is causing the other though.

As one may conclude that higher-order constructs are essentially explaining the pattern of relationships between the first-order constructs, empirical support of the second-order *Positive Affect* construct verifies that rises in *Joy* occur with rises in *Wonder*, falls in *Apathy,* and vice versa. Therefore, as the covariance between the two higher-order constructs is statistically significant, it is observed that the *Negative Affect's* first-order constructs share a relationship with the *Positive Affect* first-order constructs. This may suggests that a relationship (and in this case, one positive in nature) is shared between *Joy* and *Melancholy*. Whilst this seems conceptually irrational, perhaps this could be explained by the idea that respondents who experience one emotion are more likely to experience, or at least score higher, other emotions, even if they are of opposing valence. Thus, in light of the strong and statistically significant correlation (and covariance) observed between the two second-order constructs, any further applications of this solution are employed with co-varied second-order constructs. Furthermore, as the number and selection of items examined in Sample 3 are far more judicious than the previous samples, it is believed the findings pertaining to the covarying of higher-order constructs are much more dependable in this new sample.

Model fit:

In assessing the empirical fit of the model to the data, the second-order factor solution is determined to fit the new sample very well, as indicated by the pleasing model fit indices (x^2 = 195.536, df = 112, x^2/df = 1.746; GFI = .895, AGFI = .856; CFI = .944, TLI = .932; RMSEA = .061 [LO90 = .047, HI90 = .075] PCLOSE = .098; SRMR = .080; AIC = 277.536). Encouragingly, each of these indices exceeds the required cut-offs and criterions, with such results providing support for fit of the data to the hypothesized model.

Parameter estimates:

As the adequacy of the re-specified scale is supported and again found demonstrative of acceptable empirical composition and model fit, it is necessary to assess the estimates of the model's parameters.

A procedure identical to that undertaken in the previous sample is again followed with particular attention drawn to the employment of bootstrapped adjustments in light of the non-normal distribution of the data. The estimates of the newly re-specified 17-item scale are presented in Table 24, with the bootstrapped adjusted estimates yet again painting a much more accurate picture, whilst revealing some important insights into the importance of bootstrapping when dealing with non-normal data.

As exhibited in the grey columns, several of the parameter estimates are greatly affected by bootstrapping. This is important to note, as many of the empirical relationships would be dramatically different had bootstrapped adjustments not been employed. For example, in non-bootstrapped estimates, the variance explained in *Melancholy* (.056) and *Miserable* (.047) are substantially underestimated, whilst *Negative Affect's* factor loading on *Apathy* (.058), *Trepidation* (.107), and

Table 24: Parameter estimates (Sample 3, *n* = 200)[%]

Variable	Variable	F.L.	Δ	S.E.	Δ	C.R.	Sig	S.R.W.	Δ	S.M.	Δ
Joy	Pos. Aff.	1.00	-	-	-	-	-	1.004	.00	1.011	-.01
Wonder	Pos. Aff.	1.00	-	-	-	-	-	.879	.00	.774	.01
Apathy	Pos. Aff.	-.290	.01	.068	.00	4.265	**	-.510	.01	-	-.01
Apathy	Neg. Aff.	.864	.06	.369	.11	2.341	.01	.434	.00	.305	.02
Trepidation	Neg. Aff.	1.54	.11	.453	.07	3.404	**	.947	.01	.907	.02
Melancholy	Neg. Aff.	.890	.09	.412	.22	2.160	.03	.800	.03	.652	.06
Cynicism	Neg. Aff.	1.00	-	-	-	-	-	.412	-.01	.179	.01
Happy	Joy	1.00	-	-	-	-	-	.893	.00	.797	.00
Thankful	Joy	.896	-.0	.057	-.0	15.71	**	.772	.00	.597	.00
Pleased	Joy	.856	.00	.061.	.00	14.03	**	.800	.00	.641	.00
Amazed	Wonder	.889	.01	.104	.00	8.548	**	.846	.00	.717	.00
Surprised	Wonder	.928	.01	.099	-.0	9.374	**	.863	.00	.746	.00
Astonished	Wonder	.912	.01	.095	-.0	9.600	**	.813	.00	.662	.00
Bored	Apathy	1.13	.02	.174	.02	6.500	**	.803	.00	.648	.00
Unimpress.	Apathy	.812	.04	.195	.08	4.164	**	.605	-.01	.376	.02
Unexcited	Apathy	1.00	-	-	-	-	-	.656	-.01	.436	-.01
Miserable	Melan.	.946	.11	.381	.28	2.483	.01	.623	.03	.398	.05
Sad	Melan.	.656	-.0	.096	.02	6.833	**	.670	-.03	.462	-.03
Depressed	Melan.	1.00	-	-	-	-	-	.800	-.02	.651	-02
Tense	Trep.	1.00	-	-	-	-	-	.599	.00	.363	.00
Nervous	Trep.	.936	.02	.140	.03	6.686	**	.823	.00	.680	.00
Panicky	Trep.	1.01	.03	.166	.04	6.072	**	.771	.00	.598	.01
Suspicious	Cynic.	1.00	-	-	-	-	-	.707	-.01	.503	-.01
Sceptical	Cynic.	1.00	-	-	-	-	-	.714	.00	.512	.00

*** = $p < .001$

[%]All figures are bootstrap adjusted (500 iterations), with grey columns indicating the discrepancy between bootstrapped and non-bootstrapped estimates

Melancholy (.091) are also heavily underestimated, with *Melancholy's* factor loading on *Miserable* (.113) emaciated. What is more alarming however, is the impact of bootstrapping on standard errors (see endogenous variables *Apathy*, *Melancholy*, *Unimpressed* and *Miserable*). For such variables, the non-bootstrapped standard error estimates are hugely underestimated, and likely to have had a profound different (and misleading) impact on empirical outcomes should they not be correctly accounted for.

Factor loadings:

In examining the 17-item scale's factor loadings in this new sample, it is yet again exhibited, from a regression perspective (see Table 24), that all of the variables load onto their respective factors with strong statistical significance. Whilst a couple of these may be less significant than the previous sample (i.e. *Negative Affect's* impact on *Apathy* and *Melancholy*), they are all completely adequate and support the factor composition of the solution. Once again, the first-order *Apathy* construct loads significantly onto both the *Positive Affect* (-.290) and *Negative Affect* (.864) second-order constructs, with the latter exhibiting a much stronger influence despite exhibiting a statistically less significant (but still adequate) relationship. This is an encouraging result that supports the insightful discovery in the previous sample that both second-order constructs impact *Apathy*, and more interestingly, that the experience of *Apathy* can be reduced by *Positive Affect*. Thus, confirmation of this discovery in a new and independent sample provides sufficient evidence to support *Apathy*'s unique and profound role in consumer's affective appraisals of an innovation. Interestingly, *Trepidation*'s factor loading on the *Negative Affect* construct is very large (1.542) suggesting a very strong experience of this latent construct in the event of a generally negative affective state.

In examining the exogenous first-order constructs, the size of the factor loadings of each of the variables are all large and relatively similar, ranging from .812 to 1.131, with the exception of *Melancholy's* loading on *Sad*, which is substantially smaller at .656. This may suggest that in terms of *Melancholy* emotions, *Sad* may only be experienced at stronger intensities, thus requiring more of an overall experience of *Melancholy* to enhance its elicitation. Overall though, these figures reveal strong empirical relationships between the first-order constructs and their respective emotion indicators, providing strong support for the structure solution.

The standardized regression weights of the scale are examined, and as exhibited in Table 24, the vast majority of these loadings are again sufficient (> .500). Once again, the dual standardized loadings of *Apathy* are questionable, revealing themselves in a low SMC figure of .305. However, as is explained in the previous sample, as *Apathy* is impacted by two second-order constructs, its insufficient standardized loading is overlooked in light of its statistically significant factor loadings and empirical importance to the scale. Furthermore, the average variance explained in the *Apathy* construct's emotion items (.487) is adequate, thus suggesting the experience of *Apathy* has not diminished the amount of variance explained in its emotion indicators.

Surprisingly, the standardized regression weight of *Joy* is very large, just exceeding 1 (1.004)[5]. Whilst this does make some interpretation difficult, further analysis is not greatly affected. However, concern does exist for *Negative Affect's* standardized loading on *Cynicism* (.412), which is insufficient, and exhibits a very low amount of variance explained in the construct (.179). However, in the absence of any re-specification suggestions from modification indices (correlations or pathways), the very adequate variance explained by its associated indicator variables, and the strength of the standardized loading in the previous sample, such a findings is likely a sample specific artefact of a two-item construct. Furthermore, it may not be a concern that the proportion of variance explained in the first-order construct is not huge, as the second-order construct may have strong direct effects (not mediated through the first-order construct) on the emotion items (indicator variables). Thus, reassurance of the importance of *Cynicism* in the scale will be assessed in the latter "indirect effects" section of this chapter. The emotion item *Tense* also exhibits a slightly questionable standardized regression weight (.599), resulting in an inadequate SMC figure (.363). However, such a result is most likely a sample specific artefact, and as the previous sample sufficiently explained variance in the emotion item (SMC = .547), and it is not grossly unexplained in this sample, no further concern is raised.

In light of the complex and extremely subjective nature of affective appraisals, and the latent and unobserved composition of first and second-order constructs, it is unlikely that every variable in such a complex solution will be able to sufficiently explain a large enough proportion of variance across every sample the scale is administered to. Thus, in light of the robust satisfaction of content and construct validity, not to mention the strong empirical and theoretical support for the conceptualization of such affect, as long as the scales evidence of strong model fit, good internal consistency, adequate

and significant factor loadings, and acceptable proportions of variance explained across the vast majority of samples and variables, the solution can be considered acceptable. Sample-specific artifacts will always exist (although this scale is developed to minimize the occurrence of such), and as previously mentioned, the indirect-effects and variance explained by first and second-order constructs can be examined to scrutinize any potentially localized areas of concern.

Indirect effects of second-order constructs:

Having confirmed a well-fitting solution, the "Schmid-Leiman Transformation" methodology (Schmid and Leiman, 1957; Brown, 2006) is again employed to scrutinize the direct and indirect effects of the parameter estimates (see Tables 25 and 26) in a methodology identical to that of the previous sample.

Standardized factor loadings:

Having examined the parameter estimates of Sample 3, both the direct and indirect factor loadings of first and second-order constructs are now delineated. Such scrutiny again allows for a much deeper insight into the empirical relationships occurring, with Tables 25 and 26 illuminating some intriguing results. As in the previous sample, for both the *Positive Affect* and *Negative Affect* constructs, all standardized direct and indirect effects (as obtained through two-sided bias-corrected confidence intervals) are significantly different from zero, providing evidence for the power of their effects. As exhibited in column two, the mean of the standardized factor loadings of the first-order constructs on the emotion items (otherwise delineated as the mediated effect of the second-order construct through the first-order construct onto the indicator variables) are strong for both *Positive Affect* (mean = .771, SD = .098) and *Negative Affect* (mean = .685, SD = .094), with their near identical standard deviation figures suggesting the each has a closely clustered set of standardized factor loadings. In assessing column 3, the direct loading of the first-order construct on the second-order construct demonstrates a variety of effects. Firstly, it is interpreted that the impact of *Positive Affect* (mean = .807) is larger than that of *Negative Affect* (mean = .670) with respect to their first-order factors (considering only the size of the loading irrespective of its negative or positive nature).

The fourth columns once again portray the direct effect of the second-order constructs on the emotion items, outlining that in this sample, the *Positive Affect* second-order construct (mean = .635) has a

Table 25: *Positive Affect's* indirect effects (Sample 3, *n* = 200)[*]

Indicator Variable	FACTOR LOADINGS					VARIANCE EXPLAINED			
	(1)[#]	(2)	(3)	(4)[&]	(5)[$]	(6)	(7)	(8)	(9)
Unexcited	.654		-.346	.849	.555	30.82%	11.95%	42.77%	57.23%
Unimpres.	.538	-.529	-.284	.849	.457	20.86%	8.08%	28.94%	71.06%
Bored	.823		-.435	.849	.699	48.81%	18.92%	67.73%	32.27%
Amazed	.826		.714	.503	.415	17.24%	50.99%	68.23%	31.77%
Surprised	.854	.865	.738	.503	.429	18.43%	54.51%	72.93%	27.07%
Astonished	.801		.692	.503	.403	16.21%	47.95%	64.16%	35.84%
Happy	.887		.910	-	-	-	82.73%	-	-
Thankful	.766	1.026 @	.786	-	-	-	61.77%	-	-
Pleased	.794		.814	.	-	-	66.28%	-	-
Mean	.771	.807	.635	.676	.493	25.40%	44.80%	57.46 %	42.54%

(1) Mediated, (2) 1st Ord. - 2nd Ord, (3) Indicator - 2nd Order, (4) √Uniqueness, (5) Residualized 1st order, (6) Variance explain in indicator by 1st order, (7) Variance explain in indicator by 2nd order, (8) Total variance explained, (9) Residual variance

[*] All direct and indirect standardized loadings are statistically different from zero and mid-point of bias-corrected bootstrap confidence intervals

Indicator – 1st Order factor loadings represent the factor loading carried from the second-order construct through to the indicator variable

&Uniqueness represents the proportion of variance in the DV not explained by the IV

$ Residualized factor loadings represent the unique contribution of the first-order construct to the indicator variable

@As the 1st Order – 2nd Order factor loading for *Joy* exceeds 1, a uniqueness figure cannot be calculated and further 1st Order variance is not estimated

Table 26: *Negative Affect's* indirect effects (Sample 3, *n* = 200)[*]

Indicator Variable	FACTOR LOADINGS					VARIANCE EXPLAINED			
	(1)[#]	(2)	(3)	(4)[&]	(5)[$]	(6)	(7)	(8)	(9)
Sceptical	.701	.445	.312	.896	.628	39.43%	9.71%	49.14%	50.86%
Suspicious	.697		.310	.896	.624	38.98%	9.60%	48.58%	51.42%
Tense	.611		.567	.374	.228	5.22%	32.12%	37.33%	62.67%
Panicky	.760	.928	.704	.374	.284	8.06%	49.62%	57.68%	42.32%
Nervous	.797		.739	.374	.298	8.87%	54.58%	63.44%	36.56%
Depressed	.752		.592	.616	.463	21.48%	35.07%	56.55%	43.45%
Sad	.641	.788	.505	.616	.395	15.61%	25.48%	41.09%	58.91%
Miserable	.559		.440	.616	.345	11.87%	19.38%	31.25%	68.75%
Unexcited	.654		.291	.895	.586	34.28%	8.49%	42.77%	57.23%
Unimpressed	.538	.446	.240	.895	.482	23.20%	5.74%	28.94%	71.06%
Bored	.823		.367	.895	.737	54.29%	13.44%	67.73%	32.27%
Mean	.685	.670	.461	.677	.461	23.75%	23.93%	47.62%	52.32%

(1) Mediated, (2) 1st Ord. - 2nd Ord, (3) Indicator - 2nd Order, (4) √Uniqueness, (5) Residualized 1st order, (6) Variance explain in indicator by 1st order, (7) Variance explain in indicator by 2nd order, (8) Total variance explained, (9) Residual variance

[*]All direct and indirect standardized loadings are statistically different from zero and mid-point of bias-corrected bootstrap confidence intervals

Indicator – 1st Order factor loadings represent the factor loading carried from the second-order construct through to the indicator variable

&Uniqueness represents the proportion of variance in the DV not explained by the IV

$ Residualized factor loadings represent the unique contribution of the first-order construct to the indicator variable

marginally smaller influence on its relative emotion items than the *Negative Affect (*mean = .670*)* construct. This finding is distinct from the previous sample where *Positive Affect* (mean = .587) had a much stronger direct impact than *Negative Affect* (mean = .497), and may be attributed to the smaller pool of items having a more balanced outcome across affective states. Yet again, the direct influence of *Positive Affect* on the *Apathy* emotion items (mean = -.355) are negative in nature (providing additional support for this unique relationship) and on average larger than the impact of the negative affective state (mean = .299). This substantiates the finding from the previous sample that marketers may be able to reduce a substantial proportion of the intensity of experience of these three negative, apathetic emotions by increasing the general positive affective state as opposed to trying to reduce through a general negative affect state; an interesting discovery. The individual emotions comprising *Trepidation* (mean = .670), *Wonder* (mean = .715) and *Joy* (mean = .837) on average exhibit very strong direct effects from their second-order constructs, whilst the standardized factor loadings of *Melancholy'*s item's on *Negative Affect* are only moderate in size (mean = .512), with *Cynicism's* item's even smaller (mean = .311).

Upon assessment of the residualized factor loadings (which represent the unique, direct effect of a first-order construct on an indicator - see columns 6), the unique contribution made is incalculable for the *Joy* items as a result of its 1+ first-order factor loading. When assessing other variables, the emotion items of *Apathy* (mean = .586) and *Cynicism* (mean = .626) are impacted substantially more by their first-order factor than their second-order factor. This suggests that in this sample, such affect is more influenced by the experience of their more specific latent basic emotions (as demonstrated by their residualized factor loadings) than a general affective state. This could be explained by the assertion that these emotions are more complex, unique, and perhaps more conceptually ambiguous for consumers, hence they need to experience a specific type of affect to feel these emotions. For the other emotion items, the unique contribution of their first-order constructs is not as substantial as the second-order construct's, again suggesting these emotions may be more effectively influenced through a general affective state as opposed to more a specific basic emotion latent construct.

Variance explained:

Having assessed both the direct and indirect factor loadings within the scale, assessments of the variance explained within its endogenous variables is undertaken. In employing such scrutiny, the seventh column of Tables 25 and 26 delineate findings in line with that of the factor loadings,

suggesting that in this second CFA sample, variance in the data of the individual *Apathy* emotions, both in a positive sense (mean – 33.50%) and a negative sense (mean = 37.26%), is explained disproportionately by their first-order construct (as opposed to their second-order constructs). This is the most true for *Bored* whose variance is explained dramatically more by its first order construct (*Positive Affect* = 48.81%, *Negative Affect* = 54.29%) than its second-order constructs. Such a finding suggests that for this emotion, the latent basic emotion of *Apath*y is more responsible for variance in the emotion scoring than a more general affective state. A similar finding is revealed for *Sceptical* and *Suspicious*, of which an average of 39.21% of its variance is explained by the first-order *Cynicism* construct, with the second-order *Negative Affect* only explaining an average of 9.66%. On the other hand, emotion items such as those of the first-order constructs *Wonder* (mean of 51.15%), *Trepidation* (mean of 45.44%), and *Joy* (mean of 70.26%), are accounted for much more by their general second-order affective states. Alternatively, *Melancholy's* items have variance explained in relatively equal measures by its first (mean of 16.32%) and second-order constructs (mean of 26.64%), suggesting both the general emotional state and the more specific experience of melancholy create the experience of its emotions.

From a general valenced perspective, in the *Positive Affect* items substantially more variance is explained by the second-order constructs (44.80%) than the first-order (25.40%). This suggests, as mentioned above, that for consumers these positive emotions are accounted for more by a general positive emotional state than a specific basic emotion (with the exception of *Apathy* emotions). Perhaps for such emotions, the general positive affective state is more transferable across the entire positive emotion range? Maybe overall feelings of positivity towards an innovation favourably affect other positive emotions; hence the strong support for a second-order construct and the large variance explained by it? Irrespectively, when examining negatively valenced affect, the variance explained between first and second-order constructs is comparable, suggesting what is observed in the data can be attributed to a general negative affective state just as much as the experience of more specific basic emotions.

Tables 25 and 26 further reveal the total variance explained by these constructs, and in doing so highlight an interesting discovery. These figures reveal that on average, the *Positive Affect* items (mean = 57.46%) have a considerably larger proportion of their variance explained, compared to the *Negative Affect* items (47.62%). In examining the total variance accounted for by the variables in comparison to that relegated to residual effect (column 10), borderline results (total mean = 47.62%, residual mean

= 52.38%) are discovered for the *Negative Affect* items, with observations that on average slightly more variance is unexplained than explained. Such a finding suggests that perhaps these emotions experienced more method variance, or the factor structure is more reliant upon its correlation with *Positive Affect* to account for some of the variance in its emotion items. Furthermore, as both *Negative Affect* and *Positive Affect* impact the *Apathy* items, it is not surprising that the variance explained by each individual affective state is not particularly high for these emotions. In the *Positive Affect* items, the variance explained (57.46%) overwhelmingly exceeds the residual variance (42.54%) explained, stressing the efficacy of the scale in capturing consumer's affective appraisals of an innovative product.

Scale confirmation conclusion:

At this stage in its development, the 17-item, higher-order scale (see Figure 10) shows promise as a psychometrically sound measure suitable for application in both theoretical and applied research. In

Figure 10: Final 17-item bi-valenced hierarchical measurement model
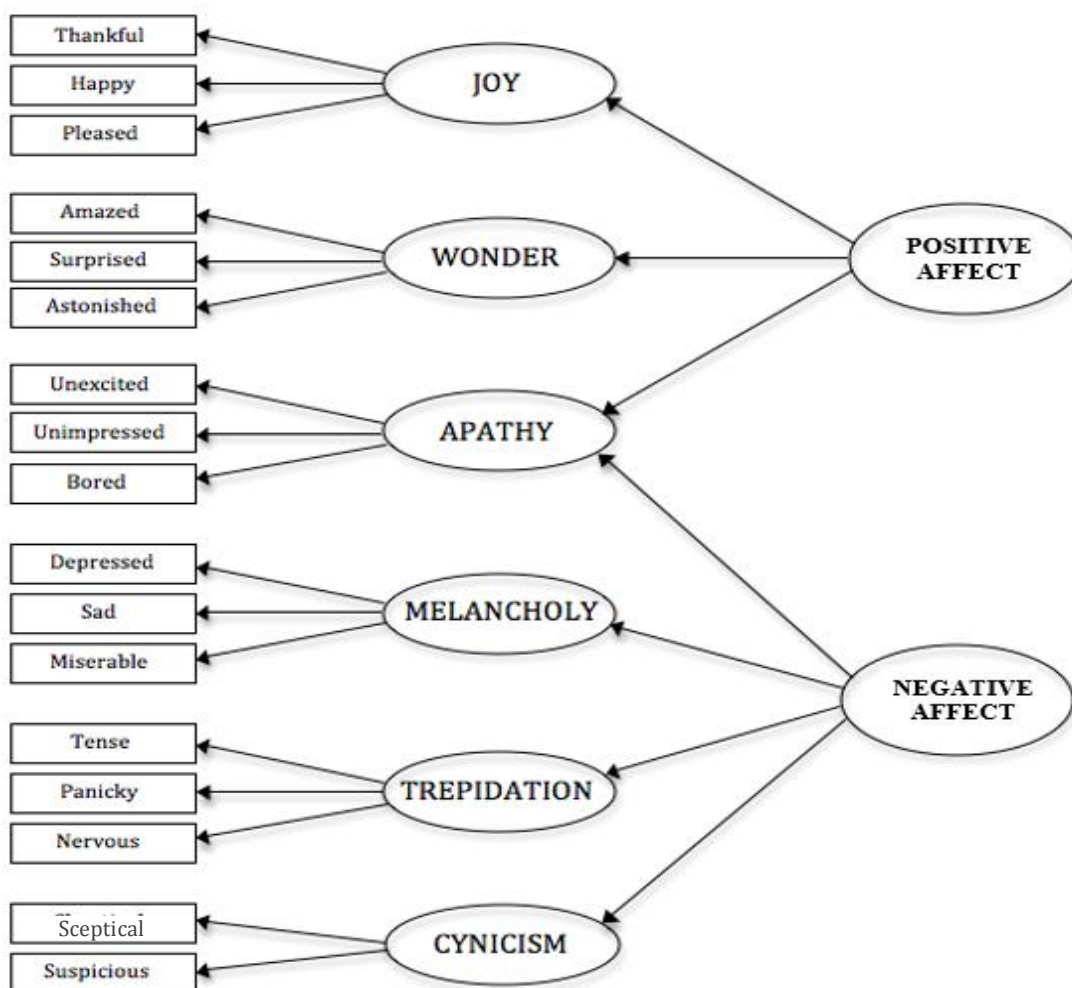
line with scholars such as Laros and Steenkamp (2005), a bi-valenced hierarchical solution is examined that captures both valences of general affect at the superordinate level, basic emotion clusters at the first-order, and specific emotion items. Yet again, the unique discovery of *Positive Affect's* inverse influence on *Apathy* has been empirically substantiated. This is a very intriguing finding, and the first of its kind, that whilst increasing the complexity of the factor solution, makes a very important conceptual and methodological contribution to this unique research context where the capture of drivers of consumer innovation acceptance is enhanced in proficiency and sensitivity to such an idiosyncratic influencer. Having thoroughly examined its parameters (as well as the specific indirect effects), subsequent stages of the scale development process will attempt to confirm the validity of the scale by evaluating its reliability, construct and trait validity.

- *Footnote:*

5. As *Joy's* standardized regression weight with its second-order factor *Positive Affect* is in excess of 1.000, its SMC value is above 1. Brown (2006) describes such an estimate as "admissible". The author advises that as factor loadings are regression coefficients, not correlations, a standardized regression weight above 1 may exist, albeit as indicative of multicollinearity issues. Thus, whilst discriminant validity is supported for this construct (see above), *Joy* is evidencing somewhat large similarities with *Wonder*, and perhaps this is the reason for the S.R.W. in excess of 1. However, the aforementioned tests of discriminant validity do not identify this as an empirical concern.

Step 5b. Scale validation (Sample 3)

Construct validity:

As the discriminant and convergent validity of this solution has already been established, further assessments of construct validity will be scrutinized. Schwab (1980) defines construct validity as, ''representing the correspondence between a construct (conceptual definition of a variable) and the operational procedure to measure or manipulate that construct'' (p. 5). As the scale already evidences strong empirical support for its factor structure and ability to measure the intended constructs of consumer's affective appraisals of innovations, validity assessments are undertaken to re-examine the areas of empirical concern identified in the previous application of the scale. To examine this validity, assessments of reliability and internal consistency will first be scrutinized in accordance with the procedures followed in the previous sample.

Reliability:

Reliability assesses the internal consistency or stability of a measure (Bollen, 1989), identifying the extent to which a measure reflects its construct, as opposed to error. As the reliability of each of the first-order constructs is proven sufficient in Sample 2, this sample is used as a means to support and confirm such reliability, with the breadth and validity of the scale again considered of utmost importance.

Cronbachs' alpha:

Cronbachs' alpha coefficient is employed to estimate the systematic variance of a measure based on the correlations amongst the empirical indicators that comprise it, with a criterion of .700 set as the minimum acceptable value. In this sample, the reliability of the scale's first-order constructs are as follows: *Joy* - .856, *Wonder* - .880, *Apathy* - .725, *Trepidation* - .736, *Melancholy* - .706, and *Cynicism* - .675. Again, as the *Cynicism* construct is a two-item measure, it is anticipated the coefficient of the construct would be inadequate, thus a figure of .675 is considered reasonable. From an individual item perspective for each construct, each emotion (with the exception of *Miserable*) is strongly contributing to the internal consistency of the factor, and should an item be deleted, the internal consistency of its factor would not improve. The *Miserable* emotion however is causing some concern in this sample,

224

and if it were deleted from the *Melancholy* factor, the internal consistency would improve to .759. However, as the reliability of the factor overall is adequate, the corrected item-total correlation figure of .438 is acceptable (indicating the item correlates adequately with the total score of the research instrument) (Field, 2009), and the reliability of this factor in the previous sample is strong (.819), the decision is made to retain *Miserable* in the scale, as most plausibly, such a finding is an artefact of this specific sample.

Composite reliability:

Due to the shortcomings of Cronbachs' alpha previously discussed, composite reliability (CR) is again examined to assess the extent to which sets of indicators of a latent construct share in the measurement of the construct. Distinguishing between error and the "true score", CR is again employed in a CFA manner to compare the true score variance with observed score variance, with an identical formula used to calculate each first-order construct's CR as in the previous sample. Such analyses reveals the following: *Joy* = .862, *Wonder* = .878, *Apathy* = .732, *Melancholy* = .742, *Trepidation* = .778, and *Cynicism* = .671. Herein, CR values range from .671 to .878, with the majority indicative of very strong reliability. Importantly, in this sample, *Wonder's* reliability from a CR standpoint is very strong (particularly compared to Sample 2's .697), and is in fact the most internally consistent, with a CR of .878. However, *Cynicism's* (.671) CR, whilst meeting more lenient cut-offs, is just below the suggested value demonstrative of good reliability. As the factor is again a two-item construct, this is not surprising, hence the construct's inter-item correlations must be examined to further determine its applicability.

Unidimensionality:

Unidimensionality represents how well a construct reflects a single trait underlying a measure, examining whether a set of empirical indicators is related to only one, single construct, and as all the scale items are significantly impacted by just one latent variable (see Table 24) unidimensionality is demonstrated. Additionally, as this solution (with items only significantly impacted by one latent construct) fits the data well as indicated through rigorous model fit scrutiny; its unidimensionality is further supported.

To further assess reliability through an SEM mechanism, assessment of each construct's inter-item correlations is undertaken. As the solution is again over-identified, the model implied correlations are examined. In this sample, the average inter-item correlations between the items of each latent factor of the scale are relatively moderate, ranging from .469 - .708 (see Table 27). These averages are slightly higher than Sample 2, and could perhaps be a result of the smaller pool of items examined resulting in stronger correlations between items. In light of this, the first-order constructs are again not considered too internally consistent that they disregard the breadth of the construct, yet they do generally fall out of Clark and Watson's (1995) recommended range of .40 to .50, with the exception of *Cynicism*, which despite its marginally low composite reliability, does sit close to this recommended range of inter-item correlations. However, in assessing unidimensionality beyond just a construct's "range", the distributions of these correlations are examined, with again very negligible standard deviations (see Table 27) discovered, suggesting the correlations do cluster closely around the mean, and the inter-item correlations of the scale are acceptable.

Table 27: Assessments of inter-item correlations (Sample 3, n = 200)*

	Joy	Wonder	Apathy	Melancholy	Trepidation	Cynicism
Range	.618 - .712	.689 - .731	.394 - .536	.415 - .574	.463 - .633	.509
Mean	.673	.708	.469	.491	.530	.509
S.D.	.002	.000	.005	.006	.008	-

*Bootstrapped correlation estimates cannot be provided for model-implied correlations

In examining, the overall reliability of each of the scale's first-order constructs across this and the previous sample, it is determined that each of the first-order constructs is reliability, demonstrating strong internal consistency and homogeneity amongst empirical breadth. In light of the previously established support for the validity of the scale, its empirical structure has successfully withheld extensive empirical scrutiny. Final assessment will now examine the trait validity of the scale through assessment of criterion and nomological validity.

Predictive validity:

Having established that this consumer affect measurement model is both valid and generalizable across three independent samples, its validity in structural applications must be examined. It is essential that such scrutiny occur in a manner critical of the scale's efficacy in empirical structural application. This

is achieved by assessing the ability of the scale to behave in a way that is comparable to other scales it is related to (criterion validity), whilst demonstrating empirically observed predicted relationships (nomological validity) with other constructs. The following analysis will seek to examine these two conditions, with confirmation of such validity essential in the scale's diffusion into the academic literature.

Criterion validity:

Criterion validity examines the ability of a scale to behave (as indicated by correlations) in accordance with scales it should be theoretically related with (Oh, 2005). A scale is demonstrative of such validity through evidence of significant correlations with measures of which it is known to be associated with (Nunnally, 1978). The affect experienced by individuals, and more specifically consumers, is intricate, unique and personally subjective appraisals that can easily be confused or miscomputed. Thus, as the context of affective evaluations in this research is both distinct from other affective measures and unique to the experience of consumer innovation acceptance, it is imperative that the scale establishes sufficient criterion validity with other constructs unique to this conceptual domain. Evidently, the scale (specifically its two second-order constructs) is examined in relation to cognitive attitude antecedent variables widely employed in the technology and innovation acceptance literature. The existence of significant correlations (relative to their anticipated direction) between the scale and these constructs will serve as evidence of the scale's criterion validity.

Perceived compatibility:

As a consumer perceives an innovation to be more compatible with their current lifestyles and habits, or desires and/or needs to use that innovation, one can assume the experience of a positive affective state will also occur. It is not necessarily expected that such emotions will be experienced in strong intensity, yet nonetheless a positive correlation is anticipated between the *Positive Affect* component of the scale and a measure of *Compatibility*[6], whilst it is expected that the experience of negative affect is inversely related with an innovation's fit with one's lifestyles and habits. Regarding empirical support, Schierz, Schilke, and Wirtz, (2010) suggest compatibility reconciles an innovation with the existing values, behaviour, and experiences of consumers. Herein, in these values and experiences, the two constructs may coexist. Regarding its relationship with negative affect, Sherry (1997) suggests a lack of compatibility with individual's needs may negatively affect usage.

227

In examining these correlations, the relationship between *Positive Affect* and *Compatibility* is supported ($r = .480$, $p < .001$), with further exploration revealing the correlation between *Negative Affect* and *Compatibility* also statistically significant ($r = .203$, $p < .01$), but with a smaller correlation in magnitude. Such supports that the two affective constructs behave congruent with scales it should be theoretically related with.

Perceived behavioural control:

Further scrutiny of criterion validity is examined through the two affective construct's relationship with perceptions of internal and external control in using the subject innovation, as measured through *Perceived Behavioural Control*[7]. Innovation acceptance requires a consumer to assess their own perceptions of control in executing a behaviour, however, such is a personal assessment of internal and external factors, thus is not inherently linked with the specific affect consumers experience when exposed to a new product innovation. In its most basic conceptualization, Ajzen (1985) reveal control is a construct that reflects situational enablers or constraints to behaviour. Experiences of affect are likely to serve a similar purpose, thus increasing intensities of positive affect could be expected to coincide with a favourable perception of one's internal and external control, however such a correlation is likely to be quite small in magnitude. Similarly, the experience of negative affect may exhibit a small relationship with perceptions of such control.

In examining these relationships, the correlation between *Positive Affect* and *Perceived Behavioural Control* is statistically significantly supported ($r = .243$, $p < .01$), however the size of this correlation is quite small in magnitude. This indicates there is only a small relationship between the two as expected. Scrutiny of *Negative Affect's* relationship *Perceived Behavioural Control* ($r = .010$, *n.s.*) indicates a lack of statistical significance, with a very small correlation observed, indicating a very minor relationship between the two constructs also as expected. Herein, in light of the aforementioned correlations observed between *Positive Affect* and *Negative Affect* with other theoretically related constructs in the innovation acceptance context, strong evidence is provided for criterion validity.

Nomological validity:

As the criterion validity of the scale is successfully established (see above), assessment of its nomological validity is undertaken. Nomological validity is a comprehensive means for assessing construct validity when constructs under examination are part of a theoretically linked area of research (Straub, Boudreau and Gefen, 2004). Such validity examines the pattern of results between exogenous (in this case the affect constructs) and endogenous constructs. In addressing nomological validity, the scale's second-order constructs should interact with an endogenous (dependent) variable in a fashion comparable with that observed in the academic literature. Hence, if the scale developed thus far is measuring what it is intended to, statistically significant regression relationships should be observed in accordance with the orientation of those previously discovered in the academic literature.

As this research examines consumer's affective evaluations as antecedents to attitude, it must be demonstrated that this scale of consumer affect behaves in a way comparable to that of past research. In such research, affective appraisals are causally linked to attitudes and behaviours; take for example Malhotra's (2005) integrated model of attitude and affect, Turel, Serenko, and Bontis' (2007) connection between emotional value and perceived value, and the PAD amongst the CAT model (Kulviwat et al., 2007; Nasco et al., 2008). Thus, in light of these numerous empirical findings, it is expected that this scale, and its valenced sub-dimensions, will hold a unique place in the causal structure of consumer's evaluations of innovative products. Specifically speaking, if the scale is measuring what it is intended to measure, a statistically significant positive (regression) relationship should be empirically demonstrated between *Positive Affect* and *Attitude*, and a significantly negative relationship observed between *Negative Affect* and *Attitude*. In assessing such nomological validity, it is discovered that *Positive Affect* ($\beta = .327$, $p < .001$) and *Negative Affect* ($\beta = -.161$, $p < .05$) both impact significantly in the anticipated direction with *Attitude*[8]. Such a finding confirms the nomological validity of the scale, indicating that in the context of consumer innovation acceptance, the two constructs of general affect both perform suitably for further empirical application.

- *Footnotes:*

6. *Compatibility* is measured through a 4-item scale adapted from Taylor and Todd (1995 a,b), and Yang et al. (2012). CFA analysis supports the empirical structure of the construct.

7. *Perceived Behavioural Control* is measured through a 3-item scale sourced from Taylor and Todd (1995a,b). CFA analysis supports the empirical structure of the construct.

8. *Attitude* is measured through a 3-item scale adapted from Bagozzi, Baumgartner, and Yi (1992), Kulviwat et al. (2007). CFA analysis supports the empirical structure of the construct.

Step 6. Developing norms

The final stage in the scale development procedure is often achieved through the development of "norms" for the behaviour of the construct or scale. Such a step allows future researchers to employ the developed scale with a degree of context and understanding in not just how it has been developed, but how scores ascertained from the scale should be interpreted. In developing such norms for subsequent application of this scale, characteristics of the population and sample, the methodological and conceptual structure of the scale in its bi-valenced higher-order form, item scores and distributions, and the advised method of empirical analyses are discussed.

Population and sample:

Mackenzie, Podsakoff and Podsakoff (2011) suggest that essential to developing scale norms is the acquisition of representative samples of which to generalize results from. Herein, in developing norms of this scale for further comparison the experimental conditions of the research, the support for content validity of the scale, and consistent nuanced empirical findings suggest that consumers exposed to an innovation for the first time are representative of the population the scale is intended to perform amongst. Urbina (2004) identifies that samples utilized must be large enough to ensure scores obtained from the scale are stable. The three sample sizes employed in this scale development procedure (316, 257, and 200 respectively) have proven adequate in analyzing the scale through CFA, however, wider application in structural models with the same composition may be more demanding of statistical power. Looking beyond the scope of this study, Mackenzie, Podsakoff, and Podsakoff (2011) acknowledge that further understanding of the scores amongst different samples is helpful, identifying that a practical barrier to developing such norms exists in the ability to obtain representative samples of which the population can be generalized from. In light of the considerable importance associated with interpreting a scale's score, the performance of a scale across various contexts or characteristics (i.e. gender, income levels, usage groups, perceptions of innovativeness) should be examined in subsequent research.

Methodological structure:

In the measurement of something as multifarious and intangible as consumer affect, the methodological specifics of the scale are of substantial importance, particularly the scale type used to

capture affect. A traditional Likert scale is not appropriate, as in its application, the scales validity is likely to be weakened by asking respondents the extent to which they agree or disagree with the experience of an emotion. Furthermore, emotions are complex and subjective, thus dimensionalizing them through antonyms (such as a semantic differential scale) is also likely to diminish the validity of an affective scale. Herein, a continuum style of measurement is advantageous, as it allows respondents to indicate the varying intensities with which they experience a particular emotion, thus enhancing its ability to accurately capture variance in consumer affect.

Beyond the scale type, the width of the scale is also of paramount importance, however in capturing affect, most Likert scales do not offer the methodological breadth necessary to capture the various intensities of said emotions. Since only the beyond-midpoint scores (traditionally 5, 6 and 7) are relevant in interpreting the extent to which an emotion is experienced, a Likert scale (traditionally 7-point) is too limited, offering a very narrow range for respondents to indicate the extent to which they experience. Evidently, in interpreting the outcomes of such scores through regression weights (standardized or not), it must be asked, is a 2-unit rise from 3 to 5 conceptually the same as a 2-unit rise from 5 to 7? This research would suggest not, as the former indicates a shift from not experiencing an emotion to the experience of that emotion (something likely to have enormous practical outcomes), whilst the latter is merely an increase in intensity from relatively weak to strong. Herein, the outcomes on consumer behaviour of the two may be profoundly different, and a scale that accommodates such shortcomings is imbalanced in its dimensions and not suited to this research context. In light of the aforementioned shortcomings, an 8-point continuum measure where the intensity of the emotional experience grows in intervals as the scores does is utilized for this scale. Such measurement provides respondents a suitable amount of methodological space to express the vast range of intensities of which an emotion can be elicited whilst empirically representing continuous and consistent growth in said intensity as respondents progress through each point of the scale. Moreover, as demonstrated through the large number of responses indicating they did not experience a particular emotion, the option to indicate one does not experience at all is supported as integral to this scale.

Higher-order structure:

Examining the complex dynamics of consumer affect, several authors have discovered that a higher-order solution comprising of positive and negative second-order factors provides the best empirical and conceptual fit for this unique area of affective research. For example, Diener (1999) discovers that

positivity and negativity are "ever present in the experience of emotions" (p. 804), whilst the academic literature reveals several scales (i.e., Izard, 1977; Derbaix, 1995, Laros and Steenkamp, 2005) that have successfully divided emotions into positive and negative sub dimensions, strengthening the exogenous nature of affective measures in acceptance studies. The propagation of this scale's higher-order configuration in this research has come about through the strong relationship shared between similarly valenced affect. Evidently, the higher-order construct of *Positive Affect* empirically influences the experience of *Joy*, *Wonder*, and *Apathy* (inversely) emotions, whilst the experience of *Negative Affect* influences the experience of *Melancholy*, *Trepidation*, *Apathy*, and *Cynicism* emotions. Whilst more complex in nature, such an empirical structure provides the best representation of consumer affective appraisals of innovations, and has the added advantage of allowing for the deciphering of direct and indirect effects of general affective states compared with that of more specific basic emotions. Furthermore, such a composition offers a more parsimonious and generalizable account for the correlations amongst lower-order factors.

Scale conceptualization:

In the interest of establishing norms from a conceptual perspective, the composition of the latent factors retained in the scale (representing the 17 emotion items) is distinct from previous consumer affect measures (particularly the *HCE* and *CES*). Whilst supporting the existence of a bi-valenced hierarchical level of *Positive Affect* and *Negative Affect* (i.e. Laros and Steenkamp, 2005) the scale offers a new and distinct affective conceptualization of innovation acceptance. Of the six first-order constructs retained, the emotion items of four (*Apathy*, *Cynicism*, *Trepidation* and *Wonder*) appear specifically focused to the distinctive appraisals of innovation acceptance (particularly the experience of something new and unfamiliar) whilst the other two (*Joy* and *Melancholy*) are semantically simple, offering easy to comprehend and familiar emotion items. In either case, a strong balance is maintained between context specific innovation affect that exist in a form new to academia, and undemanding and well-established general emotions. A particularly unique finding of the scale lies in the discovered (and confirmed) dual empirical influences on the first-order *Apathy* construct. Interestingly, and perhaps for the first time empirically, both valences of general affect (positive and negative) have substantial and statistically significant relationships with the latent construct. Such a finding appears particularly unique to the context of innovation acceptance and only enhances the applicability of the scale.

Spector (1992) details for the meaning of scores to be correctly interpreted, it is useful to have an insight into the distribution of scores amongst different populations. These fundamentals are essential, as the meaning of a score should be determined relative to some frame of reference, as the scale or metric the score is collected on may be varied amongst studies. Herein, in measuring emotions from a scale of 0 (Not at All) to 7 (Very Strongly), the distribution and item scores are discussed to provide suitable direction for scale norms.

As the methodological structure of this scale is a continuum, in developing norms of this scale for further comparison, it is expected that the distribution of the scale's scores are non-normally distributed from both a skewness and kurtosis perspective. This is a result of the negligible likelihood of respondents indicating an even spread and strength of scores either side of the mid-point for all emotions. It is much more likely however, that firstly, many respondents will not experience all emotions. In light of the bi-valenced nature of the items, this is perfectly acceptable and anticipated; for example, it is not likely a consumer who really loves an innovation they are exposed to will experience as much happiness as they do sadness towards it; likewise, they will probably also experience surprise, but not panic. Herein, the inexperience of an emotion may be just as pertinent as the experience of others; for example if a consumer is not experiencing boredom or misery, this is likely to lead to empirical outcomes that are favourable to the adoption of an innovation. Inclusion of a broad range of affect from positivity, through indifference to negativity, ensures such a scale has application in not only consumer acceptance, but also resistance of innovations.

Secondly, when a consumer does experience an emotion through the pre-adoption exposure to an innovation, it is unlikely that emotion will be felt in extreme intensities. Being exposed to an innovative product will probably not make a consumer experience depression or tenseness to the extent that a 7 or 8 is indicated on this scale. It is much more likely that consumers will experience intensities indicative of scores from 1 to 4, of which the latter could be considered a relatively strong intensity in this context. Herein, Mackenzie, Podsakoff and Podsakoff (2011) identify that further norms can be established by examining means and standard deviations of scale scores. In the interest of comparison with scale norms, the means and standard deviations of scores are provided for both samples subjected to CFA analysis (see Tables 7 and 18).

As a result of the aforementioned nuances of the developed measure, the scale is likely to exhibit data that is non-normally distributed. Because of this, it is recommended that interpretation of its data be always undertaken through bootstrapped (or some other form of non-parametric testing) estimates, with a preference for the interpretation of standardized estimates. As exhibited in the parameter estimates of samples 2 and 3 (see Tables 12 and 24 respectively), failure to do so may lead to inflation / deflation of standard errors and regression weights, resulting in incorrect empirical assumptions, and decisions made on potentially violated data. Furthermore, assessments of effect size should also be used as an indicator of empirical rigour rather than purely adherence to statistical significance (Kline, 2013).

Chapter conclusion:

Throughout the process of analyzing the 57-item factor solution with rudimentary exploratory factor analysis right through to subjecting its final 17-item composition to rigorous and decisive confirmatory factor analysis, it is confirmed the developed scale operates as an extremely competent and unique measurement model. The vast analysis detailed throughout this chapter reveals some very inimitable insights into the operations of the solution, indubitably establishing the need for such an original scale and in the process highlighting some profound conceptual and methodological contributions for consumer affect and innovations research. Having re-specified the scale across three new and independent samples and meticulously scrutinized its parsimony, generalizability, and validity, the aforementioned empirical achievements detailed in this chapter do substantiate the scale as a deserved resident in the academic literature. Evidently, the final 17-item, bi-valenced hierarchical scale developed in this chapter must satisfy its final norm and be given a title. Due to its unique and specific conceptualization of the affect experienced by consumers when exposed to an innovation (in the pre-adoption stage), this scale is entitled the *Consumer Innovation Affect (CIA)* Scale. Herein, the CIA scale is suitably developed to assist this research in addressing its research question through capturing the unique emotional appraisals of consumers when exposed to an innovation in the pre-adoption context.

Having detailed the aforementioned norms, the job of development is not yet complete though. As society and communities are dynamic groups, it is likely that perceptions of innovativeness and

particularly the affect associated with such will change over time. Thus, as detailed by Mackenzie, Podsakoff and Podsakoff (2011), it is recognized that norms may change over time, and must be periodically updated from this point in early 2015 in which the development of the scale is complete. Herein, the indubitable generalizability and validity of this scale can only be wholly recognized through extensive empirical application across a number of studies, with the composition of the scale evolving parallel to the evolution of consumers and the innovations they encounter. To begin this process, the CIA scale is now utilized (for the first time) in a wider structural model examining consumers breaking from their status quo in accepting an innovation. This will be examined across perceptions of mild innovativeness and high innovativeness.

Table 28: Summary of scale development research process

Study 1	*Purpose*	Generate items examining consumer innovation affect
	Items	57 consumer emotion items
	Respondents	316
	Stimuli	*Electrolux Ribbon* (print stimuli)
	Methods	Scale exploration - EFA
	Results	Scale purified to 30 items, 5 factor measure
Study 2	*Purpose*	Confirm empirical structure on new sample, refine measure
	Items	30 items
	Respondents	257
	Stimuli	*Electrolux Ribbon* (print stimuli)
	Methods	Scale exploration - EFA, Scale confirmation - CFA
	Results	Scale purified to 17-items, 6 factor bi-valenced hierarchical
Study 3	*Purpose*	Validate empirical structure and finalize scale
	Items	17 items
	Respondents	200
	Stimuli	*My Botto* (video stimuli)
	Methods	Scale confirmation - CFA
	Results	17-item, bi-valenced hierarchical *C.I.A.* scale developed

CHAPTER 6: RESULTS AND DISCUSSION

To address this study's research question and examine status quo breakage drivers in consumer innovation acceptance, this chapter is demarcated into three sections. Firstly, the psychometric measures used as part of the analyses are scrutinized through rigorous CFA (across the two levels of perceive innovativeness). Secondly, to test the proposed hypotheses detailed in Chapter 3, the theoretical framework is examined through structural equation modeling (*AMOS* and *MPlus*). Such hypotheses are examined through two structural models; one examining products perceived mildly innovative by respondents, and one examining products perceived highly innovative. Thirdly, to add enhanced scientific rigour to the analyses, a control sample of those products perceived as "not innovative" or conventional, is undertaken. The distinction between the developed theoretical framework for innovative products and that of conventional products will provide additional support that the framework developed is specified to the context of breaking one from their status quo through innovation acceptance, not regular product adoption.

CFA analyses:

In line with the two-step approach to analysis as recommended by Anderson and Gerbing (1988) and utilized by authors such as Yang et al. (2012), this study initially examines the measurement models utilized through rigorous confirmatory analysis with a focus on validating each construct (or measurement model) in accordance with the three-prong assessment of unidimensionality, reliability, and validity, as delineated by O'Leary-Kelly and Vokurka (1998). Having supported the applicability of the measures used to capture data, a series of structural models are next refined and examined to test the relevant hypotheses and explore any alternate compositions. Prior to such analyses though, the three samples utilized in this study are discussed, with subsequent analyses deconstructed to each of the three samples to aid interpretation.

Sample:

As detailed in the "Research Instrument" section of the *Methodology* chapter, respondents evaluate the subject product they are exposed to on a number of personal, social, and innovation characteristics. These characteristics are subsequently examined as drivers of innovation acceptance, thus integral to such is how innovative respondents perceive the product to be. This level of perceived innovativeness

(as indicated by respondents' individual perceptions) dictates the sample the subject is allocated to. In this phase of the study, respondents are allocated to one of two treatment samples ("mildly innovative" and "highly innovative") which are characterized by increasing amounts of unfamiliarity and novelty as perceived by respondents. Respondents indicate their perceived level of innovativeness through a scale of 0 (not innovative at all) to 10 (highly innovative); a perceived innovativeness score of $4 - 7$ allocates them to the "mildly innovative" sample, whilst a score of 8 or above enlists them in the "highly innovative" sample. To address additional research objectives of this study, a control sample is also examined in which respondents do not perceive the subject product to be innovative. This "conventional" sample, represents a perception of a high level of respondent's familiarity with the product, as indicated by a perceived innovativeness score of $0 - 3$.

Of the samples collected, the conventional sample of 254 respondents is comprised solely of respondents who score the stapler or gaming console within this range of values, whilst the two latter groups are comprised of respondents exposed to each of the four remaining stimuli, evidencing samples of 422 and 283respectively. So the two innovative groups could be equivalent in sample size (a common requirement for some analyses, i.e. ANOVA), 69 respondents exposed to the "Cord Buddy" or "Goodnight Lamp" (34 and 35 respectively) who perceived innovativeness to be an "7" (what would be considered quite innovative) were reallocated to the highly innovative sample. These individuals are selected, as they perceive the highest level of innovativeness for a product that is objectively perceived to be moderately innovative by fellow respondents, herein representing a consumer who perceives a high level of innovativeness. Such a process culminated in sample sizes of 254, 353, and 352 respectively, across the three "innovativeness" samples. Such figures are considered adequate for SEM by many authors, including Kelloway (1998), and Anderson and Gerbing (1984).

Outliers:

Through preliminary analysis of data in the initial confirmatory analysis process, several outlier cases are identified and considered for removal. Such cases are considered troublesome as they exhibit divergent and large Mahalanobis Distances, as calculated in the SEM estimation process (AMOS, version 21). Through this process, 12 respondents are removed from the "conventional" sample, reducing its size to 242, with the "mildly innovative" sample remaining unchanged at 353, and 4 respondents removed from the "highly innovative" sample, reducing its final size to 348. Such figures are the final sample sizes used for subsequent analyses, with any previously undertaken CFA's re-

employed with these new sample sizes and subsequently discussed. The socio-demographic profile of these samples are exhibited in Table 29.

Demographic profile:

Whilst not the strongest impact on innovative behaviour, a number of researchers have discovered a variety of effects attributed to demographics. With this in mind, this study's demographic profile is examined across the three samples. Moon (2004), Venkatesh, Thong, and Xu (2012) have discovered age to be a key influencer in innovative behaviour, with the general consensus identified by Vandecasteele and Geuens (2010, p. 315) who note, "older people are always significantly less innovative than younger people". In examining the demographics of this study, the findings are complimentary to such an assertion, as the average age of the "highly innovative" sample (42.78) is substantially higher than the "mildly innovative "sample (31.9). Such suggests that older individuals perceive the same products be more innovative than their younger counterparts, however Steenkamp and Gielens (2003) suggest age may only affect innovativeness in particular contexts.

Table 29: Socio-demographic characteristics (all samples)

	mildly innovative (n = 353)		highly innovative (n = 348)		conventional (n = 242)	
	n	%	n	%	n	%
Gender						
Male	163	46.2	105	43.4	148	42.5
Female	151	42.8	101	41.7	190	54.6
Not specified	39	11.0	35	14.5	10	2.9
	353	100%	242	100%	348	100%
Age						
18 – 20	149	47.8	113	46.7	65	18.7
21 – 24	34	9.6	26	10.7	18	5.2
25 - 34	22	6.2	24	9.9	38	10.9
35 - 44	25	7.1	11	4.5	44	12.6
45+	82	2.3	30	12.4	183	52.6
Not specified	41	11.6	38	15.7	15	4.3
Mean	31.9	-	26.5	-	42.78	-
	353	100%	242	100%	348	100%
Annual Income						
Less than $15 000	135	38.2	69	28.5	69	19.8
$15 001 - $30 000	62	17.6	55	22.7	78	22.4
$30 001 - $45 000	25	7.1	27	11.2	50	14.4
$45 001 - $60 000	25	7.1	13	5.4	48	13.8
$60 001 - $75 000	17	4.8	10	4.1	30	8.6

$75 001 – $90 000	8	2.3	11	4.5	22	6.3
$90 001 +	17	4.8	6	2.5	23	6.6
Not specified	64	18.1	51	21.1	28	8.0
	353	100%	242	100%	348	100%
Education						
High School Yr. 10	1	0.3	0	0.0	2	0.6
High School Yr. 12	67	19.0	44	18.2	81	23.3
Tafe / Polytechnic	25	7.1	10	4.1	40	11.5
Trade / Professional	35	9.9	13	5.4	64	18.4
Uni. Undergrad. (incomp.)	164	46.5	126	52.1	122	35.1
Uni. Undergrad. (comp.)	14	4.0	12	5.0	22	6.3
Uni. Honours or Masters	8	2.3	2	0.8	7	2.0
Greater	0	0.0	0	0.0	0	0.0
Not specified	39	11.0	35	14.5	10	2.9
	353	100%	242	100%	348	100%
Occupation						
Student	188	53.3	132	54.5	86	24.7
Self- Employed	11	3.1	8	3.3	29	8.3
Professional	30	8.5	27	11.2	45	12.9
Unemployed	17	4.8	5	2.1	24	6.9
Retired	24	6.8	10	4.1	55	15.8
Skilled Worker	20	5.7	9	3.7	34	9.8
Homemaker	10	2.8	6	2.5	42	12.1
Other	14	4.0	10	4.1	23	6.6
Not specified	35	14.5	35	14.5	39	11.0
	242	100%	242	100%	353	100%
Country of Birth						
Australia	114	47.1	114	47.1	118	33.4
United States of America	46	19.0	46	19.0	112	31.7
Other / not specified	82	33.9	82	33.9	123	34.9
	242	100%	242	100%	353	100%
Country of Residence						
Australia	152	62.8	152	62.8	183	51.8
United States of America	54	22.3	54	22.3	124	35.1
Other / not specified	36	14.9	36	14.9	46	13.0
	242	100%	242	100%	353	100%

Regarding gender, Vandecasteele and Geuens (2010) suggest men are more innovative than women, distilling such down to social, cognitive, and hedonic motivations in their assessment of consumer innovativeness. In this study, the "highly innovative" sample is comprised of 54.6% women, whilst this is only 42.8% in the "mildly innovative" sample. Considering of those who indicated their gender, 51.5% are females, it is concluded women perceive the subject innovations to more innovative than men. With these findings in mind, Venkatesh, Thong, and Xu (2012) note gender differences in learning about new technologies from existing experience become more pronounced with age. Such appears apparent in this research, as the "highly innovative" sample is older, and more female.

Examining the annual income of respondents, the figures are relatively similar across the three samples, with a portion of approximately 51-55% earning under $30, 000 for the less innovative samples, relative to the 42.2% of respondents of the "highly innovative" sample. Herein, it is evidenced a larger proportion of respondents (35.3%) earn above $45, 000 for the "highly innovative" sample, as opposed to the two alternate samples (16.5% and 19.0% respectively). Such is likely to be an externality of the higher age of respondents in the "highly innovative" sample, as opposed to the other two, with older individuals (relative to this study) more likely to be more established in their careers and earning a higher income.

Whilst the education figures of the study are relatively comparable across samples, in assessing the occupations across the three groups, the "highly innovative" sample is overwhelmingly comprised (24.7% as opposed to 54.5% and 53.3%) of fewer students. Such supports the notion of the older sample representing the more innovative sample, who themselves are less likely to be studying. Examining the other key occupations, unsurprisingly a large portion (15.8%) of the "highly innovative" sample are retired, with 12.1% homemakers, a more common occupation amongst females of an older age group. Such figures are substantially larger than the two other samples. It is important to note, that the samples of this study, whilst perfectly appropriate for innovation acceptance studies (as identified by authors such as Kulviwat et al., 2007; Yi, Fielder and Park, 2008; and Kleijnen, Lee, and Wertzels, 2009), is far from what could be considered a "student sample". Like the other demographics examined, this study represents a broad cross-section of consumers, with no overly represented group exhibited.

Finally, the samples utilized in this research are far from homogenous with regards to national heritage. Most conspicuously, the majority of respondents are currently residing either in Australia or United States, which is unsurprising considering such are the locations of the data collection. Regarding where these individuals are born, a substantially larger amount of individuals from United States of America (67.8%) constitute the "highly innovative" sample, as opposed to their 19.0% representation in the "conventional" sample, and 31.7% in the "mildly innovative" sample. Such could be a result of less exposure to new product innovations in this American sample, or perhaps quite likely, is a cultural artifact regarding revealing their innovative perceptions, or what they consider "innovative".

Innovative samples analyses:

The measures utilized in this research are examined to ensure they are empirically competent for subsequent structural analyses. Should any empirical shortcomings be identified, measurement models are re-specified to the point of empirical and conceptual acceptability, or not utilized in the study if such is not achievable. To satisfy that the constructs to be examined in the innovative samples are appropriate for addressing the drivers of consumer innovation acceptance, their measurement models are now examined.

Model re-specification is employed as an essential procedure, and is undertaken so a satisfactory measurement model is revealed and can be implemented in further structural analysis. Such specification occurs on the suitability of model parameters, with localized areas of strain identified through modification indices > 3.84, and standardized residual covariance > 1.96. In the event of identified areas of localized strain (supported with conceptual and theoretical logic), measurement models are re-specified by dropping items, or freely estimating residual covariances until a theoretically sound and proper fitting solution is achieved. Acceptable model fit is determined when the solution meets the following the following standards:

- *Absolute Fit Indices:* GFI (> .95), AGFI (> .95), SRMR (< .08)
- *Incremental Fit Indices*: TLI (> .95), CFI (> .95)
- *Parsimony Fit Indices:* RMSEA (< .07, LO90 < .05, HI90 < .10, PCLOSE > .05)

In applying such rigorous standard, the final measurement models subsequently discussed all satisfy the various criteria of model fit and model re-specification. As a point of notice, the figures exhibited for those latent factors marked with an "$" figure in their CFA estimates table are bootstrap adjusted figures (1000 rotations) as the item distributions exhibit non-normality beyond the acceptable range (skew c.r. > 2, kurtosis c.r. > 7; Curran et al. 1996; Gao, Mokhtarian and Johnston, 2008). Due to its non-parametric re-sampling methodology, bootstrapping is a suitable remedy for non-normally distributed data, as recommended by Kline (2011). So comparison can be made amongst the two samples (mildly and highly innovative), the measurement model results for each sample are subsequently assessed together.

Perceived innovativeness:

As discussed in the "Methodology" chapter of this study, some respondents are exposed to a more innovative product stimulus as opposed to the familiar, established nature of the "conventional" control sample. So to ensure the variance in perceptions of innovativeness are salient, and two levels of innovativeness can be dichotomized, respondents of the two innovative samples are exposed to one of the following stimuli:

- *Cord Buddy*
- *Goodnight Lamp*
- *Hustle bag*
- *Zombies, Run!* Mobile application

Whilst perceptions of a product's innovativeness are likely to be subjective interpretations held by an individual, these products examined in this research (excluding those manipulated for the "conventional sample") are objectively much newer to the market, residing at the "introductory" stage of their product lifecycle. Such products are quite discontinuous in nature, and possess sharp differences in characteristics to those prior, thus as respondents have not used or purchased the products before, the innovative nature of the products would require them to break from their status quo if to entertain purchase.

Tables 30 and 31 describe the levels of innovativeness perceived by respondents for the two innovativeness samples. On a scale of 0 (*Not innovative at all*) to 10 (*Very innovative*), the mean figures are relatively high ("mildly innovative": mean = 6.60, *SD* = 1.043; "highly innovative": mean = 9.51, SD = 1.050), whilst the *SD* for these two samples are relatively low. Such is likely a result of the sample allocation based on minimum and maximum cutoff scores (5 – 8 for the "mildly innovative sample" and 8 – 11 for the "highly innovative sample"), hence variance in each sample is limited. In light of this narrow variance, it is not surprising the median score resides close to the mean in each of the samples, and the results shown reveal that on average respondents in the "highly innovative" sample perceive the subject products they were exposed to as substantially more innovative than the "mildly innovative" sample.

Table 30: *Perceived innovativeness* (mildly innovative, *n* = 353)*

Total			Stimuli Means[*]			
Mean	Median	SD	s3	s4	s5	s6
6.60	7.00	1.043	5.85 (96)	6.33 (72)	7.00 (79)	6.84 (106)

*s3 = *Cord Buddy*, s4 = *Goodnight Lamp*, s5 = *Hustle bag*, s6 = *Zombie Run* app.
Parentheses indicate the number of respondents

Table 31: *Perceived innovativeness* (highly innovative, *n* = 348)*

Total			Stimuli Means[*]			
Mean	Median	SD	s3	s4	s5	s6
9.51	9.00	1.050	9.06 (81)	9.36 (107)	9.93 (95)	9.72 (65)

*s3 = *Cord Buddy*, s4 = *Goodnight Lamp*, s5 = *Hustle bag*, s6 = *Zombie Run* app.
Parentheses indicate the number of respondents

As the respondent's perception of innovativeness guides their group allocation, not the product they were exposed to, Tables 30 and 31 further reveal the average scores for each of the stimulus comprising the sample as well as the number of respondents in the sample that were exposed to each of the innovations (see parentheses). Such reveals that perceptions of the products innovativeness are distinct across the two groups for each of the innovations. Further examining the means for each of the innovations across the two samples, t-test analyses reveals the mean level of perceived innovativeness is (strongly) significantly different across groups for each of the individual innovations:

- *Cord Buddy* t-test indicates strongly significant difference in innovativeness means (equal variances not assumed, Levene's test $p < .05$), $t(152.367) = -20.781$, $p < .05$; very large effect size = .860

- *Goodnight Lamp* t-test indicates strongly significant difference in innovativeness means (equal variances not assumed, Levene's test $p < .05$), $t(170.782) = -18.285$, $p < .05$; very large effect size = .814

- *Hustle* t-test indicates strongly significant difference in innovativeness means (equal variances assumed, Levene's test $p > .05$), $t(172) = -20.057$, $p < .05$; very large effect size = .837

- *Zombies, Run!* t-test indicates strongly significant difference in innovativeness means (equal variances assumed, Levene's test $p > .05$), $t(169) = -19.261$, $p < .05$; very large effect size = .829

Utilitarian vs. hedonic:

So to ensure both task types (i.e. utilitarian or hedonic) are equally examined in each of these samples, of the aforementioned product stimulus respondents are exposed to, approximately half of the sample

are exposed to the *Cord Buddy* [s3], or *Hustle* bag [s5]) whilst the other half are exposed to the *Goodnight Lamp* [s4] or *Zombies, Run!* application [s6]. The spread of such respondents in the samples is delineated in Tables 32 and 33.

To confirm the manipulation and subsequent even allocation of product type amongst the samples, the utilitarian and hedonic nature of each innovation is examined. Measured through a 7-point Likert scale, encouragingly respondents agreed that each of the primarily utilitarian products would serve a more utilitarian purpose (5.40 and 5.54, 5.88 and 6.07), and that each of the primarily hedonic products would serve a more hedonic purpose (4.38 and 4.95, 5.14 and 5.77). Regarding the dichotomous selection for each of the products, the primarily utilitarian *Cord Buddy* (s3 = 2.45) and *Hustle* bag (s5 = 3.03) were considered "utilitarian" in both the "mildly innovative" sample, and "highly innovative" sample (s3 = 2.36, s 5 = 2.83). Examining the primarily hedonic products, both the *Goodnight Lamp* (s4 = 4.51) and *Zombies, Run!* application (5.16) are considered "hedonic" in the "mildly innovative" sample, with similar accounts observed in the "highly innovative" sample (4.46 and 4.74). Such results are encouraging, as they support the notion that the stimuli achieved their intended purpose in framing the utilitarian or hedonic perception of respondents, whilst ensuring there is a comparable split in both samples of each type of innovation.

Table 32: *Utilitarian* vs. *hedonic* product stimulus (mildly innovative, *n* = 353)*

Task type	s3 mean (*n* =96)	s4 mean (*n*=72)	s5 (*n* = 79)	s6 (n= 106)
Utilitarian	5.40	3.93	5.54	3.54
Hedonic	3.08	4.38	4.29	4.95
U vs. H	2.45	4.51	3.03	5.16

* s3 = Cord Buddy, s4 = Goodnight Lamp, s5 = Hustle bag, s6 = Zombie Run app

Table 33: *Utilitarian* vs. *hedonic* product stimulus (highly innovative, *n* = 348)*

Task type	s3 mean (*n* =81)	s4 mean (*n*=107)	s5 (*n* = 95)	s6 (n= 65)
Utilitarian	5.88	4.83	6.07	4.66
Hedonic	4.21	5.14	4.82	5.77
U vs. H	2.36	4.46	2.83	4.74

* s3 = Cord Buddy, s4 = Goodnight Lamp, s5 = Hustle bag, s6 = Zombie Run app

Empirical constructs:

As this research seeks to explore the acceptance of innovations through the breaking of one's status quo, the vitality of the level of the products innovativeness as perceived by the individuals is particularly high. Evidently, in examining the potential drivers of innovation acceptance, this stage of

245

the research splits respondents into two samples based upon the perceived level of innovativeness, with the measurement models of prospective empirical constructs examined through rigorous CFA. Such analyses is undertaken to firstly confirm the measurement models are suitable for further structural analyses, and secondly to determine the extent of equivalency of factor structures across samples as a proxy of the similarities or differences of respondents perceptions of these constructs. The constructs delineated as part of the proposed conceptual model are now scrutinized amongst these two innovativeness samples.

Complexity:

Examining respondents' perceptions of *Complexity* across the two samples (see Figure 11), some clear disparities are evidenced; the most notable of which is the omission of item 4 in the "mildly innovative" sample. This item is introduced to the scale to further enhance its conceptual scope under the innovation acceptance context, offering methodological value to the study in the process. It appears evident that products that are *not* perceived as highly innovative do not seem to elicit strong perceptions of difficulties in switching to using that innovation. Such a logical observation endorses the idea that when a consumer perceives an innovation to be highly innovative, the individual may perceive this type of complexity salient; a revelation that may be linked with higher levels of unfamiliarity and required learning for highly innovative products, but not less innovative ones. Such is likely to be a crucial consideration in consumers breaking from their status quo to accept an innovation.

Figure 11: *Complexity* measurement model (innovative samples, *n* = 353 and *n* = 348)*
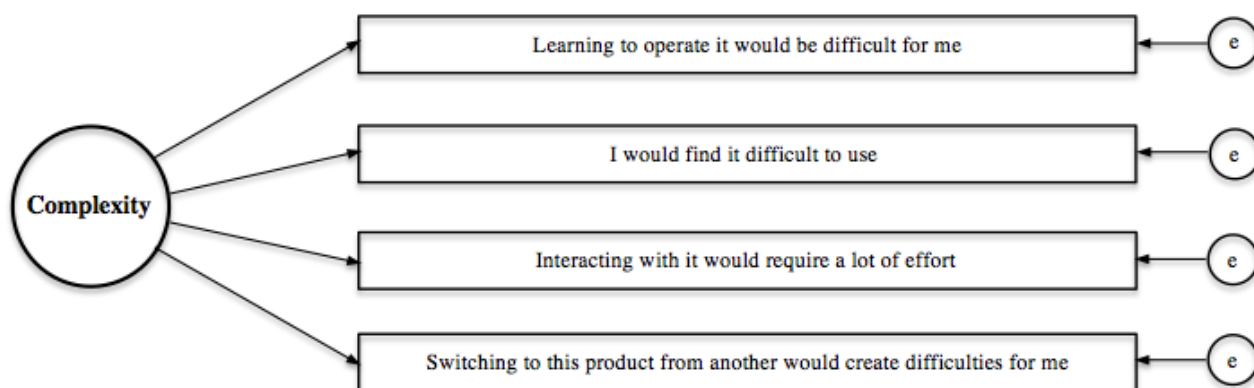
* Item 4 omitted from mildly innovative sample

Assessing the item descriptives of *Complexity* in both the groups as revealed in Table 34, the means of the three items are comparably low (2.131 and 1.994), indicating respondents do not associate the subject innovations with perceptions of complexity. The mean differentials of the three items (.056, .203, and .213) across the two samples supports the notion that the two groups of respondents do not acknowledge any significant difference in complexity. This is supported by *t*-test analysis which indicates non-significant difference in means (equal variances assumed, Levene's test $p > .05$, $t(699)$ = 1.546, $p > .05$; small effect size = .058). Interestingly, the "mildly innovative" sample perceived the products to be slightly more complex than the "highly innovative" sample. However, such are negligibly small. Regarding the *SD*s of the complexity scores, there is a moderate variance in the scores in each of the groups, with the mean *SD* figure in the "mildly innovative" sample (1.479) slightly larger than the "highly innovative" sample mean SD (1.436). The sample composition of four diverse products comprising the estimates is likely to be a rational explanation for the moderate size of the SD figures. Considering these SD in relation to the mean figures, it can be deduced the vast majority of respondents do not perceive the subject products to be complex (complexity items < 4), for both samples.

Table 34: *Complexity* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Complexity_1		1.941	1.365	1.885	1.357	0.056	0.008
Complexity_2	COMPLEXITY	2.079	1.498	1.876	1.364	0.203	0.134
Complexity_3		2.374	1.575	2.161	1.590	0.213	-0.015
Complexity_4		-	-	2.052	1.431	-	-

Examining the bootstrap-adjusted CFA estimates, in both samples (see Tables 35 and 36), the loadings of the items on the *Complexity* factor are empirically strong (mean = 1.089 and .955). Standardized regression weights are also strong, with mean figures of .831 and .793 corresponding to AVE figures of .697 ("mildly innovative") and .643 ("highly innovative") for *Complexity* in the two samples, suggesting an adequate amount of variance is explained in each variable (both exceeding Danelon and Salay's 2012 criterion of .500); thus supporting convergent validity. Examining individual SMC figures reveals the variance explained in item 4 is low (< .500). Should such be discovered in further replications, there may be cause for concern, however as the item loads significantly in this sample and is close to meeting advised criterions, it is deemed appropriate for retention in the "highly innovative" *Complexity* measurement model, and is supported as a methodological contribution to this

study. Examining the composite reliability of the construct, in both samples the reliability of the estimate is very strong (.873 and .877), whilst the average inter-item correlations is acceptable, with AIIC figures of .688 and .647 suggesting a moderate degree of conceptual breadth. With exception of the presence of item 4 in the "highly innovative" sample, the two measurement models exhibit no salient distinctions, and are both considered valid for further empirical application.

Table 35: *Complexity* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Complex._1		1.000	-	-	-	.851	.725			
Complex._2	COMPLEX.$^{\$}$	1.191	.081	14.704	***	.919	.844	.697	.873	.688
Complex._3		.986	.077	12.805	***	.723	.523			

*** $p < .001$
$^{\$}$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 36: *Complexity* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Complex._1		1.000	-	-	-	.867	.752			
Complex._2	COMPLEX.	1.078	.109	9.890	***	.924	.853	.643	.877	.647
Complex._3^{rc}		.976	.127	7.685	***	.718	.515			
Complex._4^{rc}		.812	.109	7.450	***	.663	.439			

*** $p < .001$
^{rc} Residual terms correlated

Relative advantage:

Rogers (1995, 2003) explores *Relative Advantage* as a form of enhanced usefulness an innovation provides. As innovation acceptance requires consumers to break their status quo and adopt an innovation over the existing alternatives, a product is likely to be accepted if it is perceived as more useful than existing alternatives, not just useful in its own right. Specifically speaking, the items of *Relative Advantage* require respondents to make a comparison of the usefulness of the innovation (i.e. accomplishing tasks, increasing productivity, and quality perceptions) relative to existing alternative products; an important conceptual nuance purposely refined to the innovation acceptance context.

Examining the means of the *Relative Advantage* construct amongst the two samples (as exhibited in Table 37), the "mildly innovative" sample perceives the innovations to not offer relative advantage, as represented by the item mean of 3.814. Such a score suggests respondents do not strongly disagree

Figure 12: *Relative advantage* **measurement model (innovative samples, *n* = 353 and *n* = 348)**
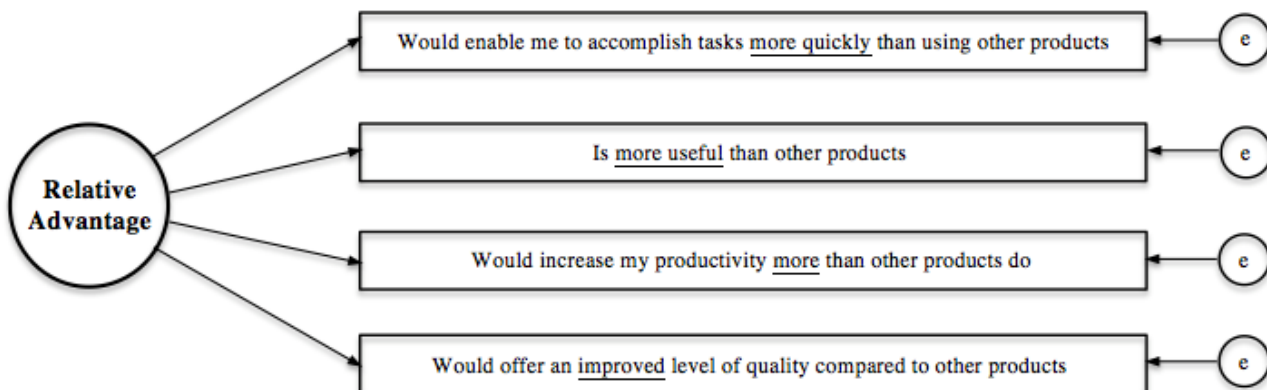
with this notion, but only slightly disagree. Alternatively, the "highly innovative" sample perceives the same innovations to be somewhat advantageous over alternatives, with a mean construct score of 4.665. This higher perception of enhanced usefulness is likely a result of respondents of the "highly innovative" sample being more impressed or wowed by the product, or the perhaps perception of higher innovativeness may encourage a more advantageous perception? Research such as Bruner and Kumar (2005), and Kulviwat et al. (2007) have discovered an empirical relationship between PEOU (*Complexity*) and PU (*Relative Advantage*), thus perhaps the "highly innovative" sample sees the innovations offering enhanced usefulness, as they are not perceived as complex to interact with (mean = 1.994). Nonetheless, such perceptions held by the "highly innovative" sample are on average .851 (22.3%) higher in this sample, and as identified in t-test analysis [*Relative Advantage* (equal variances assumed, Levene's test $p > .05$), $t(699) = -7.948$, $p < .05$; medium effect size = .288], are statistically significantly different in the two samples. As is likely to be observed in all constructs (and thus not subsequently discussed unless particularly salient), the *SD* figures are again moderate (mean = 1.568, and 1.596), likely a result of the variety of innovations examined. Furthermore, as suggested by the mean *SD* discrepancy figure of .027, they do not dramatically differ across samples.

Table 37: *Relative advantage* **item descriptives (innovative samples, *n* = 353 and *n* = 348)**

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Rel_Adv_1		3.779	1.656	4.503	1.662	-0.724	-0.006
Rel_Adv_2	RELATIVE	3.833	1.542	4.819	1.556	-0.986	-0.014
Rel_Adv_3	ADVANTAGE	3.603	1.560	4.457	1.644	-0.854	-0.084
Rel_Adv_4		4.042	1.515	4.882	1.520	-0.840	-0.005

Upon assessment of the CFA estimate figures for the two samples as observed in Tables 38 and 39 (of which the "highly innovative" sample estimates are bootstrap adjusted), the highly statistically significant regression weights (both standardized and unstandardized) all suggest each item loads strongly on the *Relative Advantage* construct. Additionally, the variance explained in each item by the construct as represented by the AVE figures (.727 and .758) are all very adequate and in support of convergent validity, as is the reliability estimates of the construct, whilst conceptual slenderness is again supported. Encouragingly, the measurement models in the two samples are empirically similar despite the reasonable differences in item scores. Such a finding suggests the latent *Relative Advantage* construct is a very good representation of the variation in the data observed between these items, condoning its further application in structural analyses.

Table 38: *Relative advantage* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Rel_Adv_1[rc]		1.000	-	-	-	.871	.759			
Rel_Adv_2	REL.	.906	.046	19.793	***	.847	.718	.727	.914	.715
Rel_Adv_3	ADV.	.954	.045	20.985	***	.881	.777			
Rel_Adv_4[rc]		.851	.050	17.058	***	.810	.656			

*** *p* < .001
[rc] Residual terms correlated

Table 39: *Relative advantage* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Rel_Adv_1	REL.	1.000	-	-	-	.863	.744			
Rel_Adv_2	ADV.	.934	.048	19.458	***	.861	.742	.758	.926	.756
Rel_Adv_3	$	1.059	.037	28.622	***	.922	.850			
Rel_Adv_4		.884	.057	15.509	***	.833	.694			

*** *p* < .001
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Social influences:

The influence of peer groups is likely to play a role in breaking from one's status quo in accepting an innovation. Evidently, such a construct is a key component (in a slightly different composition) of several theoretical frameworks (i.e. the TRA, TPB, and CAT), and with this in mind, *Social Influence's* role in innovation acceptance is scrutinized amongst the two innovative samples.

Figure 13: *Social influences* **measurement model (innovative samples,** *n* **= 353 and** *n* **= 348)**
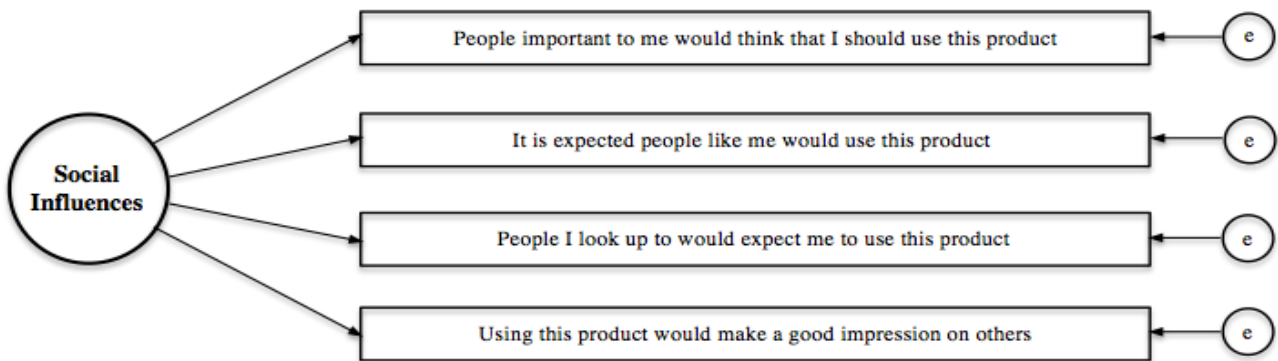
Regarding the mean scores for *Social Influences* as observed in Table 40, both samples do not perceive the pressure of social groups regarding use of the innovations. Such may be a result of their personality types (i.e. not highly susceptible to normative influences) or purely that the innovations examined or experimental environment under which this occurred is not a conduit for normative social pressures. Assessing the two innovativeness groups, the "mildly innovative" sample exhibits a mean *Social Influences* score of 2.713, with again a relatively high *SD* figure. Such item figures are quite strong in their disagreement with experience of these influences, particularly compared to the "highly innovative" sample, which exhibits a mean of 3.665, and is on average .953 (or 35.10%) higher. Such a score is much closer to the point of agreement, or at least neutrality, and as demonstrated by t-tests

Table 40: *Social influences* **item descriptives (innovative samples,** *n* **= 353 and** *n* **= 348)**

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Social_Infl_1		2.711	1.674	3.644	1.872	-0.933	-0.198
Social_Infl_2	SOCIAL	2.966	1.771	3.784	1.853	-0.818	-0.082
Social_Infl_3	INFLUENCES	2.425	1.519	3.279	1.797	-0.854	-0.278
Social_Infl_4		2.748	1.624	3.954	1.815	-1.206	-0.191

[*Social influences* *t*-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(699) = -8.195$, $p < .05$; medium effect size = .296] is statistically significantly different from that of the "highly innovative" sample. Like in the aforementioned discussion, it is not clear which influences the other, however increasing perceptions of innovativeness are clearly related to increasing experience of social influences. Perhaps these social pressures are encouraging respondents to perceive, or at least indicate a higher perception of innovativeness, or alternatively as one perceives an innovation to be higher, they themselves experience higher pressure to conform to social norms?

Examining the CFA estimates of *Social Influences* (bootstrap-adjusted in the case of the "highly innovative" sample) as observed in Tables 41 and 42, yet again the factor loadings are comparable (means = .861 and .927), with each highly statistically significant. Standardized regression weights and the associated SMC values are also healthy and comparable, with the AVE figures of .719 and .715 each adequate and in support of convergent validity. Reliability of the construct in each of the samples is very strong (.911 and .909), indicating strong internal consistency, whilst the AIIC figures again suggest conceptual narrowness.

Table 41: *Social influences* **CFA estimates (mildly innovative, *n* = 353)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Social_Infl_1	SOC. INFL. $	1.000	-	-	-	.924	.854	.719	.911	.721
Social_Infl_2		.934	.045	20.756	***	.815	.665			
Social_Infl_3rc		.858	.044	19.500	***	.873	.763			
Social_Infl_4rc		.792	.057	13.895	***	.753	.567			

*** p < .001
rc   Residual terms correlated
$ Estimates mildly non-normally distributed (skew c.r. > 2, kurtosis c.r. > 7), thus figures are bootstrap estimates (1000 rotations)

Table 42: *Social influences* **CFA estimates (highly innovative, *n* = 353)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Social_Infl_1	SOC. INFL.	1.000	-	-	-	.873	.763	.715	.909	.698
Social_Infl_2rc		.936	.049	19.052	***	.826	.683			
Social_Infl_3		.976	.044	22.264	***	.888	.789			
Social_Infl_4rc		.870	.050	17.500	***	.784	.614			

*** p < .001
rc   Residual terms correlated

Image:

As a driver of acceptance, *Image* is explored in this research as an aggregate of favourable social benefits received from accepting a new product innovation. Such is represented through the perceived social benefits gained through the consumption of innovations in the form of uniqueness (Tian, Bearden, and Hunter, 2001), status (Han, Nunes, and Dreze, 2010), envy (Richins, 1997; Bagozzi and Lee, 1999), and self-image (Sirgy, 1985). Indubitably a key benefit of any consumption decision, in this research *Image* is proposed to directly relate to consumer's attitudes held towards new product innovations. Interestingly though, a different composition is formed in each of the innovativeness samples, with the perceptions of status not empirically related in he "mildly innovative" sample, whilst the desire to adhere to one's self-image not salient in the "highly innovative" sample. Due to the

experimental nature of the construct, such may be spurious. However, possible explanation may lie in that displaying or at least being perceived as wealthy or socially affluent (i.e. status) may not be as related with innovations perceived to be only "somewhat innovative", yet as the perceptions of innovativeness increase, such a factor becomes influential at the expense of reflecting an image to others consistent with how one sees themselves. Perhaps the samples in this study do not see themselves as wealthy individuals, considering only 11.9% of respondents in the "mildly innovative" and 21.5% in the "highly innovative" sample earn over $60,000 annually. Resultantly, mildly innovative products may not express status (hence their lack of relation with the construct), and as the "highly innovative" sample itself does not possess status (at least in the form of high income), more innovative products may display status, but it is not consistent with how they see themselves; hence its omission.

Figure 14: *Image* measurement model (innovative samples, *n* = 353 and *n* = 348)*
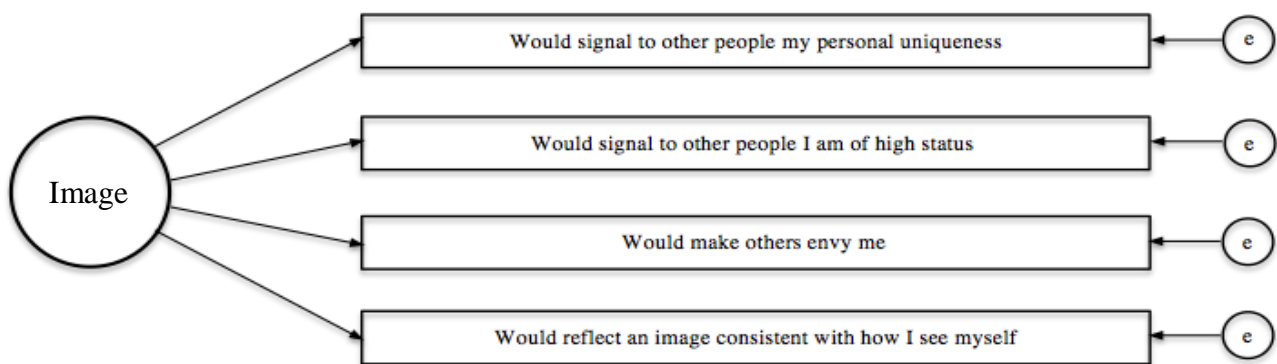
* Item 2 omitted from "mildly innovative" sample, item 4 omitted from "highly innovative" sample

Examining the item means of the *Image* construct, there is some variance displayed. The mean item score for the "mildly innovative" sample of 3.101 is decidedly smaller than that of the "highly innovative" sample of 3.782. Such suggests the social benefits derived from the products are higher for those respondents who perceive the products to be more innovative. Having said that, as most are still in disagreement with the scale items, the innovations are not quite at the point of being widely recognized as socially beneficial. However, as the composition of the constructs is not identical, it is not appropriate to undertake t-tests to compare the means at the factor level, yet from basic inference the "highly innovative" sample does clearly perceive the products to hold more social capital. At the individual item level, the "highly innovative" sample perceives the innovations to be substantially more effacious at signaling personal uniqueness to others, so much so that they do agree with the statement (4.471), whilst the "mildly innovative" sample does not (3.462). From a statistical perspective, *t*-test analysis indicates the difference observed between the mean item scores in these

two samples is statistically significant [*Image* (equal variances assumed, Levene's test $p > .05$), $t(699)$ = -8.315 $p < .05$; medium effect size = .300]. Furthermore, these individuals also perceive the innovations more equipped to make others envy them. Perhaps these come from an inflated perception of the social value of the product that comes with higher perceptions of innovativeness? Regarding observed standard deviations, the observed figures again suggest the perceptions of Image are quite different for some of the innovations.

Table 43: *Image* **item descriptives (innovative samples,** *n* **= 353 and** *n* **= 348)**

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Image_1		3.462	1.738	4.471	1.653	-1.009	0.085
Image_2	IMAGE	-	-	3.259	1.733	-	-
Image _3		2.742	1.604	3.615	1.784	-0.873	-0.180
Image _4		3.099	1.646	-	-	-	-

In inspection of *Image's* CFA estimates (see Tables 44 and 45), of which both samples are bootstrap-adjusted, the factor loadings are again highly significant from a statistical perspective. However, examining the standardized estimates and the associated SMC figures does bear some cause for concern. Whilst the AVE figure in each of the samples is in support of convergent validity (or at least extremely close to it in the case of the "mildly innovative" sample), a few of the SMC figures for the individual items are a little concerning. The items representing personal uniqueness (.464) and envy (.485) in the "mildly innovative" sample, and that representing uniqueness in the "highly innovative" sample (.440), do not quite meet advised empirical cut-offs (Chin and Todd, 1995). Whilst the variance explained in the items by the latent construct are not alarmingly miniscule, they are less than desirable and further research will need to examine their empirical rigour. It is likely such estimates are observed due to the disparate nature of the items and their ad-hoc aggregation, but as the AVE figures for the construct are acceptable, the items are retained in the construct. Examining the AIIC values of .495 and .577, such figures represent conceptual breadth, falling within Clark and Watson's (1995) desired range (at least from a mean perspective) of .15-.50. Herein the empirical trade-off of conceptual breadth vs. unidimensionality is demonstrated, as the constructs cover wide conceptual ground; but do so at the expense of moderate variance explained by the latent construct; no doubt a consequence of the diverse nature of the construct.

Table 44: *Image* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Image_1		1.000	-	-	-	.681	.464			
Image _3	IMAGE$	.947	.103	9.194	***	.696	.485	.496	.746	.495
Image _4		1.031	.127	8.118	***	.737	.543			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 45: *Image* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Image_1		1.000	-	-	-	.663	.440			
Image_2	IMAGE$	1.326	.132	10.045	***	.833	.694	.585	.808	.577
Image _3		1.294	.125	10.352	***	.791	.626			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Perceived value for money:

Perceptions of financial value are a likely key player in innovation acceptance, particularly as the acceptance of an innovation requires substantial incentive, or at least the absence of disincentives, to enhance its prospects of a consumer breaking their status quo to avoid resistance. Evidently, the construct is examined amongst the two innovativeness samples as a likely driver of innovation acceptance. Exploring item descriptives for the *P.V.F.M.* construct (see Table 46), the perceptions of value for money are substantially different across the two samples, with the mean *PVFM* figure 3.964 for the mildly innovative sample, and 4.875 for the "highly innovative" sample. Such scores are statistically different [*P.V.F.M.* *t*-test indicates significant difference in means (equal variances assumed, Levene's test *p* > .05), *t*(699) = -8.840, *p* < .05; medium effect size = .317]. From a

Figure 15: *Perceived value for money* measurement model (innovative samples, *n* = 353 and *n* = 348)
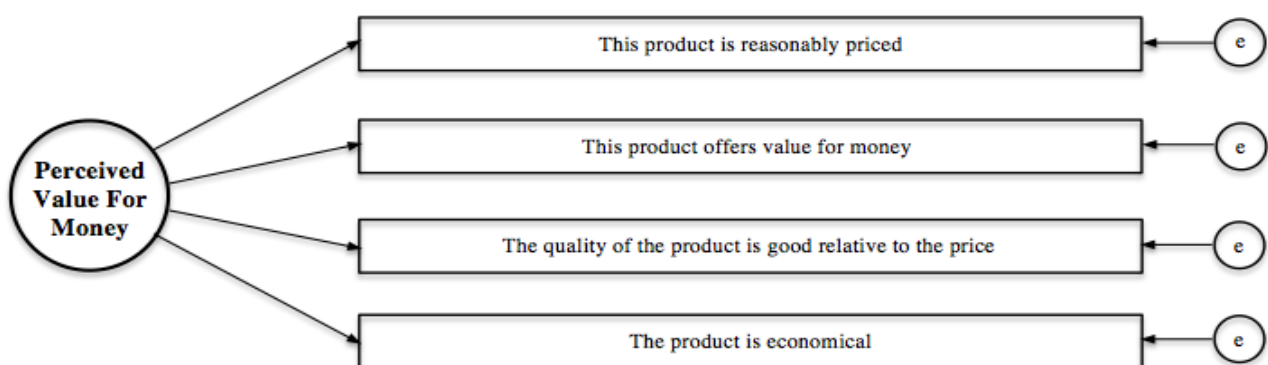
conceptual perspective, they are profoundly different as the perception of offering financial value is indifferent for the "mildly innovative" sample, whilst the "highly innovative" sample is in quite strong agreement. Such a discovery may suggest that a perception of innovativeness is of some value to consumers, as it is associated with them perceiving an innovation to offer higher financial value. Perhaps the breaking of the status quo to persuade consumers to adopt an innovation can more effectively be achieved if perceptions of innovativeness are increased then? Evidently, *P.V.F.M.* is likely to play an important role in subsequent structural analyses. Examining the *SD*s, perceptions are again varied in both samples, likely a consequence of the variety of innovations examined.

Table 46: *Perceived value for money* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
PVFM_1		4.000	1.719	4.851	1.605	-0.851	0.114
PVFM_2	PVFM	3.901	1.501	4.954	1.481	-1.053	0.020
PVFM_3		4.207	1.467	5.052	1.378	-0.845	0.089
PVFM_4		3.748	1.547	4.644	1.580	-0.896	-0.033

Tables 47 and 48 reveal the (bootstrap-adjusted) results of CFA of the *P.V.F.M.* construct. Of the observed results, the factor loadings are relatively comparable, however the mean factor loading of .777 for the "mildly innovative" sample and .862 for the "highly innovative" sample represents a 10.94% greater rise in the scale items for the same experience in the latent construct in the more innovative sample. Considering the mean score for *P.V.F.M.* in the "highly innovative" sample is 23.56% greater than that of the "mildly innovative" sample (not including item 1, as its factor loading is not interpretable), perhaps the increased perception of innovativeness is to explain for the greater observed increase in *P.V.F.M.* scale items in this "highly innovative" sample. Such would suggest perceptions of greater innovativeness enhance the perception of financial value influences a respondent's response to the *P.V.F.M.* scale items, and in this sample, may have had a role to play in "highly innovative" respondents perceiving the innovations to offer value for money whilst the "mildly innovative" sample does not. Future replication of this study would be needed to explore this possible influence, as it could in itself offer great conceptual value to practitioners. Examining the SRWs, the figures are relatively comparable across the two samples to that of the unstandardized (means = .836 and .739), the variance explained in the items by the latent constructs are very acceptable, as indicated by the strong AVE figures of .704 and .739. Further interpretation of CR suggests very strong reliability, whilst AIIC values hint to quite narrow conceptual breadth. In light of the aforementioned

discussion, the parameter estimates of *P.V.F.M.* in both these samples are supported as very valid and suitable for further application.

Table 47: *Perceived value for money* **CFA estimates (mildly innovative, *n* = 353)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
PVFM_1		1.000	-	-	-	.913	.834			
PVFM_2	P.V.F.M.$	.801	.038	20.931	***	.837	.700	.704	.905	.698
PVFM_3		.792	.036	22.025	***	.847	.717			
PVFM_4		.737	.043	17.152	***	.748	.559			

*** $p < .001$
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 48: *Perceived value for money* **CFA estimates (highly innovative, *n* = 348)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
PVFM_1		1.000	-	-	-	.903	.816			
PVFM_2	P.V.F.M.$	.909	.036	25.250	***	.889	.791	.739	.919	.738
PVFM_3		.785	.053	14.811	***	.825	.681			
PVFM_4		.891	.044	20.250	***	.817	.668			

*** $p < .001$
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Compatibility:

As previously discussed, the perception of an innovation's compatibility with one's lifestyle is likely to play an influential role in their acceptance of an innovation. Innovations are disruptive, new, and generally unfamiliar; as a result they are often irrelevant or incompatible with individual's lifestyles, needs and wants, or behavioural practices. Herein, perceptions of compatibility with one's lifestyle and usage needs may play a vital role in understanding what drives an individual to break from their status quo and accept an innovation.

Figure 16: *Compatibility* **measurement model (innovative samples, *n* = 353 and *n* = 348)**
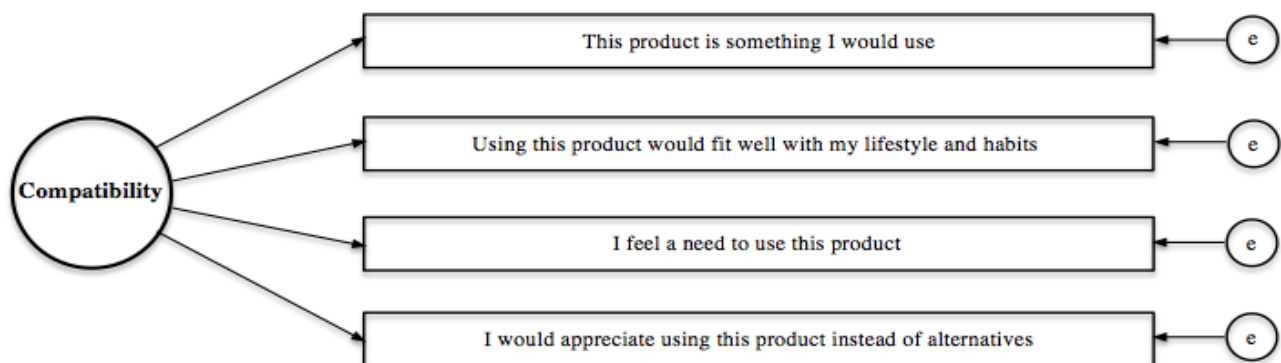
Examining item descriptives of *Compatibility* in these two innovative samples, the mean scores of how compatible an innovation is appears to be quite distinct. Examining Table 49, the mean item score for the "mildly innovative" sample is 3.674, whilst such a score is 4.767 for the "highly innovative" sample. Whilst this is a substantial discrepancy (1.093 on average), like the *P.V.F.M.* samples, what is more profound is that the "mildly innovative" sample on average disagrees with the suggestion that the subject innovations offer *Compatibility*, whilst the "highly innovative" sample does not. As indicated by *t*-test analysis [*Compatibility* *t*-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(699) = -8.741$, $p < .05$; medium effect size = .314], the mean item scores are statistically significantly different. Herein, for examination of the same products, respondents who perceive the innovations to be more innovative also perceive them to offer more *Compatibility*. Such may be a result of the positive *Compatibility* perception occurring when respondents see a high level of novelty or newness in the products. However, such could also be existent as those consumers who see the products as being more innovative, subsequently identifying more of a need or use for the product instead of existing alternatives. Perhaps those who perceive the products to be only mildly innovative do not recognize any use for the products, or needs it may satisfy that existing alternatives cannot?

Inspecting the *SD* figures does broaden the perspective though, as their large size for both samples (averaging 1.831 and 1.860) suggests that a wide variance of scores exists, and the scores cluster quite widely around these mean figures. Considering this wide distribution of scores, it is likely that some respondents in the "mildly innovative" sample have positive *Compatibility* perceptions, whilst some in the "highly innovative" sample may have negative *Compatibility* perceptions. Such also suggests some respondents may have very strong positive perceptions in the "highly innovative" sample, whilst some in the "mildly innovative" sample may have quite negative *Compatibility* perceptions. In light of these observed differences in the construct between the two innovativeness samples, it appears likely perceptions of *Compatibility* may play some role in innovation acceptance.

Table 49: *Compatibility* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Compatibil._1		3.963	1.930	5.057	1.885	-1.094	0.045
Compatibil._2	COMPAT.	3.734	1.950	4.759	1.850	-1.025	0.100
Compatibil._3		3.110	1.778	4.299	1.850	-1.189	-0.072
Compatibil._4		3.890	1.666	4.954	1.856	-1.064	-0.190

In assessing the CFA estimates of the construct, as estimated in Tables 50 and 51, the regression weights are all highly statistically significant, large in size, and relatively comparable across the two samples. Evidently, it is inferred the items load strongly on the latent *Compatibility* construct. The SRW figures in both samples are quite high (mean of .869 and .888), hence the associated SMC figures are all very adequate, and the AVE figures (.758 and .792) are in strong support of convergent validity for both samples. In light of such estimates, the *Compatibility* measurement model is suitable for further examination in both the innovativeness samples.

Table 50: *Compatibility* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Compat._1		1.000	-	-	-	.935	.875			
Compat._2	COMPAT.	.946	.037	25.831	***	.875	.766	.758	.926	.754
Compat._3		.838	.036	23.579	***	.850	.723			
Compat._4		.751	.035	21.501	***	.814	.662			

*** $p < .001$

Table 51: *Compatibility* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Compat._1		1.000	-	-	-	.940	.884			
Compat._2	COMPAT.	.939	.033	28.455	***	.902	.813	.792	.938	.788
Compat._3		.923	.033	27.970	***	.883	.779			
Compat._4		.754	.038	19.842	***	.826	.683			

*** $p < .001$

Innovativeness:

The behaviour of individuals with regards to adopting new products (within a certain product category) is an obvious candidate for examination of consumption behaviour in this research. Foxall, Goldsmith and Brown (1998; p. 41) define personal innovativeness as "the tendency to buy new products in a particular product category soon after they appear in the market and relatively earlier than most other consumers in the market segment". Evidently, the construct is employed in adoption studies, with Beldona et al. (2004) discovering consumers with higher personal innovativeness are more prepared to take risks in consumption. Furthermore, research (such as that of Venkatesh and Davis, 2000) supports the influence of personal innovativeness on behavioural outcomes of IT acceptance, online shopping (Citrin et al., 2000), and IT innovations (Yi, Fielder and Park, 2006) amongst many others.

Figure 17: *Innovativeness* measurement model (innovative samples, *n* = 353 and *n* = 348)
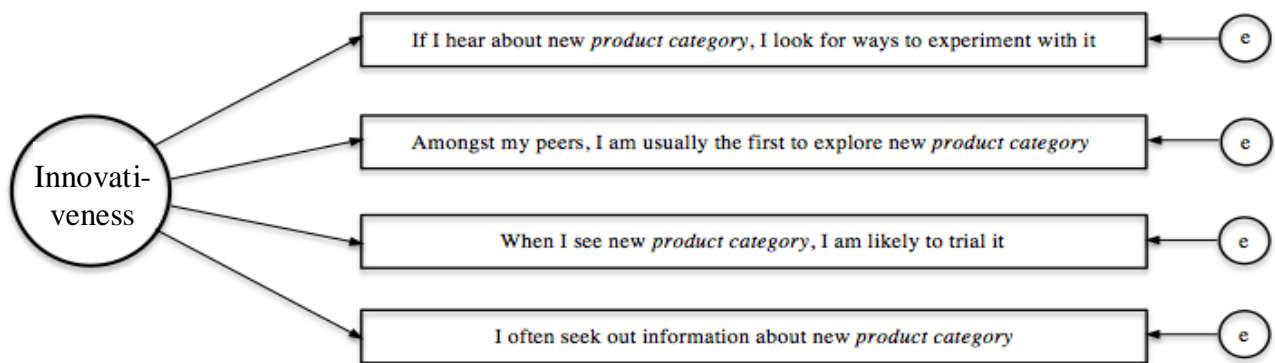
Regarding the conceptualization of the construct, some individuals possess a stronger disposition to experimenting with new products of certain categories, thus may be more likely to break from their status quo and accept a new innovation. Herein, this four-item *Innovativeness* scale examines the construct from the perspective of trialing or pre-adoption investigation of a product within a specific category, hence a domain specific measure. As individuals are likely to be innovative for some product categories (i.e. computer products, musical instruments, fashion items, etc.) but not necessarily others, *Innovativeness* is measured in this study in a manner that is limited to a broad, yet focused product category (specific to each product stimulus). To illustrate, just because a consumer researches and tries on each new seasonal range of designer couture within weeks of its release at their local boutique, does not mean they are going to go online and captivate themselves with a product review of the new *Electro Harmonix* delay (guitar effects) pedal. Furthermore, in the interest of not limiting respondents' evaluations of the construct, or framing their response with any bias, the product category is only mentioned in the scale item, respondents are not given examples of specific products within that category.

Examining item means as observed in Table 52, the mean score of the "mildly innovative" sample (3.378) is clearly in disagreement with the scale items, whilst the "highly innovative" mean (3.968) is neutral in its assessment. Whilst these scores are not dramatically different from each other, they are statistically speaking, significantly different [*Innovativeness* t-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(699) = -5.051$, $p < .05$; small-medium effect size = .188]. Furthermore, if not including the item score for item 2 in the mean, for the "highly innovative" sample the mean figure rises to 4.115 and is quite positive an evaluation of respondents own innovative behaviour, further enhancing the difference in means across samples. Perhaps item scores for item 2 are substantially lower as this item requires a direct assessment relevant to one's

peers; peers of which may be highly innovative for some individuals, hence they do not consider themselves as innovative for that product category in comparison. Similar to many of the aforementioned constructs, the *SD* figures of the item means are also quite high (means = 1.772 and 1.813) suggesting a similarly wide variance in the observed scores. Resultantly, both samples are comprised of individuals who consider themselves to be highly innovative and those who do not consider themselves innovative, but the "highly innovative" sample is on average 17.47% higher in such perceptions.

Table 52: *Innovativeness* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Innov_1		3.450	1.778	4.109	1.803	-0.659	-0.025
Innov_2	INNOV.	3.099	1.769	3.598	1.801	-0.499	-0.032
Innov_3		3.380	1.693	4.089	1.784	-0.709	-0.091
Innov_4		3.584	1.848	4.147	1.864	-0.563	-0.016

In exploring the relationship between *Innovativeness* and perceptions of product innovativeness, a number of explanations may exist for the higher perceptions of innovativeness made by (self-assessed) more innovative people. Possibly individuals who are more personally innovative are also more experienced with new products, and more intelligent on the topic, thus are better able to identify an innovative product. Alternatively, because individuals assess the subject product to be quite innovative, they may make an assessment of themselves that is more in line with a higher history of innovative behaviour. Nonetheless, *Innovativeness* appears to be invaluable in the empirical assessment of innovative behaviour.

Examining the CFA estimates of the *Innovativeness* construct in the two samples, Tables 53 and 54 reveal comparable results in all estimates. The measurement models exhibit strong statistically significant regression weights, high proportions of variance explained, strong convergent validity and reliability, and quite narrow conceptual breadth. In light of such assessment, the constructs are empirically sound and suited for further structural analyses.

Table 53: *Innovativeness* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Innov_1		1.000	-	-	-	.887	.787			
Innov_2[rc]	INNOV.	.902	.050	18.095	***	.804	.647	.702	.904	.706
Innov_3		.911	.046	19.999	***	.849	.721			
Innov_4[rc]		.930	.053	17.549	***	.794	.630			

*** *p* < .001
[rc] Residual terms correlated

Table 54: *Innovativeness* **CFA estimates (highly innovative,** *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Innov_1		1.000	-	-	-	.858	.736			
Innov_2	INNOV.	.995	.049	20.306	***	.854	.730	.729	.915	.730
Innov_3		.979	.050	19.580	***	.849	.720			
Innov_4		1.033	.052	19.865	***	.857	.735			

*** $p < .001$

Knowledge:

Knowledge perceptions, in the form of information stored in memory, are identified as salient in information search, information processing, and decision-making (Carlson et al., 2009), with such a construct also demonstrated to increase consumer preferences for innovations (Moreau, Lehmann, and Markman, 2001). Regarding specific types of knowledge, this research examines subjective (as opposed to objective) knowledge, which exists as an individual's interpretation of how much they know, not what is discovered through an independent test (Brucks, 1985). Regarding *Knowledge's* empirical impact, Park, Mothersbaugh, and Feick (1994) suggest subjective knowledge is more influential in product evaluation than objective forms of knowledge, with the construct discovered to positively influence attitudes towards consumption (Phillips, Asperin, and Wolfe, 2013), and be directly associated with consumption (Pieniak, Aertsens and Verbeke, 2010). It is noted, in the "mildly innovative" sample, item 4 is removed from the measurement model as it contributes to empirical model ill fit, and is inadequately explained by the latent construct.

In this research, it is proposed that knowledge of the product category of which an innovation belongs to is of greater salience than knowledge for that specific innovation. As innovations are usually new to the market, likely to possess a small degree of continuity, and not widely adopted, it is unlikely consumers would think they have high knowledge of innovations in the introductory stage of the product's life cycle. Evidently, existing knowledge of products within the product category is likely to be salient as a point of reference or familiarity, and play an influential role in innovation acceptance. As *Knowledge* levels may be associated with higher competence, attitudinal assessments, or consumer confidence, the construct is examined in these two samples as a potential player in breaking from one's status quo and a precursor to acceptance of an innovation.

Figure 18: *Knowledge* measurement model (innovative samples, *n* = 353 and *n* = 348)*
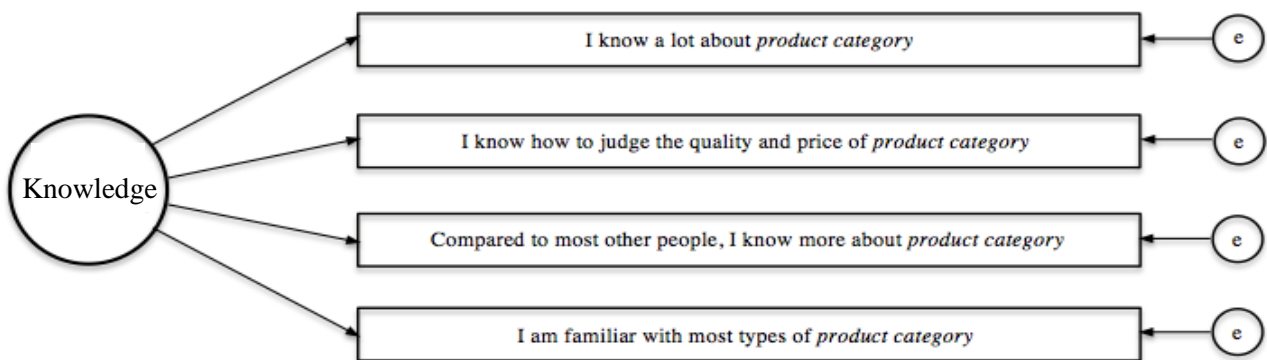
* Item 4 omitted from mildly innovative sample

Examining the item means of *Knowledge* in the two samples, as exhibited in Table 55, "mildly innovative" respondents do not agree that they possess sufficient knowledge of the product category (mean = 3.768), whilst those of the "highly innovative" sample do slightly agree with these scale items (mean = 4.153). The proximity of the means to the mid-point of "4" suggest that despite their observed positive or negative agreement, both samples exhibit general neutrality, suggesting the level of innovativeness perceived of a product is not likely to be related with the knowledge one believes they possess of it. Furthermore, the item descriptives of *Knowledge* in both samples paint a similarly neutral picture, yet exhibit a statistically small significant difference [*Knowledge t*-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(699) = -2.593$, $p < .05$; small effect size = .098]. Of significance though, respondents with higher knowledge about the product category perceive the product to be more innovative. Perhaps this suggests the products are actually quite innovative and they are better able to identify this? Such may infer that for an individual not particularly knowledgeable in the product category to perceive a product as innovative, the newness and sharp difference to that of existing products needs to be communicated more heavily than to those more familiar with the product category; a challenge practitioners are likely to acknowledge. Examining the *SDs* of these means, they are quite moderate in size, suggesting there is a pretty wide spread to the data. Considering the proximity to the mid point of the means, this suggests that in both samples there are respondents who agree or disagree relatively strongly with the scale items.

In examining CFA estimates of *Knowledge* (see Tables 56 and 57), of which the "highly innovative" sample estimates are bootstrap-adjusted, regression weights are highly statistically significant and relatively comparable across the two samples, however the AVE of *Knowledge* is larger in the "highly innovative" sample, suggesting overall, the latent construct explains more variance in the scale items

263

Table 55: *Knowledge* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Knowledge_1		3.816	1.537	4.086	1.721	-0.270	-0.184
Knowledge_2	KNOWLEDGE	3.966	1.561	4.466	1.631	-0.500	-0.070
Knowledge_3		3.522	1.535	3.784	1.643	-0.262	-0.108
Knowledge_4		-	-	4.276	1.660	-	-

in this sample. Nonetheless, both figures are supportive of convergent validity, and the CR estimate of .869 and .920 are in support of strong reliability, with higher AIICs observed. Such a scale is empirically adequate in both innovativeness samples, and prepared for application in further structural analyses.

Table 56: *Knowledge* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Knowl._1		1.000	-	-	-	.913	.833			
Knowl._2	KNOWL.	.810	.053	15.139	***	.728	.530	.690	.869	.682
Knowl._3		.921	.053	17.463	***	.842	.709			

*** *p* < .001

Table 57: *Knowledge* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Knowl._1		1.000	-	-	-	.896	.803			
Knowl._2	KNOWL.$	.856	.043	19.907	***	.808	.653	.742	.920	.742
Knowl._3		.931	.037	25.162	***	.872	.760			
Knowl._4		.938	.036	26.056	***	.871	.758			

*** *p* < .001
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Perceived behavioural control:

An individual's assessment of their perceived capabilities, *Perceived Behavioural Control* (*PBC*) is examined in the two innovativeness samples. Such a construct represents the assessments of abilities and constraints, and is a key component of theoretical models such as the TPB, and UTAUT (in a slighlty different contextualization). As interaction with an innovation often requires high degrees of learning or beavioural change, and is reliant upon both internal and external perceptions of competence, *PBC* is examined in this research as a key influencer in acceptance of new products. Such

Figure 19: *Perceived behavioural control* **measurement model (innovative samples, *n* = 353 and *n* = 348)**
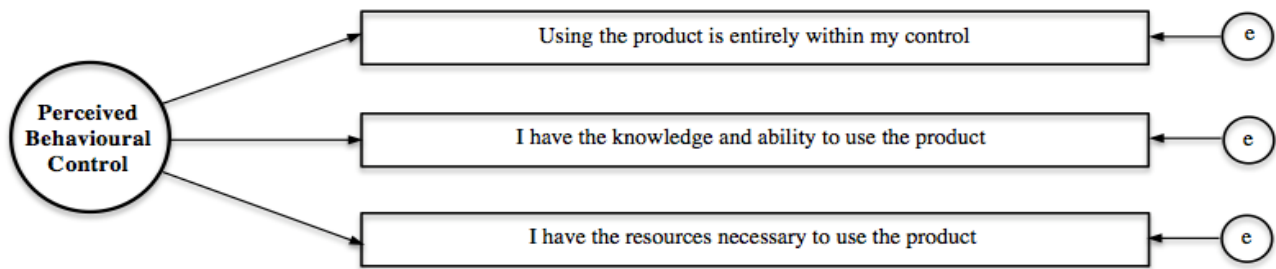
a measurement model is respecified to a three-item scale in both samples through dropping item 4 ("I could get help from others when using the product"), as it did not exhibit satisfactory SRW and SMC figures. One can expect that as an individual experiences greater control in using the subject innovation, effects of status quo bias will be reduced, and an individual is more inclined to adopt an innovation.

Examining the item means for *PBC* in the two samples, as exhibited in Table 58, the mean values (5.490 and 5.615) are strongly in the positive for both samples, suggesting respondents do believe they possess the required ability or support to use the innovations. Considering the general disagreement against perceptions of *Complexity* ("mildly innovative": 2.131, "highly innovative": 1.994), this is not surprising. As suggested by t-tests [*P.B.C.* *t*-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(699) = -2.329$, $p < .05$; small effect size = .008], these means are slightly statistically significant, revealing there is a small statistical discrepancy in the item scores for the innovativeness samples. Such an assertion may suggest perceptions of control are more related to the individual themselves and the external environment, rather than the innovativeness of the subject product. Interestingly, the *SD* estimates for the *PBC* samples (mean = 1.533 and 1.398) are quite small compared to other constructs. Thus it is inferred that despite the high scores for the constructs in both samples, the scores are generally all positive in nature and cluster closely around the mean (particularly in consideration of the diverse nature of the four innovations examined).

Interestingly, respondents do not perceive themselves as being particularly innovative in the relevant product category (the mean *Innovativeness* figure of 3.378 for the "mildly innovative" sample on average disagreed with such sentiments, whilst the "highly innovative" sample mean of 3.968 suggests such respondents perceive their innovativeness as relatively neutral), nor do they perceive their knowledge levels to be high (means = 3.768 and 4.153). Herein, it is surprising such high PBC scores

are evidenced then. As each of these constructs involve some level of competency or proficiency in interacting with an innovation, argument could be made for their conceptual association, however the scores do not appear to show similarities in the way one might expect. Such may suggest *Innovativeness*, *Knowledge*, and *Perceived Behavioural Control* do not interact together, and are not strongly related from a conceptual perspective. Alternatively, this occurrence may be a result of the low perceptions of complexity made by the two samples, leading respondents to feel comfortable in their control level of using the product despite not possessing high knowledge or personal innovativeness.

Table 58: *Perceived behavioural control* item descriptives (innovative samples, *n* = 353 and *n* = 348)

| Indicator | Latent Factor | Mildly Innovative | | Highly Innovative | | Differential | |
		Mean	SD	Mean	SD	Mean	SD
PBC_1		5.589	1.365	5.813	1.262	-0.224	0.103
PBC_2	PBC	5.524	1.574	5.471	1.337	0.053	0.237
PBC_3		5.357	1.661	5.560	1.596	-0.203	0.065

Through exploration of the *PBC* CFA estimates in the two samples (of which both samples figures are bootstrap-adjusted), Tables 59 and 60 reveal the unstandardized regression weights are relatively disparate, ranging from .899 to 1.500 in the two samples. Such suggests respondents are reacting differently in perceptions of *PBC* to the two products, as experience of the latent construct is having quite different influence on the scale items. Nonetheless though, each item does load statistically significantly on the construct (critical values ranging from 6.421–7.784), but the standardized regression weights are not so encouraging. As indicated through the SMC figures, the variance explained in item 1 in the "mildly innovative" sample, and item 2 in the "highly innovative" sample is insufficient. Such may be a result of potential conceptual bias from the dropped "item 4", or weak

Table 59: *Perceived behavioural control* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
PBC_1		1.000	-	-	-	.649	.421			
PBC_2	P.B.C.$	1.500	.212	7.075	***	.832	.692	.541	.776	.533
PBC_3		1.370	.176	7.784	***	.722	.522			

*** $p < .001$
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 60: *Perceived behavioural control* **CFA estimates (highly innovative,** *n* **= 348)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
PBC_1		1.000	-	-	-	.775	.600			
PBC_2	P.B.C.$	.899	.140	6.421	***	.652	.425	.537	.777	.536
PBC_3		1.294	.173	7.480	***	.784	.615			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

relations with the latent construct, however, as convergent validity of the construct is still sufficient in both samples (as indicated through the AVE figures of .541 and .537), further examination of this construct is required to determine its final empirical composition in this research context. Assessing reliability, the CR figures of .776 and .777 suggest the *PBC* construct is internally consistent in both samples, whilst the conceptual breadth of the constructs is quite high, as indicated by the AIIC figures of .533 and .536. In light of such findings, the CFA estimates of *PBC* in these two samples are sufficient to condone further use of the construct in structural analyses.

Consumer innovation affect:

Whilst the area has seen some academic attention (Richins, 1997; Laros and Steenkamp, 2005), the consumer innovation affect (*C.I.A.*) measurement model developed in the "Scale Development" chapter of this study (published as the *C.I.A.* by Butcher, Phau and Marcheigiani, 2013) is the first valid and extensive scale to specifically explore the affect experienced in the innovation acceptance context. The *C.I.A.* is the first of its kind to examine the affective appraisals of a consumer when exposed to a product innovation, assessing the extent to which respondents experience an emotion directed towards the subject innovation. As an empirical structure, the *C.I.A.* is separated into higher-order latent constructs of *Positive Affect* and *Negative Affect*, followed by latent first-order basic emotion clusters of *Joy, Wonder, Apathy, Trepidation, Melancholy*, and *Cynicism*. However, as the affect consumers experience towards an innovation is highly dependent on subjective interpretations of the stimulus under assessment, different compositions of affect are expected to offer salience for different contexts. Herein, in the "mildly innovative" sample of this study, the construct of *Wonder* is not empirically retained as a result of its inadequate empirical fit and validity (see Figure 20). Considering such a construct (or basic emotion cluster) explores emotions such as *Surprised, Astonished* and *Amazed*, it may be concluded products that are perceived as only mildly innovative do not elicit this sorts of affect.

In assessing the *C.I.A.* in the "highly innovative" sample, the composition of the scale also drops one basic emotion cluster in omitting *Melancholy* (see Figure 21). These scale items (*Miserable*, *Sad*, and *Depressed*) may not be experienced by consumers when they perceive a product to be highly innovative, or may be replaced by *Wonder* emotions such as *Surprise*, inhibiting their elicitation. Nevertheless, such is evidence of a distinctly different emotional experience during different perceptions of product innovativeness. An intriguing empirical nuance of the *C.I.A.* is that *Apathy* is influenced by not only an increasing negative affective state, but also a decreasing positive affective state. Such a finding is a profound contribution of the original *C.I.A.'s* development, and is successfully replicated in both these new innovativeness samples, substantiating the conceptual enlightenment of the scale development process.

Examining the *C.I.A.* item descriptives (of which figures are bootstrap-adjusted) as exhibited in Table 61, it must firstly be reminded emotion scale items are measured through a $0 - 7$ continuum, not a traditional opposing Likert scale, or a semantic differential as some emotion scales (i.e. the *PAD*) are. Thus, increasing scores (as exhibited in Table 61) represent an increase in the intensity with which that

Figure 20: *Consumer Innovation affect* **measurement model (mildly innovative,** *n* = **353)**

268
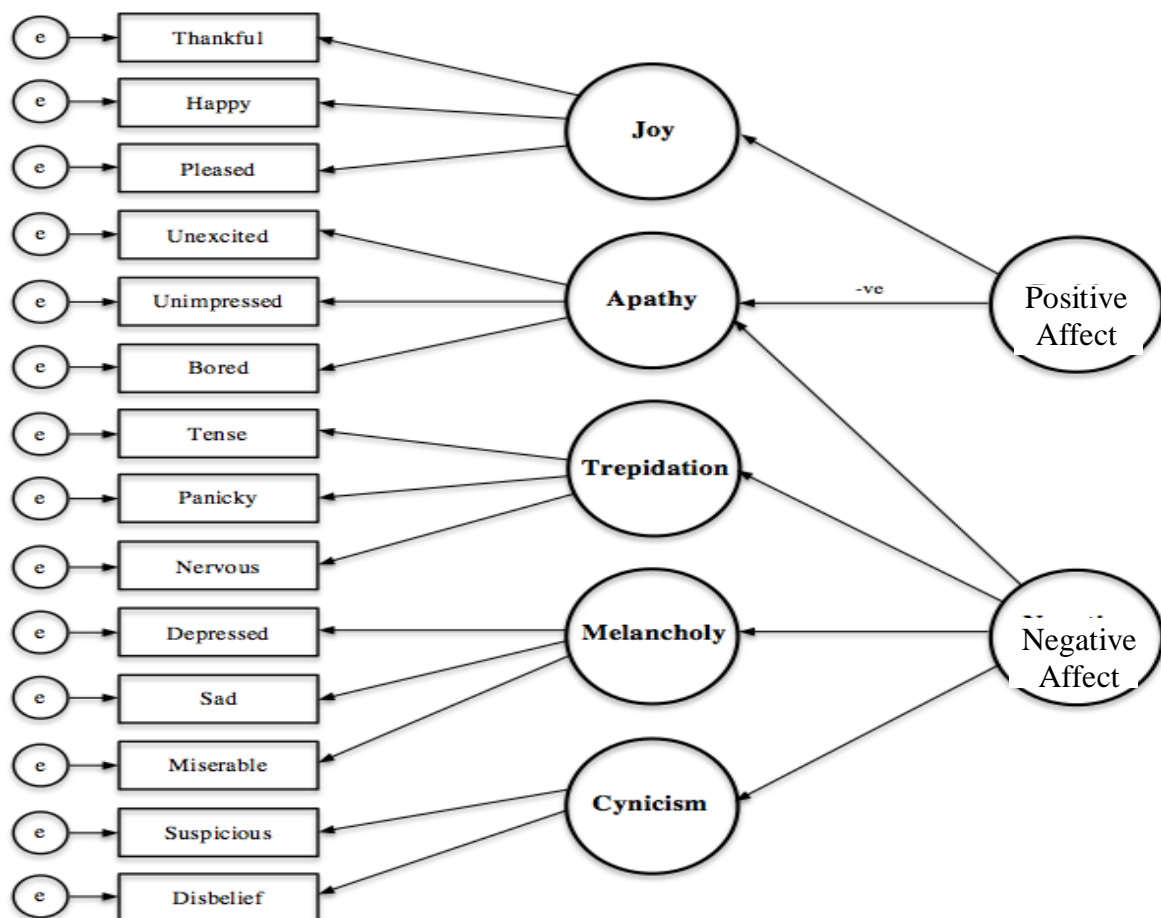
Figure 21: *Consumer innovation affect* **measurement model (highly innovative, *n* = 348)**
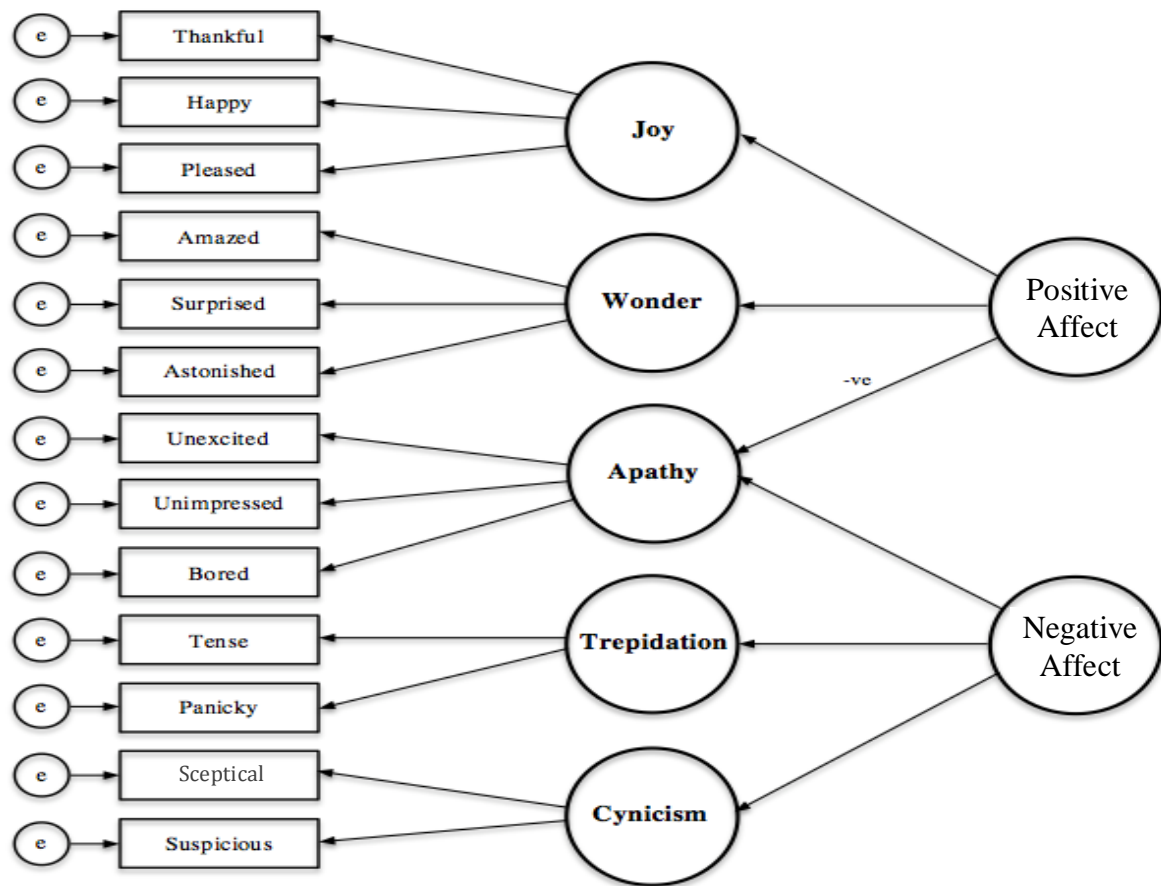
emotion is experienced, not any bi-polar assessment (see "Scale Development" chapter for further discussion). In light of this, the mean scores of the emotion items are relatively disparate across the two samples. Herein, the average score for *Joy* emotions is substantially higher [*Joy t*-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(699) = -8.632$, $p < .05$; medium effect size = .310] in the "highly innovative" sample (4.903) than the "mildly innovative" sample (3.792). Such represents a 29.30% increase in emotional intensity, suggesting those individuals who perceive an innovation to be more innovative experience such positive affect in greater intensity than those who perceive a subject product to be less innovative. The *SD* figures of such emotions are also relative comparable across the two samples (1.908 and 1.995) indicating the spread of scores is relatively even. Exploring other *Positive Affect* factors, the *Wonder* item's mean of 5.189 is particularly large for the "highly innovative" sample, suggesting these emotions are experienced in great intensity when a respondent perceives a product to be highly innovative. Whilst not retained in the "mildly innovative" sample, these emotions are experienced in these emotions are experienced in the greatest intensity of all the emotions across both samples. Of the three items comprising the factor, the means are all substantial, ranging from 4.764 – 5.503, with *SD* values also

269

quite high; a likely result of the diversity of innovations examined. Such high scores may be occurring from the sheer amazement of the sample, or the fact that such emotions are generally experienced in great intensity, and are not subtle, inactive emotions such as those related with melancholy or apathy.

Examining *Negative Affect* constructs such as *Apathy*'s item descriptives, these emotions are experienced in quite mild intensity, with mean scores of 2.968 and 2.043 for the "mildly innovative" and "highly innovative" samples respectively. Firstly it must be reminded the option of "0" exists to indicate respondents do not experience the emotion, and as these values are raw scores, these means equate to an experience of the emotion of 1.968 and 1.043 (out of 7); such is obviously quite low in intensity. Secondly, it is noted *Apathy* is experienced in greater intensity for the "mildly innovative" sample compared to the "highly innovative" sample [*Apathy t*-test indicates significant difference in means (equal variances not assumed, Levene's test $p < .05$), $t(633.345) = 7.745$, $p < .05$; medium effect size $= .294$], a finding which is not surprising, and suggests the more innovative a product is perceived to be, the less respondents are likely to be disengaged by it. Such is of substantial importance to practitioners. Examining *Trepidation*, the mean items score of 1.522 (mildly innovative) and 1.587 (highly innovative) suggest the experience of *Trepidation* is low in both samples. Examining these

Table 61: *Consumer innovation affect* **item descriptives (innovative samples, *n* = 353 and *n* = 348)**

Indicator	Latent Factor	Mildly Innovative			Highly Innovative			Differential	
		Mean	Factor	SD	Mean	Factor	SD	Mean	SD
Thankful		2.972		1.923	4.052		2.231	-1.080	0.308
Happy	JOY	4.176	3.792	1.882	5.083	4.903	1.869	-0.907	0.013
Pleased		4.227		1.920	5.575		1.885	-1.348	0.035
Amazed		-		-	5.503		2.011	-	-
Surprised	WONDER	-	-	-	5.299	5.189	1.926	-	-
Astonished		-		-	4.764		2.130	-	-
Unexcited		3.306		2.252	2.307		1.817	0.999	0.435
Unimpressed	APATHY	2.992	2.968	2.030	2.078	2.043	1.615	0.914	0.415
Bored		2.606		1.845	1.744		1.282	0.862	0.563
Tense		1.552		1.162	1.730		1.384	-0.178	0.222
Panicky	TREPI.	1.419	1.522	.956	1.443	1.587	1.016	-0.024	0.060
Nervous		1.595		1.240	-		-	-	-
Depressed		1.331		.833	-		-	-	-
Sad	MELAN.	1.329	1.370	.836	-	-	-	-	-
Miserable		1.450		1.057	-		-	-	-
Sceptical		-		-	3.063		1.999	-	-
Suspicious	CYNIC.*	2.521	2.414	1.771	2.595	2.829	1.921	-0.074	0.150
Disbelief		2.306		1.614	-		-	-	-

* To address the potential empirical limitation of a two-item Cynicism factor, the conceptually related item of Disbelief is also measured. Such an item is employed in the "Mildly innovative" sample

means, their associated *SD*s are also quite low (average of 1.119 and 1.200) suggesting that not only are the average item scores very low, but the spread of scores is also narrow, suggesting scores cluster quite closely to this mean, and there are few experiences of *Trepidation* items in high intensity. Examining means across samples, the item means for the construct in both samples do not appear to be statistically significant (*t*-test analyses is not possible due to the different composition of the factors), nonetheless, despite such low scores, *Trepidation* does share the underlying latent experience of *Negative Affect* with other constructs, indicating it is an integral component of the affect experienced through exposure to innovations. Further exploring *Negative Affect*, the aforementioned *Melancholy* emotions are also experienced in very low intensity, with a mean score of 1.370 in the "mildly innovative" sample (it is omitted from the "highly innovative" sample). Also like the aforementioned, the *SDs* of these means are low (average = .909), suggesting the vast majority of scores in this sample are below as little as 2.25 in intensity (which equates to an experience of 1.25 out of 7). An explanation for the low experience of these emotions could be found in the desirable, pleasant nature of the subject innovations, as well as the aforementioned promotional style of the industry-sourced product stimuli minimizing the experience of negative affect. Despite the low *Melancholy* (and other) item scores, it

Figure 22: *Consumer innovation affect* **factor item means ±1SD (mildly innovative, n = 353)**
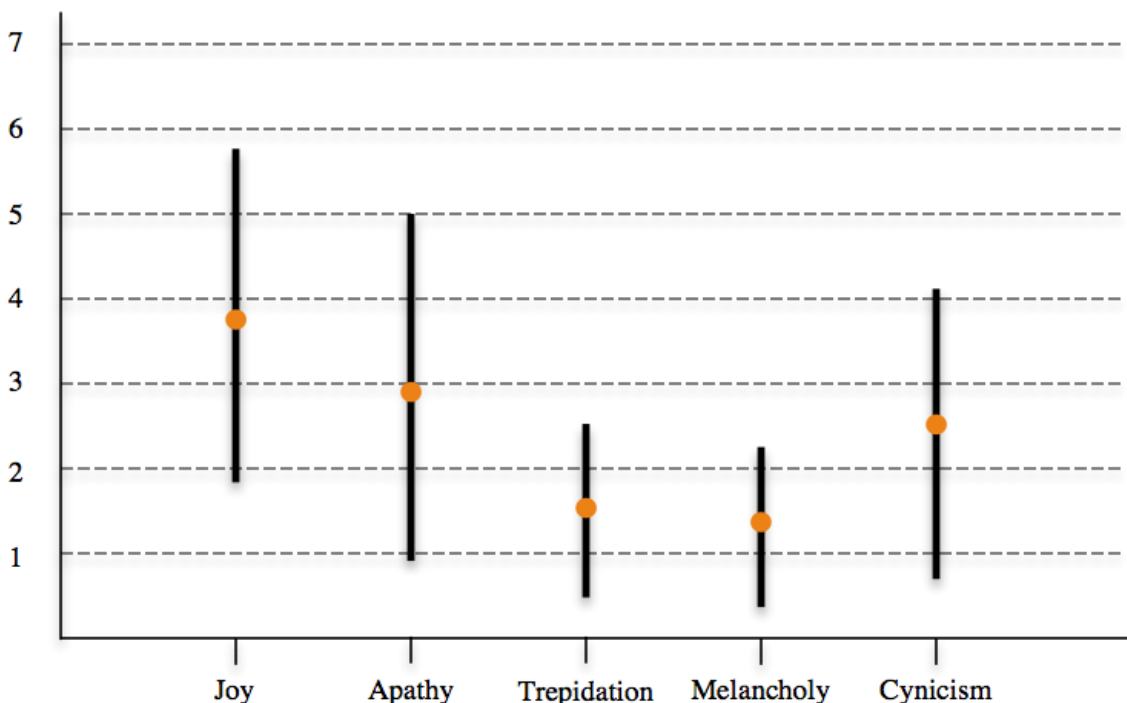
Figure 23: *Consumer innovation affect* **factor item means ±1SD (highly innovative, n = 348)**
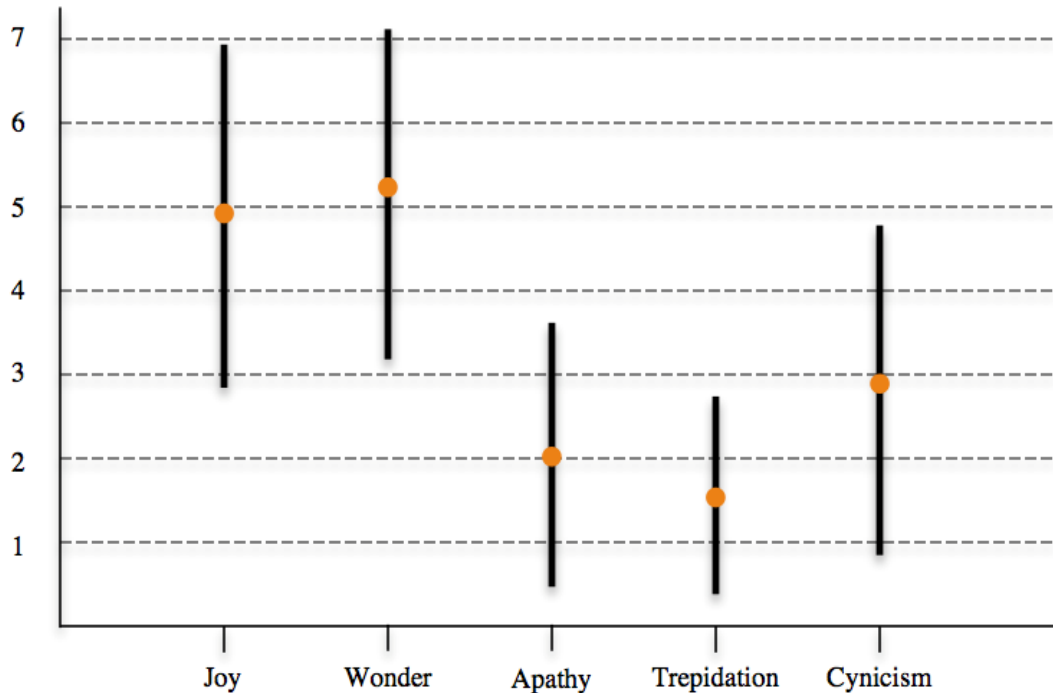
is likely the absence of an emotion is just as powerful an influencer of adoption as the existence of one, hence *Melancholy*, even when non-existent, is expected to be a key constituent in breaking a consumer's status quo to facilitate acceptance of innovations. Finally, *Cynicism* item descriptives are assessed, with findings revealing the emotions are generally experienced in relatively strong intensity. Whilst the items examined are different across the two samples (an externality of empirical re-specification), the mean figures of 2.414 in the "mildly innovative" sample and 2.829 in the "highly innovative" sample indicate that as products are perceived to be more innovative, a 17.19% increased experience of *Cynicism* items exists. This is unsurprising, as consumers are likely to fear or question the unfamiliar, of which more innovative products are discovered to elicit more *Cynicism* as a result. The *SD* figures of these items paints a picture of quite a wide variation of scores (means = 1.693 and 1.960), suggesting the majority of the scores ranging from virtually no cynicism to quite high cynicism. This is interesting to discover, as it indicates respondents perceive a wide variety of *Cynicism* from the same innovations, perhaps a result of the diversity of the products, the emotional profile or personality of respondents provoking more *Cynicism* emotions within them, or the purely subjective nature of respondents' perceptions, particularly those related to complex psychobiological appraisals such as emotions.

Examining the *C.I.A.* CFA estimates (bootstrap-adjusted) as exhibited in Tables 62 and 63, the factor loadings of each item on their latent construct are highly statistically significant in both samples. In examining the SRW figures (and the corresponding SMC values), each are acceptable in the "mildly

Table 62: *Consumer innovation affect* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Thankful		1.000	-	-	-	.644	.415			
Happy	JOY$	1.301	.093	13.989	***	.853	.727	.642	.841	.625
Pleased		1.379	.096	14.365	***	.886	.785			
Unexcited		1.000	-	-	-	.880	.774			
Unimpres.	APATHY$	.877	.048	18.271	***	.857	.734	.702	.876	.699
Bored		.719	.048	14.979	***	.773	.598			
Tense		1.000	-	-	-	.844	.713			
Panicky	TREP.$	.765	.072	10.625	***	.785	.616	.619	.829	.616
Nervous		.918	.078	11.769	***	.727	.528			
Depressed		1.000	-	-	-	.796	.634			
Sad	MELAN.$	1.012	.116	8.724	***	.801	.641	.610	.824	.603
Miserable		1.205	.188	6.410	***	.745	.555			
Suspicious	CYNIC.$	1.000	-	-	-	.731	.534	.597	.747	.589
Disbelief		1.019	.114	8.939	***	.812	.660			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 63: *Consumer innovation affect* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Thankful		1.000	-	-	-	.706	.499			
Happy	JOY$	1.025	.074	13.851	***	.860	.739	.685	.866	.675
Pleased		1.086	.079	13.747	***	.904	.818			
Amazed		1.000	-	-	-	.898	.807			
Surprised	WONDER$	.855	.049	17.449	***	.801	.641	.664	.855	.657
Astonished		.869	.057	15.246	***	.737	.543			
Unexcited		1.000	-	-	-	.765	.585			
Unimpress.	APATHY$	.842	.088	9.568	***	.723	.523	.509	.756	.502
Bored		.600	.103	5.825	***	.647	.418			
Tense	TREP.$	1.000	-	-	-	.868	.754	.739	.850	.733
Panicky		.726	.107	6.785	***	.850	.723			
Sceptical	CYNIC.$	1.000	-	-	-	.799	.638	.652	.789	.649
Suspicious		.987	.104	9.490	***	.816	.666			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

innovative" sample, with the exception of *Thankful,* whose SMC figure of .415 does not meet the advised .500 criterion (Chin and Todd, 1995). Evidently, despite being moderately short of the required amount of variance explained, *Thankful* is retained in the CIA solution in this sample because of its strong factor loading, and the conceptual breadth it offers to the construct. In light of strong variance explained within each item by its respective construct, the AVE figures for each first-order construct is adequate and in support of convergent validity. Furthermore, each of the factors exhibit strong

reliability (CR > .747), whilst the AIIC generally reveals relatively wide conceptual breadth, with majority of constructs falling with the range of .500 - .650 for both samples.

Examining the standardized regression weights of the second-order constructs in the "mildly innovative" sample, each loads statistically significantly strongly on its associated first-order construct. For *Positive Affect*, *Joy's* standardized regression weight is .831, and *Apathy's* -.739, indicating strong empirical influence of the second-order construct. Of these two regressions, *Positive Affect* elicits a stronger impact on *Joy*, then its (negative) impact on *Apathy,* whilst the AVE figure of .582 suggests the construct offers convergent validity. Examining the impact of *Negative Affect* in the "mildly innovative" sample, the standardized regression weights are relatively varied with *Apathy* exhibiting an SRW of .405, *Trepidation* .942, *Melancholy* .931, and *Cynicism* .619. Not surprisingly, *Trepidation* and *Melancholy* exhibit the largest standardized effects for a one *SD* rise in the exogenous variable. As their *SD* values are small compared to the other factors, a rise of a particular size represents a larger proportion of their *SD* compared to the effect on the same rise on the *SD*s of other factors. Interpreting the average variance explained in *Negative Affect* by the second-order constructs, the AVE figure of .582 suggests convergent validity, and the model-implied correlation observed between the two second-order factors is statistically distinct from zero at .234. Intriguingly, such a correlation is not negative in relationship, which may superficially appear illogical, but upon deeper inspection suggests that a respondent who experiences *Positive Affect* experiences more *Negative Affect*, and vice versa. This is likely a result of some individuals being more emotionally expressive, and indicating more emotions in general, not just positive or negatively valenced ones. Similarly, some respondents are more likely to make a stronger emotional connection with the subject innovations compared to others.

Examining these estimates in the "highly innovative" sample, the standardized regression weights of *Joy* (.705), *Wonder* (.963) and *Apathy* (-.579) on *Positive Affect* are all large in size and statistically distinct from zero, culminating in an AVE figure of .559 for *Positive Affect* in this sample. Of these relationships, *Wonder* is most strongly influenced by *Positive Affect* from a standardized perspective, thus justifying that when the general positive affective state is experienced, these *Wonder* emotions are experienced in the largest intensity for highly innovative products. Inspecting the standardized regression weights of *Apathy* (.766), *Trepidation* (.490) and *Cynicism* (.813) on *Negative Affect, each* are statistically distinct from zero, and large in size, culminating in an AVE figure of .445 for *Negative Affect* in this sample. Whilst this AVE figure is slightly inadequate, the acceptable AVE figures of the

Negative Affect first-order constructs ensure satisfactory variance is explained in the scale items, thus no further re-specification is undertaken. Comparing SRWs, *Cynicism* appears to be most heavily influenced (from a standardized perspective) by a one SD rise in *Negative Affect*. Such may be a consequence of the high level of innovativeness of the products examined, and suggest practitioners must bear caution in eliciting a negative affective state. Additionally, the model-implied correlation observed between the two second-order factors is statistically distinct from zero at .243 and is very similar to that of the "mildly innovative" sample. Such a finding indicates the relationship between affective states is fundamentally no different, as products are perceived as increasingly innovative.

Credence:

As innovations are possessive of many credence qualities, it is likely uncertainty and risk are inevitable residuals associated with their acceptance. In light of such (and methodologically comparable to the previous sample), in these "mildly innovative" and "highly innovative" samples, *Credence* is explored as an aggregate of the perception of a negative consequence occurring, and the certainty that goes with such an assessment. Furthermore, the scale items are again positively valenced such that a high positive score (out of 7) suggests a highly improbable assessment of the likelihood of risk occurring with great certainty. Respondents assess six forms of risk: financial, performance, physical, psychological, social, and convenience (Murray and Schlacter, 1990; Quintal, Lee, and Soutar, 2010). Of the six examined, only three are retained in the final solution (*performance, psychological*, and *convenience*; see Figure 24) as the empirical fit and validity of *financial*, *physical,* and *social* appear questionable at best in this research context. Of these omissions, it is believed physical risk is too conditional a concept to be related with many innovations, including those of this study. Additionally, whilst a more conceptually broad scale may have been ideal, it is believed the other two forms of risk assessments are again explored in some degree through the *PVFM* and *Social Influences* scales. The *Credence* items employed in subsequent analysis are single-items representing an aggregate of risk and certainty for each type, as depicted in Figure 24. Due to the unfamiliar, discontinuous nature of new product innovations, this construct is anticipated to be pivotal in the ability to break from one's status quo, thus it is likely to influential in the acceptance of innovations.

In assessing the item descriptives of *Credence* (see Table 64), the mean values are somewhat divergent across the two samples. The average item means of 4.165 and 4.917 for the two samples are statistically significantly different [*Credence t*-test indicates significant difference in means (equal variances

Figure 24: Credence measurement model (innovative samples, *n* = 353 and *n* = 348)
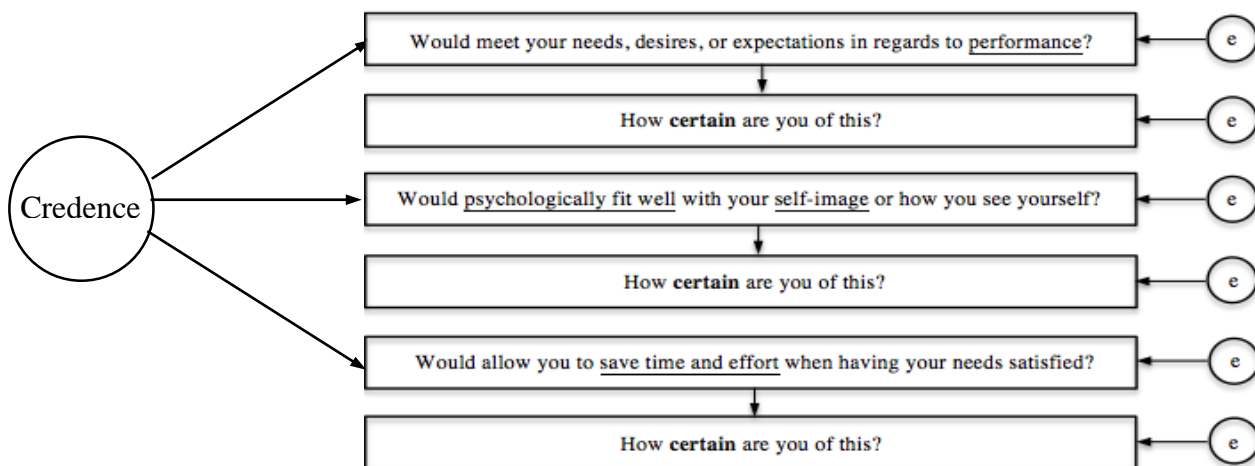
assumed, Levene's test *p* > .05), *t*(699) = -8.034, *p* < .05; medium effect size = .291], indicating respondents are more certain of risk being associated with the "mildly innovative" products than the "highly innovative" ones (as a higher score is indicative of less risk). Herein, as both scores are above, but reside closely to the mid-point of 4, such are relatively neutral positive assessments. In exploring such in consideration of the conceptual nature of the risk items, surprisingly, as a product is considered more innovative, respondents consider its performance more likely to meet their expectations. Perhaps the "wow factor" and discontinuity associated with highly innovative products encourages consumers' expectations to substantially enhanced, whereas mildly innovative products that are more incremental in their enhancement are not perceived to be as likely (although still likely) to achieve such?

Table 64: *Credence* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Perf_Risk_Uncert		4.605	1.365	5.236	1.340	-0.631	0.025
Psych_Risk_Uncert	CREDENCE	3.849	1.548	4.656	1.492	-0.807	0.056
Conv_Risk_Uncert		4.040	1.639	4.858	1.591	-0.818	0.048

Considering psychological assessments of risk, perhaps those who don't see as much innovativeness in the products see less fit with their self-image and how they see themselves, thus the risk is higher. Earlier it is established that respondents who assessed the subject products to be more innovative also considered themselves to be more innovative, so this lack of self-fit is unlikely to be with perceptions of personal innovativeness, and may be associated with other self-perceptions. Examining the means for the item, the figure of 3.849 in the "mildly innovative" sample supports such a notion, as it is a

slightly negative risk assessment, as opposed to the minor positive assessment of psychological risk in the "highly innovative" sample. Exploring the convenience component of *Credence*, the mean of 4.040 in the "mildly innovative" sample indicates respondents on average are indifferent with regards to the convenience of the innovations, however the "highly innovative" sample (as indicated by its mean of 4.858) does consider, with moderate agreement and certainty, the innovations will provide such convenience. Herein, perhaps those who perceive the innovations to save time and effort (thus present as less of a convenience risk) also see greater innovative capabilities in the products?

Table 65: *Credence* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	*t*	Sig.	SRW	SMC	AVE	CR	AIIC
Perf_Risk		1.000	-	-	-	.702	.493			
Psych_Risk	CREDEN.$	1.039	.124	8.379	***	.639	.408	.514	.759	.508
Conv_Risk		1.383	.168	8.232	***	.801	.642			

*** *p* < .001
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 66: *Credence* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	*t*	Sig.	SRW	SMC	AVE	CR	AIIC
Perf_Risk		1.000	-	-	-	.686	.471			
Psych_Risk	CREDEN.$	1.135	.152	7.467	***	.692	.479	.552	.786	.544
Conv_Risk		1.483	.183	8.104	***	.847	.717			

*** *p* < .001
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Assessing the CFA estimates of *Credence* in these two samples (see bootstrap adjusted estimates of Tables 65 and 66), factor loadings are relatively comparable across the two samples (means = 1.211 and 1.309), and each is highly statistically significant. Of salience though, in both samples, a rise in the latent construct has the largest influence on *Convenience Risk*. Examining the SRWs and associated SMC values, there is some cause for concern, as these values are less than adequate. Such is potentially a result of framing, or variant responses caused by examination of the three omitted risk items, thus further replication may need to address such a distress. However, as the AVE figures (thanks largely to the high variance explained in *Convenience Risk* by the latent construct) are in support of convergent validity for both samples (.514 and .552), such is not deemed a profound concern at this stage of the research. Further condoning use of these re-specified measurement models, composite reliability is high (.759 and .786) and AIIC figures are indicative of relatively wide conceptual breadth.

Attitude:

In these two innovative samples, the *Attitude* scale items comprising the measurement model are an aggregate of the attitude assessments (through the three scale items), weighted by the strength with which such an attitude is held (see "Methodology" chapter). Copious research establishes the critical role of attitudinal assessments in adoption studies, thus such a construct is anticipated to influence consumer's intent to break from their status quo and accept an innovation as well. Due to divergent discoveries of *Attitude's* direct and / or indirect influence in acceptance, a psychometrically sound measurement model must be supported for such a scale to be employed in further structural analyses and hypothesis testing.

Figure 25: *Attitude* **measurement model (innovative samples,** *n* **= 353 and** *n* **= 348)**
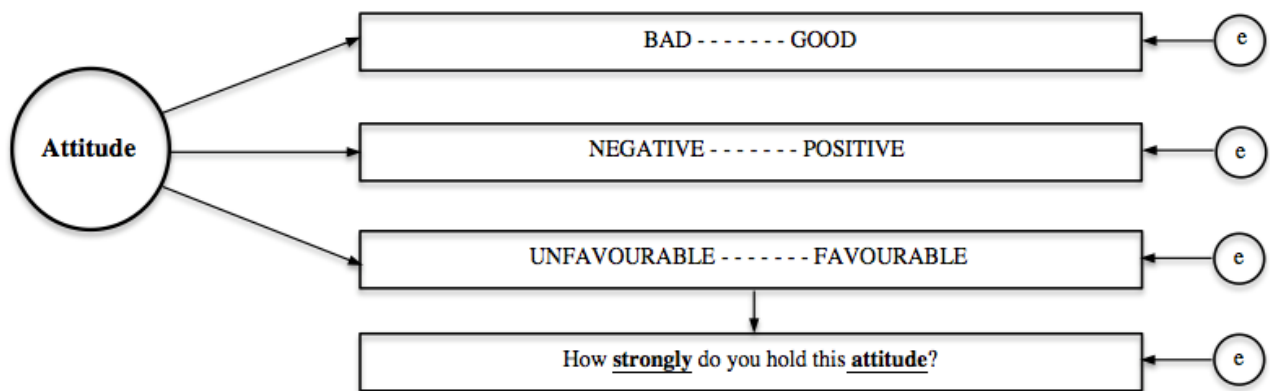
Assessment of the *Attitude* item descriptives (see Table 67) reveals the means of the items are quite strongly positive for both samples (4.539 and 5.739). Such suggests respondents generally perceive their attitude towards the innovations to be positive, good and favourable. However, in examining the two average item means, the attitudinal assessment of the "highly innovative" sample is statistically significantly higher [*Attitude* *t*-test indicates significant difference in means (equal variances not assumed, Levene's test $p > .05$), $t(678.675) = -12.323$, $p < .05$; medium-large effect size = .428] with a mean of 5.739, and is considered a very positive attitude. Furthermore, considering the *SD* figures of these item means, the majority of scores range as high as 7 (mean +1 *SD*), and as low as 4.3 (mean -1 *SD*), indicating the vast majority of respondents have a positive attitudinal assessment of the innovations. In the "mildly innovative" sample, attitudinal assessments are not quite as positive, but as indicated through the *SD* scores, the upper majority of these scores do reach as high as approximately 6 (mean +1 *SD*). However, the lower majority of scores does cross over into negative

Table 67: *Attitude* item descriptives (innovative samples, *n* = 353 and *n* = 348)

Indicator	Latent Factor	Mildly Innovative		Highly Innovative		Differential	
		Mean	SD	Mean	SD	Mean	SD
Attitude_1		4.593	1.448	5.767	1.177	-1.174	0.271
Attitude_2	ATTITUDE	4.608	1.451	5.772	1.187	-1.164	0.264
Attitude_3		4.417	1.545	5.665	1.324	-1.248	0.221

attitudinal assessment territory (item 3 mean – 1 *SD*), and is often neutral in this sample. Herein, it is suggested more respondents of the "mildly innovative" sample develop a negative attitude towards the innovations. Due to the results observed, it is suggested growing perceptions of innovativeness do have a positive influence on the attitudes of consumers. Assessing the (bootstrap-adjusted) CFA estimates of the *Attitude* construct in these two innovativeness samples, all signs are very encouraging (see Tables 68 and 69), supporting the validity and reliability of the construct, and thus confirming it is suitable for its pivotal role in subsequent structural analyses.

Table 68: *Attitude* CFA estimates (mildly innovative, *n* = 353)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Attitude_1		1.000	-	-	-	.932	.869			
Attitude_2	ATTITUDE$	1.010	.040	25.250	***	.939	.882	.841	.941	.840
Attitude_3		1.007	.041	24.562	***	.879	.772			

*** *p* < .001
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Table 69: *Attitude* CFA estimates (highly innovative, *n* = 348)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Attitude_1		1.000	-	-	-	.936	.876			
Attitude_2	ATTITUDE$	1.001	.070	14.300	***	.927	.859	.834	.938	.832
Attitude_3		1.057	.059	17.915	***	.877	.770			

*** *p* < .001
$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Acceptance:

In these innovative samples, the key dependent variable examined is *Acceptance*, as assessed through respondent's perceptions of their behavioural intention related to the innovation. Methodologically, such is measured through a three-item ordinal measure, with each respondent selecting his or her intentions for the product from the options resistance, trial, or purchase. In the "mildly innovative" sample (see Table 70), 124 respondents indicate an intention to resist the innovation i.e. they do not wish to purchase of further trial the product; 205 selected trial, indicating they wish to have further

opportunity to interact with, research or trial the product before making a decision about future purchase; whilst 24 indicate an intention to purchase the product in the future. Quite different figures are observed for the "highly innovative" sample, in which 58 respondents indicate an intention to resist, 231 intend to trial, and 59 intend to purchase the subject innovations. Interestingly in this sample there is a near identical number of respondents who intent to resist the innovation as those who intend to purchase it. In light of this very high proportion of trial intentions (66.4%), such suggests products with higher levels of perceived innovativeness are more likely to break one from their status quo (as characterized by resistance), and at least intend to further interact with the innovation.

Table 70: *Acceptance* **intentions (innovative samples)**

	Resistance		*Trial*		*Purchase*		Total
	n	%	n	%	n	%	n
Mildly innovative	124	35.1	205	58.1	24	6.8	353
Highly innovative	58	16.7	231	66.4	59	16.9	348

Such figures are substantially different across the two samples. Comparing these, 18.4% more "mildly innovative" respondents intend to resist the innovations compared to the "highly innovative" sample. Considering the innovations respondents are exposed to is relatively comparable across samples, this is profound, and could be a result of the lower innovativeness perceptions not sparking enough interest in these respondents to elicit further trial (at least). Examining the number of respondents intending to trial the innovations, unsurprisingly, this option is the most commonly selected by respondents in both samples (205 and 231). As such explicates the act of researching or further interacting with the innovation before deciding to purchase or not, it represents interest to break from one's status quo, but only if further assessments are positive enough to do so. Due to the innovative nature of such assessments, trial is likely selected because of a general positive impression, yet insufficient confidence or familiarity with the innovation. Assessing the number of respondents intending to purchase the innovations, just 24 "mildly innovative" respondents intend to purchase, whilst 59 "highly innovative" do. This represents an additional 10.1% of "purchasers" in the "highly innovative" sample, which is another important discovery, suggesting increasing perceptions of innovativeness play at least some role in purchase behaviour. In light of these diverse *Acceptance* findings across the innovativeness samples, it is clear that perceptions of newness, or novelty play a pivotal role in acceptance decisions. To what extent this influence occurs through other empirical constructs though, will be analyzed in subsequent investigation.

Discriminant validity

Farrell (2010) warns, if discriminant validity is not supported, latent variables may exhibit influence on more than just the indicators to which they are theoretically related; a problematic outcome. Having supported the reliability, unidimensionality, and convergent validity of each of the aforementioned measurement models, and so to confirm each scale differs empirically; discriminant validity assessments are undertaken independently for both samples.

Mildly innovative:

In this "mildly innovative" sample, assessment of discriminant validity is conducted by examining a model in which all constructs are correlated (with the exception of the ordinal *Acceptance* variable). Through examining the square roots of the AVE of each factor relative to the factor correlations in this correlated solution (e.g. Yang et al., 2012) such validity is assessed.

Table 71 reveals minor preliminary cause for multicollinearity concern, with a few examples of correlations around the .850 mark: *Positive Affect* and *Compatibility* ($r = .855$), *Positive Affect* and *Attitude* ($r = .838$), and *Credence* and *Compatibility* ($r = .850$). Considering *Positive Affect* is a second-order construct compiled of many single-item emotions (not to mention the unique inverse interaction with *Apathy* emotions), it is highly unlikely latent variables are exerting influence on non-associated items and discriminant validity is rife. Regarding *Credence* and *Compatibility's* correlation, as the former is an aggregate measure of the likelihood of negative consequences and the certainty with which this is held, it is unlikely any discriminant validity issues exist at the item level. Examining the squared AVE figures (as indicated on the diagonal), such figures are higher than the shared variance between constructs for all those observed (with the exception of the three aforementioned correlations), thus discriminant validity is supported.

Inspecting the individual correlations between factors, each are in their anticipated direction (or negligible in size), with the exception of some *Negative Affect* correlations. Such are likely a result of the complex nature of psychobiological appraisals and the implicit separation of cognition and affect. Intriguingly, the *Complexity – P.B.C.* correlation ($r = -.582$) is sizeable and inverse in nature. Such supports the notion that individuals who perceive a mildly innovative product to be more complex,

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
COMPLE.	.835												
REL. ADV.	-.052	.853											
SOC. INF.	-.016	.559	.848										
IMAGE	-.010	.600	.719	.704									
P.V.F.M.	.005	.360	.299	.269	.839								
COMPAT.	-.191	.707	.682	.686	.364	.871							
INNOV.	-.141	.330	.494	.489	.068	.432	.838						
P.B.C.	-.582	.102	.112	.095	.109	.281	.254	.735					
KNOWL.	-.193	.152	.267	.344	-.079	.223	.707	.334	.831				
POS. AFF.	-.089	.629	.705	.802	.348	.855	.396	.014	.220	.763			
NEG. AFF.	.307	.078	.121	.160	-.126	.036	.112	-.292	.095	.267	.771		
CREDEN.	-.384	.726	.660	.656	.383	.850	.432	.331	260	.810	-.004	.717	
ATTITUD.	-.231	.571	.527	.562	.005	.728	.273	.218	.102	.838	-.049	.780	.917

* Model implied estimates. Bolded diagonal figures are the square root of the AVE figure
(1) Complexity, (2) Relative Advantage, (3) Social Influences, (4) Image, (5) Perceived Value For Money, (6) Compatibility, (7) Innovativeness, (8) Perceived Behavioural Control, (9) Knowledge, (10) Positive Affect, (11) Negative Affect, (12) Credence, (13) Attitude

believe himself or herself to have less ability to execute behaviours with it. Unsurprisingly, _Attitude_ and _Compatibility_ correlations are generally substantial in size, indicating the constructs play a key role in interacting with other variables, perhaps suggesting a potential mediating influence? In light of the aforementioned findings, the validity of the measurement models in this "mildly innovative" sample is supported for subsequent structural analyses.

Highly innovative:

Discriminant validity in this "highly innovative" sample is examined in a manner identical to that of the previously discussed sample, where evidence of the (square root of the) AVE figure exceeding the correlation between the two subject variables provides due support. Through preliminary assessment, only the _Credence - Compatibility_ correlation ($r = .847$) is close to exceeding the multicollinearity range of .850, however such is likely a result of _Credence_'s aggregate composition, and as the square root of _Compatibility_'s AVE exceeds this correlation, no cause for concern is expected to exist at the item level. Perhaps such a discovery suggests similar antecedent influence of these variables in structural analyses? Further observation reveals the AVE figures exhibited in Table 72 exceed the individual correlations in all cases, thus the discriminant validity of the measurement models comprising this "highly innovative" sample are considered acceptable. Like the previous sample,

Table 72: Assessment of correlations and discriminant validity (highly innovative, _n_ = 348)*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
COMPLE.	.802												
REL. ADV.	-.217	.871											
SOC. INF.	-.087	.556	.846										
IMAGE	.019	.450	.679	.765									
P.V.F.M.	-.134	.298	.271	.095	.860								
COMPAT.	- 365	.712	.655	.425	.347	.890							
INNOV.	-.208	.387	.602	.469	.188	.546	.854						
P.B.C.	- 565	.263	.227	.096	.273	.502	.373	.733					
KNOWL.	-.305	.236	.447	.290	.173	.335	.809	.415	.862				
POS. AFF.	-.270	.489	.568	.504	.161	.657	.498	.219	.414	.748			
NEG. AFF.	.483	-.147	-.058	.205	-.219	-.276	-.001	-.283	.025	.118	.667		
CREDEN.	-.417	.798	.669	.457	.341	.847	.549	.485	.385	.607	-.273	.743	
ATTITUD.	-.403	.563	.500	.287	.386	.760	.396	.379	.246	.680	-.369	.742	.913

* Model implied estimates. Bolded diagonal figures are the square root of the AVE figure
(1) Complexity, (2) Relative Advantage, (3) Social Influences, (4) Image, (5) Perceived Value For Money, (6) Compatibility, (7) Innovativeness, (8) Perceived Behavioural Control, (9) Knowledge, (10) Positive Affect, (11) Negative Affect, (12) Credence, (13) Attitude

correlations are observed in the conceptually anticipated direction (or negligible in size), with similar patterns observed. Firstly, *Complexity* and *P.B.C.* ($r = -.565$) again exhibit a strong inverse correlation, supporting the relationship between these two constructs. Secondly, *Attitude* and *Compatibility* are again strongly correlated with most variables, suggesting some form of empirical interaction, and supporting their importance in innovation acceptance behaviour. The aforementioned discussion supports the final validity of each measurement model in this "highly innovative" sample.

Conclusion:

The aforementioned discussions of item descriptives, CFA estimates, and factor interrelationships confirm the validity of the measurement models used in both the "mildly innovative" and "highly innovative" samples of this study. Herein, each measurement model specified exhibits strong empirical validity, and is considered very suitable for this research context, despite their empirical distinction across samples. The results from analyses of these two samples thoroughly support the empirical efficacy of these scales in attempting to unlock what can be employed to break consumer's status quo and facilitate acceptance of new product innovations. Herein, the following constructs are examined in the structural portion of this study for the "mildly innovative" and "highly innovative" samples:

- *Complexity*
- *Relative Advantage*
- *Social Influences*

- *Image*

- *Perceived Value For Money*

- *C.I.A. (Positive Affect and Negative Affect)*

- *Perceived Behavioural Control*

- *Innovativeness*

- *Knowledge*

- *Credence*

- *Compatibility*

- *Attitude*

- *Acceptance*

Structural analyses: mildly innovative

Drawing upon status quo bias, and technology and innovation acceptance literature, this research is the first of its kind to identify what drives consumers to break from their current consumption patterns and accept a new product innovation. Building this research upon the aforementioned theoretical frameworks (i.e. SQB, TPB, and TAM) whilst integrating various new empirical concepts (i.e. risk and uncertainty, consumer innovation affect, value for money, etc.) this study thoroughly examines consumer innovation acceptance. Having supported the validity of each of the employed measurement models in the mildly innovative and highly innovative samples, analyses of the relationships observed between variables is undertaken through the structural analyses, with the proposed conceptual model examined.

Figure 26: FACE Model of Consumer Innovation Acceptance
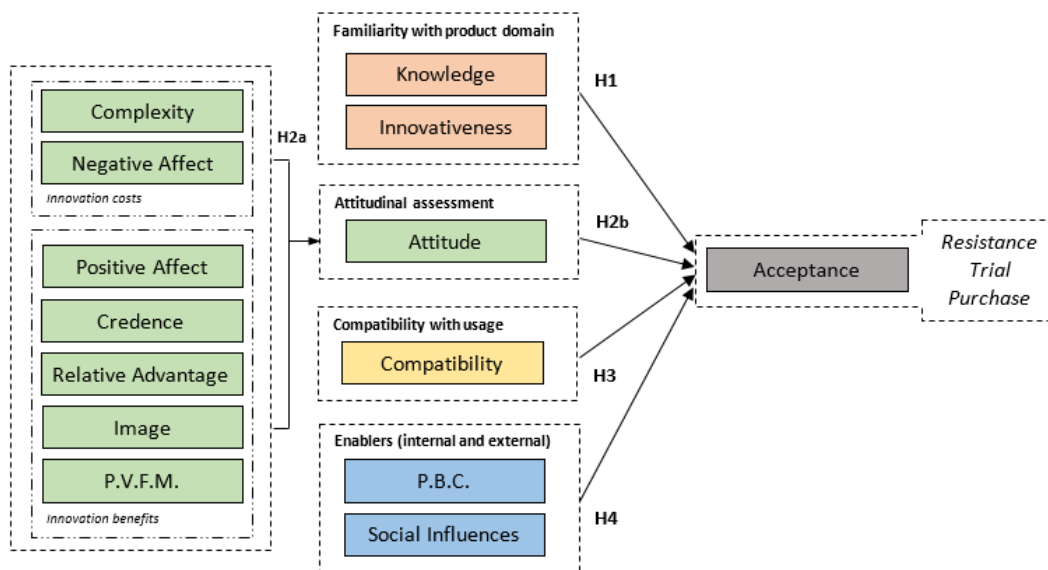
Empirical considerations:

In examining the aforementioned conceptual model, a number of empirical considerations must first be discussed, including the categorical outcomes of the *Acceptance* dependent variable, the use of mean centered composites, and model fit and specification. Such procedures are integral to analyzing the captured data with the upmost precision and validity.

Mean centering:

To ensure consistency of interpretation across varying scale metrics, this research utilizes mean-centered constructs. Researchers employ mean centering by subtracting the (variable) mean from the raw score for all observations. In doing so, Kromery and Foster-Johnson (1998) reveals, the interpretation of things such as the estimate may change, whilst statistical significance of regression weights do not vary to that of non mean-centered variables. Despite the conjecture of mean-centering's impact on reducing collinearity in multiple regression (see Echambadi and Hess', 2007 argument against its ability to do such), Little et al. (2007) note, mean-centering predictor variables is advantageous, as regression weights of mean-centered predictors are more practically meaningful than regression weights from an arbitrary scale metric, aiding the interpretation of the data.

Composites:

As the structural models examined in this study are likely to be particularly complex and empirically demanding, for computation and identification purposes, composites are employed. Proxies such as a composite measure operate under the assumption the whole is equal to the sum of its principal parts and can be employed to represent a construct or variable. Such are prudent options as they represent a wide conceptualization and are easy to interpret and replicate across studies (et al, 2006). Creation of composite measures (otherwise known as item-parcels or testlets) is often motivated by practical rationales (Landis, Beal and Tesluk, 2000), as they "can represent the multiple aspects of a concept in a single measure" (Von der Heidt and Scott, 2007; p. 6). Herein, composites are suggested as appropriate for research involving latent constructs or variables (Kumar et al., 1992), and Rowe (2002) approves the ubiquity of such methods, asserting that as a means of data reduction, computation of composite variables from observed indicators (measured through both categorical or continuous data) is "common-place". Herein, a (mean centered) factor-weighted composite of each of the latent factors is formed from the re-specified valid measurement models discussed in the CFA section, using AMOS's (version 21) data imputation technique. This process employs partial aggregation, which involves the combination of indicators of each dimension of a construct, with each separate underlying construct retained as composites and created from the items of each individual sub-dimension.

For second-order measurement models, such as the positive and negative affective measures, only the higher-order constructs (those that have direct impact on the endogenous variable) are included in the

structural model. Purely the higher-order composites are included in the structural model (not the item and first-order constructs), as inclusion of lower-order variables does not change the relationship between the 2nd-order and endogenous variables, however it does worsen model fit by demanding more of the structural model and reducing model parsimony.

Categorical outcomes:

Due to the methodological enhancement of the behavioural intention variable to include alternatives of purchase, trial, and resist (as opposed to traditional and methodologically narrow "adopt", "use" or "purchase" options), this research makes use of a categorical dependent variable entitled *Acceptance*. As consumers' initial status quo when exposed to an innovation is likely to be resistance, breaking of the status quo is represented by proceeding through these outcomes, with logical order existing from resistance to trial, and trial to purchase. Evidently, such a variable is ordinal in nature, and traditional maximum likelihood estimation is not suitably effacious for such research (Brown, 2006). As an alternative form of estimation, Flora and Curran (2004) identify the positive performance of robust WLS estimation methods when assessing models with ordinal indicators. Discriminating amongst WLS estimators, Brown (2006) recommends mean and variance-adjusted weighted least squares (WLSMV) to be the best estimator for ordered categorical analysis, particularly as sample size restrictions are not as conservative as traditional WLS. Herein, structural models estimating the *Acceptance* dependent variable are examined using MPlus (Version 7.2) with delta parameterization regression.

In examining model estimates for ordered categorical variables such as *Acceptance*, a latent response variable framework is employed where y* reflects the amount of an underlying continuous and normally distributed characteristic that is required for a certain category of response of an observed categorical variable (Brown, 2006). Such an underlying variable is related to the observed categorical variable by means of a threshold parameter, of which the number of thresholds is equal to the number of categories, minus one (Campoy-Muñoz, Gutiérrez, Hervás-Martínez, 2014). In the context of this research, this represents the degree of acceptance for the subject product, ranging from resistance, to trial, through to purchase. Herein, the thresholds are the point of y* where y = 0 (resistance) if the first threshold is exceeded, y = 1 (trial) if the first threshold is exceeded but not the second, and y = 2 (purchase) if the second threshold is exceeded.

Odds:

As this research uses WLSMV estimation through MPlus for estimating categorical outcome variables, probit regression coefficients are utilized. These coefficients are then used to calculate the odds associated with moving into the next category of the outcome variable; in this case moving from *Resistance* to *Trial* or *Trial* to *Purchase* intentions. Herein, the odds ratio represents the constant effect of a predictor X, on the likelihood that one outcome will occur. These are interpreted as a 1-point increase in the predictor variable corresponding to a percentage increase in the odds that the dependent variable is true (not the probability).

Model specification:

As employed in the CFA discussion of the aforementioned measurement models, a number of criterions are imposed on structural parameter estimates to be in evidence of empirical acceptability. So to ensure substantial contributions are made to status quo bias and innovation acceptance literature, sstructural solutions that do not fit these standards are re-specified (in accordance with theoretical support and conceptual logic) until adequately fitting solutions are derived. Such re-specifications will adhere to the following criterions; firstly, in the event of observed non-normality, bootstrap-adjusted confidence intervals are used (1000 bias-corrected rotations, as calculated through MPlus) to assess factor loadings. Secondly, structural parameter estimates are required to meet the same stringent standards of empirical acceptability as CFA examination already undertaken. Thus, as the unidimensionality, validity and reliability of each of the measurement models is supported, confidence is placed in Kline's (2013) conclusion that there is a limited role in statistical modeling techniques (such as SEM) for significance testing, and the overreliance on significant testing to evaluate hypotheses. Herein, attempts are made to retain only statistically significant factor loadings ($p < .05$), but relationships of substantial theoretical relevance that exhibit a moderate effect size may still be considered conceptually and empirically relevant. Thus, just because an empirical effect isn't statistically significant, doesn't mean it is not conceptually or theoretically salient, and the APA's (2010) suggestion of publishing effect sizes, and confidence intervals wherever p values are disclosed, is adhered to.

Considering theoretically supported and relevant findings that may not entirely meet stringent empirical cut-offs, subsequent tests (under less complex specification) may replicate such findings, or

in the absence of other superfluous variables, prove them significant; thus this study should not be so quick to reject on traditional criterions of significance. In light of this, structural relationships that do not quite meet traditional criterions of statistical significance (that Kline, 2013 considers flawed) but do offer pivotal insight into the acceptance of innovations are retained in this analysis. Re-specification is also entertained in the event of theoretically supportable modification indices greater than 3.84 (the critical value of the statistically significant x^2, $p > .05$, 1 degree of freedom). Considering the infancy of this new theoretical analysis though, results and findings for both the "mildly innovative" and "highly innovative" samples are in need of further replication to validate their generalizability amongst numerous samples in the interest of establishing empirical norms.

Model fit:

Structural models are examined to find a theoretically defendable solution of which the sample fits the specified data of the model. Various authors have detailed a myriad of model fit criterions, of which Hu and Bentler's (1999) are most commonly (and often incorrectly) specified. However, researchers such as Marsh, Hau and Wen (2004), Goffin (2007), and Barret (2007) advise indiscriminately following such guidelines is a languid endeavour, with the former of these authors advising "conventional rules-of-thumb about acceptable fit are too restrictive" (p.325). In light of this, a number of acceptably fitting models are examined, with model fit criterions used as desirable, yet flexible benchmarks. It must be noted MPlus provides model fit estimates for chi-square, VFI, TLI, CFI and RMSEA only in this research context. Encouragingly though, Beauducel and Herzberg (2006) discovers that CFI, TLI, and RMSEA indicate superior model fit in WLSMV estimation with two and three outcome categories. Herein, the following standards are set:

- *Absolute Fit Index:* chi-square ($p > .05$) and its associated *df*
- *Incremental Fit Index:* TLI ($> .95$), CFI ($>.95$)
- *Parsimony Fit Index:* RMSEA ($< .06$, LO90 $< .05$, HI90 $< .08$, PCLOSE $> .05$)

Hypotheses testing:

The structural model specified upon the established empirical relationships discussed in the "Hypotheses Development" chapter of this research is now examined in this "mildly innovative" sample. It must be noted however, as no study has specifically examined the acceptance of innovations

in a context such as this; particularly through examining both mildly and highly innovative products, such a model is still very much experimental in its approach. Herein, this stage of the research aims to identify an appropriate fitting model that conceptually explains consumers breaking from the status quo in the acceptance of mildly innovative products. Having delineated several hypothesized relationships, the *FACE Model of Consumer Innovation Acceptance* is examined for mildly innovative products. As indicated in Table 74, a substantial amount of variance in the final dependent variable is observed (44.9%), suggesting the final conceptual framework of this study goes a long way towards understanding this vital, and to date, concealed nuance of consumer behaviour. Through examining this model, a number of the theoretically proposed relationships are accepted (to be discussed later), however several are rejected. These non-supported relationships include *Image's* impact on *Attitude (H: 2avi)*, and *Knowledge (H: 1a)*, *P.B.C. (H: 4a)*, and *Social Influences' (H: 4b)*, impact on *Acceptance*. Through such analyses, those constructs discovered to not empirically influence their respective dependent variable are omitted, with the final structural model to explain consumers breaking from their status quo in accepting mildly innovative products developed (see Figure 27).

Figure 27: Final supported structural model (mildly innovative, *n* = 353)
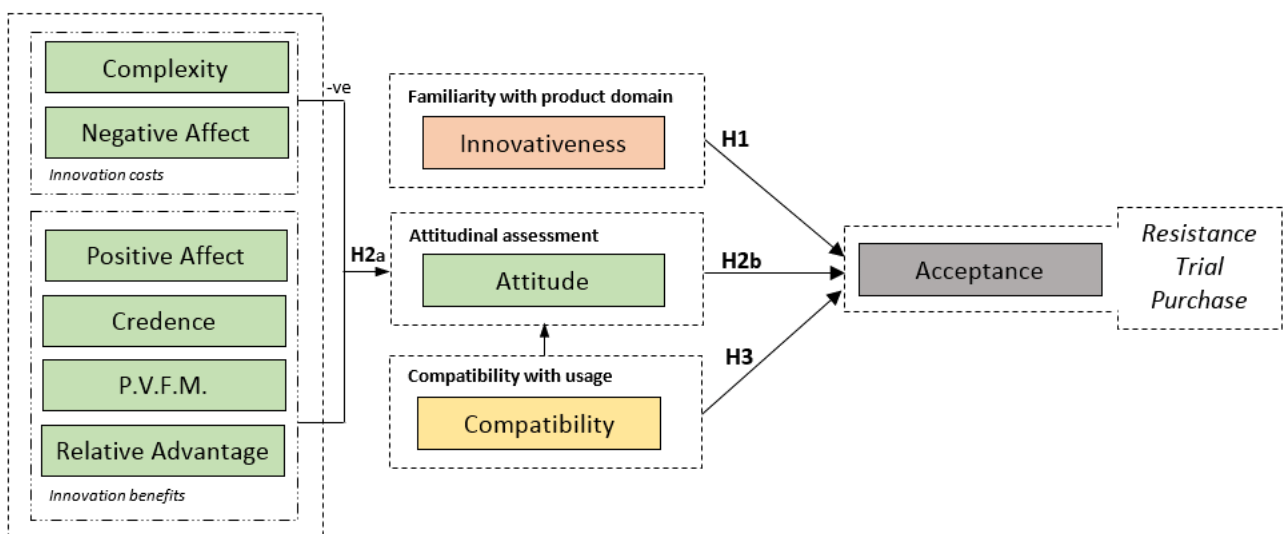
The fit of this sample model to the population of which it seeks to explain is considered very adequate (x^2= 6.817 (*df* = 7); CFI = 1.000, TLI = 1.003, RMSEA = .000 (LO90: .000 HI90: .064, PCLOSE: .858). This indicates the empirical influence of these constructs is responsible for comprehensively explaining what creates change in consumers from breaking their status quo. Regarding the size of this sample (*n* = 353), such a figure comfortably exceeds Boosma's (1983) recommendation that latent variable structural modelling exceeds sample sizes of at least 200, with support from Beauducel and Herzberg (2006, p. 202) that "WLSMV does not need a larger sample

size than ML estimation and because it leads to more correct chi-square rejection rates and to more precise loading estimates with two and three categories". Herein, findings of this study are delineated through the drivers of cognitive and affective pathways that influence attitudinal formations and acceptance intentions. Supporting the empirical merit of this model, despite its complexity it still meets stringent model fit criterions, supporting the explanatory breadth of the model. Henceforth, the FACE elements of innovation acceptance are discussed.

Correlations:

Inspecting the sample correlations of the variables comprising this final structural model, results reveal logical and generally quite strong relationships. Being a negatively valenced construct, *Complexity* is inversely correlated with each variable with the exception of the fellow negatively valenced *Negative Affect*. Thus, as perceptions of difficulty in interacting with an innovation are inversely related with perceptions of positive financial value, such is conceptually and logically as anticipated. Furthermore, *Negative Affect* is negligibly correlated with a variety of constructs that one may not superficially expect; such includes *Relative Advantage* ($r = .053$), *Innovativeness* ($r = .087$), and *Compatibility* ($r = .007$). As such are small in magnitude, they indicate the likely disconnect between cognition and affect, suggesting each are distinct evaluations of a change in consumption behaviour. Unsurprisingly, *Negative Affect* is correlated with *Positive Affect* ($r = .258$), with such likely to occur as respondents experience (or at least indicate) an overall greater sense of affect experienced. This does not suggest these constructs cause *Negative Affect*, but merely respondents who experience these constructs also experience more *Negative Affect*. Further analysis indicates *Compatibility* (mean $r = .451$ in magnitude) is generally strongly related with the other constructs examined, supporting the conceptual relationship between an innovation's fit with a consumer's needs, wants, and lifestyles, and that of other assessments. Similarly, *Attitude* exhibits strong correlations (mean $r = .447$ in magnitude), this indicates a strong empirical link with cognitive and affective assessments, offering preliminary support for its mediating influence. Finally, the relationship between *Credence* and other cognitive and affective constructs is generally very strong (mean $r = .429$ in magnitude), thus supporting the inclusion of such an assessment into the innovation acceptance context, whilst highlighting how the certainty of negative consequences is related with other cognitive, and affective variables of innovation acceptance.

Table 73: Sample correlations (mildly innovative, *n* = 353)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Complex. (1)	1.000								
Rel. Adv. (2)	-.052	1.000							
P.V.F.M. (3)	.000	.325	1.000						
Pos. Aff. (4)	-.066	.482	.258	1.000					
Neg. Aff. (5)	.267	.053	-.124	.258	1.000				
Innovativ. (6)	-.120	.301	.061	.308	.087	1.000			
Compat. (7)	-.189	.645	.318	.657	.007	.392	1.000		
Attitude (8)	-.317	.616	.315	.578	-.018	.354	.717	1.000	
Credence (9)	-.213	.533	.375	.644	-.069	.252	.685	.664	1.000

Familiarity with product domain:

Examining consumer's perceptions of familiarity with the product domain as a driver of breaking from one's status quo, the impact of *Knowledge* is discovered to be statistically non-significant for mildly innovative products (rejecting H:1a). Interpreting the influence of respondent's own perception of their *Innovativeness* on *Acceptance* as delineated in Table 74 (β =.114, $p < .01$, CI: .015, .239, SRW = .128) the regression weights observed endorse a statistically significant influence. Such a discovery is supported by the consistently positive confidence intervals (.015, .239), indicating the variable has some form of positive influence for at least 95% of respondents, whilst additionally, a one-unit rise in

Table 74: *Acceptance* regression estimates (mildly innovative, *n* = 353)

Exogenous	β (C.I.)	Odds	SE	t	Sig.	SRW	R^2
Attitude	.148 (-.006, .317)	1.160	.076	1.948	.051	.147[#]	
Compatibility	.377 (.218, .534)	1.458	.072	5.259	***	.498	.449
Innovativeness	.114 (.015, .239)	1.121	.049	2.322	**	.128	

Note: DV: *Acceptance*
** $p < .01$, *** $p < .001$
# standardized factor loading $p < .05$ only

an individual's perception of their own innovativeness results in a 12.1% likelihood of moving into the next region of *Acceptance*. In light of these findings, Hypothesis 1b is supported. Similar to that observed in this study, Innovativeness is discovered to be a domain-specific key influencer by Agarwal and Prasad, (1998), Lu, Yao and Yu (2005), and Chao, Reid and Mavondo (2012), however such is the first discovery in the specific context of acceptance of a mildly innovation product. These statistical findings indicate that as respondents believe themselves to be more innovative within the product category of the subject innovation examined, their intentions to accept increase, with *Innovativeness* assisting in breaking a consumer from a status quo of *Resistance*, towards *Trial* and *Purchase*. Herein,

as one believes they have more familiarity and experience with similar products, they may be more confident that they can comfortably execute intended behaviours with a mildly innovative product (supported through the inverse relationship with *Complexity*, $r = -.120$), and may exhibit more consistent variety seeking behaviour. In light of such findings, one may conclude those who believe they have exhibited innovative behaviour in the past are more likely to exhibit innovative behaviour in the future. Thus, for equivalent perceptions of a product's innovativeness, these individuals may be more likely to accept an innovation than those who consider themselves less innovative in the product category. Herein, such consumers may be an appropriate target for practitioners to form the initial diffusion segments of "innovators" or "early adopters". Such may provide a possible explanation for the lack of substantial empirical influence of *PBC* and *Knowledge* in this sample, and may suggest Innovativeness encompasses and represents a notion of proficiency that obfuscates the influence of *PBC* and *Knowledge* on *Acceptance*.

Attitudinal assessments:

The key exponents of empirical influence, regression relationships, are revealed in Table 75 for drivers of attitudinal assessments. Such results reveal varied empirical impacts on *Attitude*, with a high amount of variance explained in this dependent construct (62.7%), providing support that the empirical findings of this structural model are not only empirically qualified, but also a huge improvement on that of traditional adoption frameworks such as the TPB and TAM. Examining the empirical relationships specified in this structural framework, the assessment of factor loadings, confidence intervals, and standardized regression weights in light of theoretical support indicate that *P.V.F.M., Positive Affect*, *Negative Affect*, *Compatibility*, *Credence, Complexity* and *Relative Advantage* are all salient drivers in attitudinal assessments of a mildly innovative product, with *Image*'s influence (H: 2avi) rejected.

Table 75: *Attitude* regression estimates (mildly innovative, *n* = 353)

Exogenous	Endogenous	β (C.I.)	SE	t	Sig.	SRW	R^2
Complexity	Attitude	-.048 (-.152, .049)	.042	-1.142	.253	-.040	
Neg. Affect	Attitude	-.232 (-.378, -.092)	.066	-3.548	***	-.131	
Pos. Affect	Attitude	.566 (.388, .726)	.071	7.966	***	.351	
Credence	Attitude	.354 (.147, .525)	.072	4.942	***	.225	.627
Rel. Adv.	Attitude	.053 (-.057, .160)	.038	1.390	.164	.055	
P.V.F.M.	Attitude	.096 (.026, .161)	.030	3.177	**	.109	
Compatibility	Attitude	.171 (.066, .273)	.038	4.534	***	.227	

** $p < .01$, *** $p < .001$

Assessing the influence of affect in innovation acceptance (a largely neglected are of academic research) it is indicated the affect individuals experience when exposed to a product they perceive to be mildly innovative are highly important. As the *C.I.A.* measure used to capture such affect is developed and specified for the specific context of innovations, capture of such affect is believed to be both accurate and parsimonious. Examining observed statistical results (β =.566, $p < .001$, CI: .388, .726; SRW = .351), it is suggested the experience of *Positive Affect* is extremely pertinent in shaping the *Attitude* an individual forms towards a mildly innovative product. As the experience of this construct is associated with increasing experience of positively valenced emotions of *Joy*, and the reduced experience of negative *Apathy* emotions, such a dual valenced influence is particularly unique, supporting Hypothesis 2aii. Considering the salience of *Apathy* emotions (i.e. *Bored, Unimpressed,* and *Unexcited*) to the innovation acceptance construct, *Positive Affect* is a conceptual composition unlikely to be replicated in other affective scales, and one that exerts substantial influence. Considering the very large effect size of this regression relationship (β =.566, $p < .001$), it is likely this positive affective state is the single most powerful way to enhance consumer's attitude towards a mildly innovative product. A sibling to such, *Negative Affect* also exerts a substantial influence on *Attitude* (β =-.232, $p < .001$, CI: -.378, -.092; SRW = -.131). This is another important discovery, as the capture of emotions is yet to be thoroughly discerned into positive and negative affective states in the context of innovations, let alone the establishment of considerable empirical influence of both these states. Assessing such a relationship, the sizeable effect (β = -.232, $p < .001$) indicates the increasing experience of *Apathy*, *Melancholy,* and *Cynicism* emotions will result in an increasingly strong negative attitude towards a mildly innovative product, supporting Hypothesis 2aiii. As the metric of both *Positive Affect* and *Negative Affect* exist on a scale of $0 - 7$, with each unit rise increasing the intensity with which that emotion is experienced, a broader range of scale points are provided compared to other dependent variables (where a score of 1 - 3 indicates disagreement, 4 neutrality, and 5 - 7 agreement), thus a one-unit rise in emotions represents a smaller increase in intensity compared to the cognitive constructs examined. As a result, standardized regression weights are examined to compare the size of these affective influences, and it is discovered the standardized influence of *Positive Affect* (.357) and *Negative Affect* (-.131) are smaller than their unstandardized counterparts, but still substantial. Furthermore, *Positive Affect* still remains the largest influencer of attitudes towards mildly innovative products. Alternative affect measures such as the *PAD* (Mehrabian and Russell, 1974), *CES* (Richins, 1997), and *HCE* (Laros and Steenkamp, 2005) are valid affective measures, yet such compositions have not been supported as key variables in new product acceptance. Thus, the findings relating to the *C.I.A.* in this study are profound, offering practitioners overwhelming support

that they should seek to enhance (positive) or reduce (negative) the experience of these innovation-specific emotions in order to better facilitate acceptance of innovations. Considering both positive and negative affect, the experience of this affect is revealed a profound influencer of attitudes in innovation acceptance, and a hugely important (perhaps even more so) compliment to the influence of cognitive variables.

Representing positive perceptions of risk held with great certainty, consumers' perception of *Credence* is another key influencer in the conceptual puzzle of innovation acceptance. As indicated by its substantial empirical effect (β =.354, *p* < .001, CI: .147, .525; SRW = .225) increasingly positive assessments of *Credence* greatly enhance the positivity and strength of the *Attitude* respondents hold towards a mildly innovative product. Additionally, SRW estimates (.225) indicate a strong standardized effect comparable to that of *Compatibility*. In light of such an empirical finding, this study reveals another intriguing research result, one similar to risk perceptions discoveries of Ronteltap et al. (2007), Yang et al. (2012), Gao, Leicheter and Wei (2012) in supporting Hypothesis 2aiv. This study is the first to extensively examine *Credence* (particularly in association with the certainty of such perceptions) in the specific conceptual realm of innovation acceptance. Herein, as innovations are often unfamiliar, novel, and potentially difficult to assess (a result of the increased number of credence qualities), such findings suggest that a strong positive attitudinal assessment requires consumers to consider the likelihood of negative consequences occurring from using an innovation low, and with great certainty. As the status quo of resistance is likely to prevail for most, these findings indicate positive perceptions of *Credence* are pivotal in motivating and encouraging acceptance of mildly innovative products beyond the natural tendency to resist.

Examining *PVFM*'s influence (β =.096, *p* < .01, CI: .026, .161; SRW = .109) indicates that as respondents perceive a mildly innovative product to possess value for money, their attitude towards this innovation becomes more positive in both valence and strength. Such a finding is in line with those of Sweeney and Soutar (2001), Turel and Serenko (2006), and Turel, Serenko and Bontis (2007) who reveal the significant influence of the construct as a contributor to perceived value. Considering these innovations are perceived as mildly innovative, this indicates attitudinal assessments of innovations are influenced by financial means, a significant finding, as many adoption frameworks (including the TRA, TPB, TAM, UTAUT, and CAT) do not include assessments of financial means. Herein, it is concluded the financial value offered by a mildly innovative product plays a vital role in innovation acceptance, suggesting there may be a limit to the price industry can charge for an innovation, and that

this limit should relate to what is considered affordable or "offering value" by the consumer, thus positively enhancing the consumer's attitude towards the innovation. Evidently, Hypothesis 2avii is supported.

Revealing reserved relationships, despite their lack of statistical significance both *Complexity* and *Relative Advantage's* impact on *Attitude* is retained in this model. Both these variables exhibit moderate influence, with a unit rise in *Complexity* ($\beta = -.048$, $p > .05$) resulting in a small decrease, and *Relative Advantage* resulting in a slightly larger increase ($\beta = .053$, $p > .05$) in *Attitude*. Examining the confidence intervals (95% bias corrected bootstrap-adjusted) associated with such factor loadings, it is further supported these variables exhibit a varied influence across the majority of respondents (*Complexity:* -.152, .049; *Relative Advantage*: -.057, .160), whilst standardized estimates indicate empirically equivalent relationships to that of the unstandardized (-.040 and .055). Herein, despite their statistical non-significance, both *Complexity* and *Relative Advantage* are conceptually very relevant to the context of status quo and innovation acceptance, and thus should be retained for further analyses of such a model in light of several forms of empirical support. Firstly, such factor loadings, despite not being large in magnitude, are still in the anticipated direction and suggest appropriate fit with that of the population, as exhibited by their moderate *SE* values (.042 and .038). Thus, it is revealed with strong reliability that these two variables do influence *Attitude*, but in this particular "mildly innovative" sample, the influence does not quite meet traditional statistical criterions, however such relationships are considered pertinent, and do deserve further academic scrutiny. Moreover, considering the strong correlation between *Complexity* and *PBC* ($r = -.582$ for model implied construct estimates), and the latter's lack of statistically significant influence in this structural model, further analysis of which respondents are only asked to assess one of these constructs (of which this study supports *Complexity*) may result in a stronger and more statistically significant influence. Thus, in light of their long established significance in innovation adoption studies and its conceptual relevance to the research context, moderate effect size, contribution to overall variance explained, and the good model fit of the structural model with these two variables retained, both *Complexity* and *Relative Advantage* are retained as part of the explanation of acceptance of "mildly innovative" products, as drivers of a consumer's attitudinal assessment of an innovation, tentatively supporting Hypotheses 2ai and 2av.

Examining the empirical influence of *Compatibility* on attitudinal assessment of an innovation, it was not initially hypothesized that the construct would directly exert influence. However, modification

indices indicated a strong causal link between the two (β =.171, p < .001, CI: .066, .273; SRW = .227) that is acknowledged and retained as part of this model. Assessing the SRW of this relationship (.227), such an estimate is larger in size than its unstandardized constituent, further supporting the importance of this cognitive construct to consumer attitudes. From these figures, it is clear the fit a mildly innovative product has with the needs, wants, and lifestyles of consumers is extremely important in influencing the attitude they hold towards said innovation. Birthed from Rogers' (1995, 2003) innovation diffusion characteristics, a similar relationship is observed by authors such as Taylor and Todd (1995a), and Schierz, Schilke, and Wirtz (2010), of which compatibility also exhibits substantial effect sizes. Thus, it is concluded the experience of such *Compatibility* is an essential player in innovation acceptance, and will result in increasingly strong positive attitudes, revealing Research Finding 1. Considering newly developed products can often be quite outlandish, even unrealistic, many of which fail to proceed beyond the introduction stage of diffusion; thus the influence of perceived fit with ones needs and lifestyle provides vital insights into why practitioners may face such low adoption rates for some innovations. Evidently, it is concluded a mildly innovative product must fit with a consumer's needs, wants and lifestyles if it is any chance of breaking consumers from their status quo through enhanced positivity in attitudes.

Assessing the construct's influence as an independent variable, it is revealed the *Attitude* a consumer holds is particularly important (β =.148, p < .052, CI: -.006, .317; SRW = .147). Whilst such a relationship may be the smallest distance from statistically significant, it does exhibit a considerable effect size (β =.148), suggesting increasingly strong positive attitudes play an important role in increasing the likelihood of *Acceptance*. Examining the (95% bias corrected bootstrap adjusted) confidence intervals for this relationship (-.006, .317) it is revealed that a small proportion of respondents do not experience a positive empirical influence, however, for those that exist at the upper regions of the confidence interval, *Attitude* exerts a very strong empirical influence over *Acceptance*, thus the construct should not be ignored. Additionally, assessing the SRW, it is observed that whilst the unstandardized estimate is marginally off satisfying criterions of statistical significance, the standardized estimate meets such a benchmark, suggesting the influence of *Attitude* is pertinent. Examining the odds estimated (as revealed in Table 74), it is suggested the odds of moving into the next category of *Acceptance* increase 16% for every one-unit rise in *Attitude*. Whilst this may not be substantial in its own right, in accordance with other influencers this could prove pertinent. Herein, considering the observed antecedent effects of *Attitude*, Hypothesis 2b is supported. Observing such a relationship, this study is not alone in its empirical support for attitudinal assessments in somewhat

equivalent conceptual outcomes. Many studies, including Bruner and Kumar (2005) Kulviwat et al. (2007), and Nasco et al. (2008) support such a relationship. However, specific to this context, it is indicated that more favourable assessments towards a mildly innovative product do contribute to moving a consumer's intentions from *Resistance* to *Trial*, and *Trial* to *Purchase*. With this in mind, practitioners must ensure attitudes towards innovations are positive if the status quo (of resistance) is to be challenged. Such may be particularly important once a mildly innovative product is trialed, ensuring customer contact points associated with product trial, service experience and environment, and price perceptions are all conditioned towards creating a strong positive attitude so to facilitate purchase. Herein, *Attitudes'* role in breaking consumers from their status quo is vital.

Compatibility with usage:

Assessing *Compatibility*'s competency at not only enhancing attitudinal assessments, but also improving *Acceptance* intentions for mildly innovative products, Table 74 reveals a very strong empirical effect (β =.377, p < .001, CI: .218, .534; SRW = .498). The effect size associated with such a relationship (β =.377) reveals that rising levels of *Compatibility* have a very strong direct influence on respondents *Acceptance* intentions. Examining this relationship, such a regression weight equates to a 45.8% increase in the odds of moving to the next level of *Acceptance* for a one unit rise in *Compatibility*. Such a large effect size is profound, suggesting compatibility is pivotal in innovation acceptance. Inspecting the confidence intervals of such a regression weight (.218, .534), the construct of *Compatibility* is a very strong empirical influence in 95% of respondents, with the upper region exhibiting extremely large effect. Furthermore, as evidenced in the SRW of .498, *Compatibility* is further endorsed as the largest influencer of *Acceptance* intentions for mildly innovative products, supporting Hypothesis 3. As discussed in relation to the construct's influence on attitudes, *Compatibility* is explored as a key contributor to innovation acceptance by several authors (see Arts, Frambach, and Bijmolt, 2011; Yang et al., 2012), however this research supports such with a focus on products deemed mildly innovative by respondents. Intriguingly, the influence of *Compatibility* on *Acceptance* intentions for mildly innovative products is 120.4% larger an effect than its influence on *Attitude*. This indicates perceptions of fit associated with needs, wants, and lifestyles are primarily a facilitator of status quo breakage, with its positive role on enhancing *Attitudes* a secondary effect. In light of this discovery it is very strongly supported that for a consumer to intend to move their acceptance from *Resistance* to *Trial*, and *Trial* to *Purchase*, a mildly innovative product must fit with the needs, wants, and lifestyles of that consumer. Considering the often unrealistic or impractical

nature of new product innovations, such is an encouraging finding for practitioners and academics alike. Herein, an absence of such fit will not necessarily ensure resistance, but will require much more favourable perceptions (possibly impossibly favourable for some) are needed to break ones status quo and facilitate acceptance; this influence appears critical.

Enablers (internal and external):

Examining consumers' perceptions of internal and external enablers of breaking from one's status quo, the impact of *Perceived Behavioural Control* (H: 4a) and *Social Influences* (H: 4b) are both discovered to be statistically non-significant for mildly innovative products. This indicates that when a product is perceived as mildly innovative, the sense a consumer has of being able to execute various behaviours is not salient. This may be down to the familiarity and confidence the consumer may possess with the innovation's domain, preventing it from being pivotal in breaking from existing patterns of behaviour. This is not to say that it enforces the status quo, just that it is not pivotal in its destruction. Similarly, the perceived pressures from important social groups do also not enable breaking from the status quo. Having the approval and expectations of these individuals does not make a consumer break from existing patterns of behaviour and accept a new innovation. Herein, it is discovered for these types of innovations, these enablers are not salient, however future research should scrutinize such constructs more thoroughly to determine if this discovery is widely observed. Likewise, their influence in products perceived as more innovative may be different all together.

Indirect effects:

The structural model examined positions *Attitude* as a key meditating variable between various antecedents and the outcome of variable of *Acceptance.* Assessing this mediating influence, Table 76 reveals the construct does not carry statistically substantial empirical influence of its antecedents through to *Acceptance* (mean indirect effect = .036 in magnitude), indicating the role of these variables (with exception made to *Compatibility*) is statistically limited to a direct predictor of *Attitude*. Herein, such does not weaken the value of these constructs, but does provide a clearer perspective of their role in the acceptance of mildly innovative products. Despite the generally small overall empirical influence, for *Positive Affect* (β =.084) and *Credence* (β =.052), a small indirect influence is evidenced. This is not the first study to support the mediating influence of *Attitude* though; many studies (including Bruner and Kumar, 2005; and Kulviwat et al., 2007) have discovered the meditating

influence of attitudinal assessments. Nonetheless though, results in support of such mediation in this study further reveal the importance of antecedents such as emotions of *Joy* and *Apathy* and perceptions or *Credence* in the acceptance of a mildly innovative product, as such exert not only significant influence on *Attitude*, but also an indirect effect on individual's intention to break from their status quo and accept an innovation. In light of this, it is further endorsed that practitioners must pay considerable attention to ensuring the affect experienced towards mildly innovative products is strongly positive, but also that perceptions of these innovations are not associated with a high likelihood of negative outcomes occurring.

Table 76: Indirect effects (mildly innovative, *n* = 353)

	Complex.	Rel. Adv.	P.V.F.M.	Pos. Affect	Neg. Affect	Credence
F.L.	-.007	.008	.014	.084	-.034	.052
Odds	-1.007	1.008	1.014	1.088	1.035	1.053

Note: Mediator: Attitude, DV: Acceptance

Acceptance thresholds:

Examining the thresholds of *Acceptance* in the "mildly innovative" sample (see Table 77), this structural model implies any respondent who scores less than -.788 on the underlying latent *Acceptance* variable will intend to resist the innovation. In this sample, this was the case for 124 respondents (35.13%); a relatively large amount, but one not surprising considering the products are perceived as relatively new, and in evidence of a sharp difference of characteristics to those prior. Much more commonly though, respondents intend to trial mildly innovative products (58.07%). Herein, this model indicates underlying *Acceptance* scores existing within the range of -.788 to 1.859 will result in respondents preferring the opportunity to further interact with, or research the innovation before deciding to purchase or not. Due to the novelty of the innovations and consumers' curiosity, this is likely to be an important initial step in destroying the status quo, and in this "mildly innovative" sample, this was the most regularly indicated behavioural intention, with 205 respondents selecting an intention to *Trial*. Finally, this structural model suggests a score greater than 1.859 for the underlying *Acceptance* variable will result in a respondent intending to purchase mildly innovative products, and in this sample, *Purchase* is indicated by 24 respondents (6.80%).

Table 77: *Acceptance* threshold scores (mildly innovative, *n* = 353)

Resistance (n =124)	*Trial* (n = 205)	Purchase (n = 24)
-.788 <	-.788 - 1.859	1.859+

Note: Intercept = -.093

Examining the intercept figure for this structural model (-.093), it is determined that when respondents indicate scores for the antecedent variables to *Acceptance* at the average level of the sample, the behavioural intention for the underlying *Acceptance* construct is trial. This figure is salient, as it suggests that the average consumer who is exposed to these products and perceives them to be mildly innovate, does not want to resist them, and intends to at least conduct further research or interaction before trialing or not. This may be a result of the interest or intrigue sparked by such products, and is an encouraging finding for practitioners, as it suggests that for products perceived mildly innovative, only an average level of compatibility, innovativeness, and a positive attitudinal assessment are required to elicit an intention to trial. However, to move respondents' intent from trial to purchase, large increases in these variables may be required, of which this study suggests enhanced perceptions of the fit with an individual's needs, wants, and lifestyles may be most effective.

In consideration of the observed behavioural intentions of respondents, such findings are particularly pertinent in understanding breaking the status quo of innovative behaviour. As this study is likely to be respondents first exposure to the products they are exposed to (with confirmation they have not used or purchased it before), as well as the fact they perceive these products to be innovative, it is encouraging so many indicate an intention to trial these innovations. As the product examined is yet to be used or purchased by the respondent, and the fact that most may have never been exposed to the product at all, it could be assumed the default status quo would be characterized by resistance. As such is not the case for the "mildly innovative" products examined in this study, it is discovered that more than often respondents wish to "trial" these innovations despite their perceived newness. Herein, it must be noted such is the case for specifically those products considered mildly innovative, with such findings suggesting that either respondent's status quo when exposed to an innovation is to trial, or as these products are considered innovative, respondents are prepared to break from the status quo of resistance and trial them. Nonetheless, such is beyond the scope of this study, and as this study is the first of its kind to extensively explore innovation acceptance in consideration of status quo biases, further research is required before a conclusive perspective can be formed. In light of such a discovery, the enhanced discoveries of innovation acceptance behaviour offer a major methodological and conceptual contribution provided by this study, as such is a successful capture of behavioural intentions beyond the limited measures of "purchase" or "adoption". With this in mind, the enhanced options of *Trial* and *Resistance* are particularly important to the context of innovation acceptance, of which such behaviours are likely inhibited by high degrees of uncertainty and unfamiliarity. In such

scenarios, only indicating the extent to which one wishes to "adopt" or "purchase" an innovation is not sufficient, and these enhanced assessments of behavioural intentions are highly valuable.

Hypotheses summary:

In light of the aforementioned discussion of the empirical results observed for the final theoretical model, in this mildly innovative sample, confirmation exists for the following hypotheses:

Table 78: Summary of hypothesized empirical relationships (mildly innovative, *n* = 353)

Hypothesis	Exogenous	Endogenous	Empirical Outcome
H1a	Knowledge	Acceptance	REJECTED
H1b	Innovativeness	Acceptance	SUPPORTED
H2ai	Complexity	Attitude	TENT. SUPPORT.[*]
H2aii	Negative Affect	Attitude	SUPPORTED
H2aiii	Positive Affect	Attitude	SUPPORTED
H2aiv	Credence	Attitude	SUPPORTED
H2av	Relative Advantage	Attitude	TENT. SUPPORT.[*]
H2avi	Image	Attitude	REJECTED
H2avii	P.V.F.M.	Attitude	SUPPORTED
H2b	Attitude	Acceptance	SUPPORTED
H3	Compatibility	Acceptance	SUPPORTED
H4a	P.B.C.	Acceptance	REJECTED
H4b	Social Influences	Acceptance	REJECTED
RF1	Compatibility	Attitude	SUPPORTED

[*] Indicates these variables do not exert a statistically significant influence in this sample, but are theoretically and conceptually relevant, and widely supported with the research context and thus deserving of future attention

Interim conclusion:

As addressed in the above discussion, the findings observed in this study reveal key influencers of an individual's intention to accept a mildly innovative product. Firstly, it is concluded the perception of a highly innovative product's *Complexity*, its *Relative Advantage*, *Perceived Value For Money*, and its *Compatibility*, alongside the *Positive Affect* and *Negative Affect* experienced by the individual and the *Credence* associated with it, all influence the *Attitude* a respondent holds towards a product considered mildly innovative. This *Attitude*, as well as the *Compatibility* of the innovation and the *Innovativeness* of the respondent are then statistically significant in driving destruction of the status quo through *Acceptance* of mildly innovative products. As observed in Table 75, whilst the influence of *Complexity* and *Relative Advantage* on *Attitude* may be statistically contentious, their effect sizes, conceptual relevance, and similarly supported relationships in various other studies (particularly those of Roger's

1995, 2003 innovation diffusion) justify them as salient variables in the examination of consumer innovativeness, supporting their retention for further scrutiny. Examining the holistic theoretical model, the innovation's fit with the needs, wants, and lifestyles of the individual proves the largest influencer, indicating the objective of encouraging a resistor to trial, or a trailer to purchase may be best served by enhancing the perception of *Compatibility* of the innovation. Furthermore, both stronger positive attitudinal assessments made towards a mildly innovative product, and greater perceptions of an individual's innovative behaviour within that product category offer further influence. Such indicates acceptance can be facilitated through a variety of mechanisms, and should be approached with a multi-dimensional and dynamic perspective by practitioners. In conclusion, this iteration of the *FACE* theoretical model reveals a combination of variables that successfully reveals to practitioners what it takes to break a consumer from their current status quo when considering acceptance of a product perceived as mildly innovative.

Structural analyses: highly innovative

Analyses of the drivers of breaking from the status quo in accepting highly innovative products is undertaken in a manner identical to that of the previous sample. Specifically, the use of mean-centered composites, assessments of statistical criterions of significance, model fit, and specification are equivalent to those of the "mildly innovative" sample. Examining such provides substantial and previously unattained insight into consumer's acceptance of those products considered highly innovative, whilst further illuminating destruction of the status quo in consumer innovation acceptance. Likewise, in this highly innovative sample any relationship that exhibits a moderate effect size may still be considered salient, as whilst these relationships may not be empirically gratuitous, they may still offer conceptual or theoretical value, particularly in the event of an adequately fitting model. Nonetheless, results pertaining to this sample are considered infantile, and do require further empirical replication and validation, particularly under more specified research instruments and numerous samples. Thus, as with the previous sample, the unique exploration of innovation acceptance in this research ensures the final model developed is still very much experimental in its approach.

Hypotheses testing:

The structural model specified upon the established empirical relationships discussed in the "Hypotheses Development" chapter of this research is now examined again in this "highly innovative" sample. Yet again, this stage of the research aims to identify an appropriate fitting model that conceptually explains consumers breaking from their status quo in the acceptance of innovations, exploring the *FACE Model of Consumer Innovation Acceptance* for highly innovative products. Regarding the dependent variable, as in the previous sample, respondents are provided with the behavioural intention options of resisting, trialing, or purchasing the innovation to represent breaking from their current status quo product alternatives. As indicated in Table 80, a substantial amount of variance in the final dependent variable is observed (49.5%), suggesting the final conceptual framework of this study goes a long way towards understanding this vital, and to date, concealed nuance of consumer behaviour. Through examining this model, a number of the theoretically proposed relationships are accepted (to be discussed later), however several are rejected. These non-supported relationships include and *Relative Advantage (H: 2av)* and *Image's (H: 2avi)* impact on *Attitude,* and *Knowledge (H: 1a)*, and *Social Influences' (H: 4b)*, impact on *Acceptance*. Through such analyses, those constructs discovered to not empirically influence their respective dependent variable are

omitted, with the final structural model to explain consumers breaking from their status quo in accepting highly innovative products developed (see Figure 28).

Figure 28: Final supported structural model (highly innovative, *n* = 348)
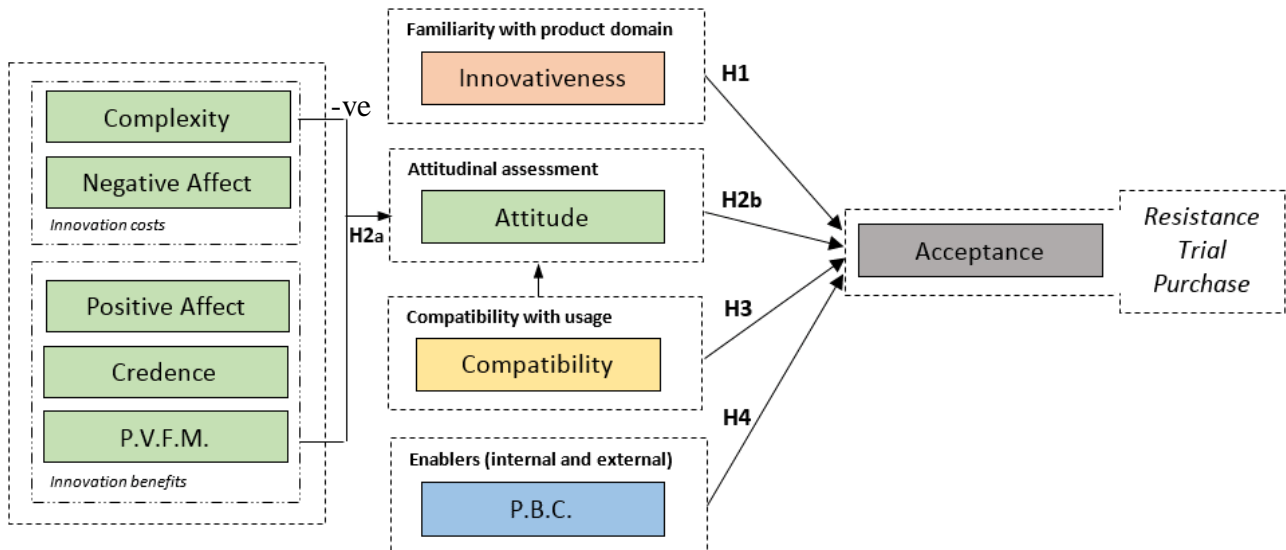
As preliminary assessment of the final "highly innovative" sample structural model (see Figure 28), the fit of the model to the population of which it seeks to explain is considered very adequate (x^2 = 9.067 (*df* = 7); CFI = .990, TLI = .976, RMSEA = .029 (LO90: .000 HI90: .076, PCLOSE: .715). Regarding the size of this sample (*n* = 348), such a figure comfortably exceeds Boosma's (1983) recommendation that latent variable structural modelling exceeds sample sizes of at least 200. Herein, such a theoretical framework indicates that the empirical influence of these constructs parsimoniously and comprehensively explains the cognitive and affective pathways influential to attitudinal formations, and subsequently (alongside further cognitive pathways) the acceptance of products considered highly innovative. Further discussion will explore the implications of this model in depth.

Correlations:

Scrutinizing the sample correlations of this final structural model (see Table 79), results again reveal logical and generally quite strong relationships. Firstly, no correlations are of a questionably large size (> .850), thus multicollinearity is not an observed concern. Regarding the specific constructs, *Complexity* is inversely correlated with each variable with the exception of the fellow negatively valenced *Negative Affect*, and as such is a negatively valenced construct, this is conceptually logical. Intriguingly, *P.B.C.* is discovered to exhibit the largest correlation with the construct (*r* = -.445), yet

305

again validating the unique relationship these variables share with regards to perceptions of difficulty and perceptions of control; a key nuance likely specific to innovation acceptance. Similar to that observed for *Complexity*, *Negative Affect* is inversely related with each variable, with the exception of *Positive Affect* ($r = .301$). As innovations are likely to elicit strong emotional reactions in individuals, this is again encouraging as it indicates when respondents are emotionally connected to a highly innovative product, they experience both forms of affect, not purely positive or negative. Further analysis reveals *Attitude* exhibits strong correlations with most variables (mean $r = .438$ in magnitude), indicating a strong empirical link with both cognitive and affective assessments, whilst offering preliminary support for its mediating influence. Similarly, *Compatibility* (mean $r = .461$ in magnitude) is also strongly related with the other constructs, supporting the conceptual relationship between a highly innovative product's fit with a consumer's needs, wants, and lifestyles, and that of other cognitive and affective assessments. Interestingly, the constructs weakest correlation ($r = -.218$) is observed for *Negative Affect*, suggesting that these two are minimally related, and highlighting the lack of negative affect associated with positive perceptions of fit. Finally, the relationship between *Credence* and other cognitive and affective constructs is again, quite strong (mean $r = .426$ in magnitude). Such again validates the inclusion of the construct into the innovation acceptance context, whilst highlighting how the certainty of negative consequences is related with other cognitive and affective variables of innovation acceptance.

Table 79: Sample correlations (highly innovative, *n* = 348)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Complex. (1)	1.000								
P.B.C. (2)	-.445	1.000							
P.V.F.M. (3)	-.124	.237	1.000						
Pos. Aff. (4)	-.162	.095	.059	1.000					
Neg. Aff. (5)	.355	-.200	-.187	.301	1.000				
Innovativ. (6)	-.189	.303	.170	.335	-.014	1.000			
Attitude (7)	-.370	.313	.356	.482	-.275	.361	1.000		
Credence (8)	-.358	.365	.288	.355	-.209	.464	.635	1.000	
Compat. (9)	-.339	.426	.316	.441	-.218	.504	.710	.735	1.000

Familiarity with product domain:

Examining consumer's perceptions of familiarity with the product domain as a driver of breaking from one's status quo, the impact of *Knowledge* is again discovered to be statistically non-significant (again, rejecting H:1a). This indicates that the familiarity associated with a consumer's increasing perception of knowledge of the subject innovation's product domain does not help move them from resistance

towards trial and acceptance. This is an important and perhaps encouraging discovery as it may suggest that consumers are prepared to adopt the unfamiliar. With respect to how much relatable knowledge they possess. This may allow practitioners to reach wider consumer bases in the early stages of adoption and diffusion. Assessing the other component of familiarity, an individual's perception of their own level of innovativeness within a particular product category is hypothesized to be salient in their adoption of such products (as proven in the previous sample). Interpreting *Innovativeness'* influence on *Acceptance* ($\beta =.156$, $p < .01$, CI: .043, .259, SRW = .165), such an observation endorses a statistically significant and empirically meaningful influence. This result suggests that as respondents

Table 80: *Acceptance* regression estimates (highly innovative, *n* = 348)

Exogenous	β (C.I.)	Odds	SE	t	Sig.	SRW	R^2
Attitude	.153 (-.087, .369)	1.165	.085	1.797	.072	.119	
Compatibility	.395 (.221, .581)	1.484	.085	4.656	***	.486	.495
Innovativeness	.156 (.043, .259)	1.169	.068	2.288	**	.165	
P.B.C.	.090 (-.112, .316)	1.094	.108	0.835	.404	.055	

Note: DV: *Acceptance*
** $p < .01$, *** $p < .001$

believe themselves to be more innovative within the product category of the subject innovation examined, their likelihood to break from their status quo increases. Such a discovery is supported by the consistently positive confidence intervals of the regression weight (.043, .259) which suggest the construct is somewhat salient for at least 95% of respondents, as well as the sizable SRW (.165), and odds that indicate the likelihood of a consumer moving into the next category of *Acceptance* with a one-unit rise in *Innovativeness* is 16.9%. In light of these findings, Hypothesis 1b is again supported. In this highly innovative sample, the influence of a personal perception of innovativeness is a valid contributor to the acceptance behaviour of individuals, supporting those findings previously discussed. As highly innovative products are likely to be more unfamiliar, and do by definition possess more sharp differences of characteristics to those prior, it is unsurprising that personal perceptions of innovativeness exert a stronger influence for those products deemed more innovative. However, the somewhat moderate empirical influence of *Innovativeness* in both samples (relative to constructs such as *Attitude* and *Compatibility*) indicates familiarity with a product domain does not exert a very strong influence in breaking the status quo; however it is integral nonetheless. Thus, it may be expected that those individuals who believe they are highly innovative within a product category are more susceptible to breaking from their status quo and residing within the adoption categories of "innovators" or "early adopters".

Attitudinal assessments:

Examining the antecedent impacts observed on attitudinal assessments of highly innovative products (as revealed in Table 81), regression relationships reveal varied empirical influence on *Attitude*. However, through such influence (and alongside the strong model fit), the variance explained in this dependent variable (65.2%) is very high, providing support that the empirical findings of this structural model are again both substantial and empirically credentialed.

Table 81: *Attitude* regression estimates (highly innovative, *n* = 348)

Exogenous	Endogenous	β (C.I.)	SE	t	Sig.	SRW	R^2
Complexity	Attitude	-.055 (-.156, .038)	.031	-1.774	.076	-.050	
Neg. Affect	Attitude	-.223 (-.323, -.139)	.035	-6.735	***	-.204	
Pos. Affect	Attitude	.348 (.246, .448)	.041	8.458	***	.318	.652
Credence	Attitude	.237 (.091, .397)	.054	4.373	***	.217	
P.V.F.M.	Attitude	.108 (.050, .176)	.024	4.554	***	.098	
Compatibility	Attitude	.219 (.132, .306)	.028	7.892	***	.199	

*** $p < .001$

Assessing the role affect plays in the acceptance of highly innovative products (as previously discussed such is a largely neglected are of academic research), it is again indicated the affect individuals experience when exposed to innovations is highly salient. Such analysis again employs the *C.I.A.* scale to capture affect specific to the context of innovations, discerning that both *Positive Affect* (β =.348, *p* < .001, CI: .246, 448; SRW = .318) and *Negative Affect* (β =-.223, *p* < .001, CI: -.323, -.139; SRW = -.204) exhibit strong empirical influence on *Attitude*. In light of the large effect sizes of such relationships, and the consistent and strong support of confidence intervals (*Positive Affect* CI: .246, .448; *Negative Affect* CI: -.323, -.139) and SRWs (*Positive Affect* SRW: .318; *Negative Affect* SRW: -.204), Hypotheses 2aii and 2aiii are supported. Inspecting these empirical influences, *Positive Affect* exerts an influence 56.1% stronger in magnitude than that of *Negative Affect* in this "highly innovative" sample, and it is again discovered that an enhanced positive affective state is the single most powerful way to enhance consumer's attitude towards an innovative product. This is a profound discovery. However, despite the similar empirical influence of *Negative Affect* in both samples (highly innovative: β =-.223, mildly innovative: β =-.232), in the "highly innovative" sample, *Positive Affect* exerts a substantially smaller influence. Such a finding indicates positive affect is going to be more successful at enhancing the strength and positivity of attitudes when perceptions of innovativeness are not high. Nonetheless, when innovations are perceived as highly innovative, enhancing the experience of emotions such as happy and pleased, whilst reducing the experience of emotions such as bored and

unimpressed, is likely to have a larger impact of facilitating acceptance. Nonetheless, such affect (with the addition of *Wonder* emotions such as surprised and astonished) are still very powerful for products perceived to be more innovative. Likewise, the experience of *Cynicism* (i.e. sceptical or suspicious) or *Trepidation* (i.e. nervous or tense) emotions is again proven very powerful at reducing the positivity and strength of *Attitude* in both samples, thus practitioners must ensure respondents do not experience such affect when exposed to or interacting with an innovation. Herein, the capture of affect specific to the experience of innovations (such as *Cynicism, Wonder*, *Trepidation*, *Apathy*, etc.) as achieved through the *C.I.A.* scale not only addresses the weaknesses of existing affect measures, but also facilitates the refinement of empirical analysis to the context of innovation acceptance, with preliminary support provided that such emotions are pivotal in breaking one from the status quo in such consumer behaviour. Overall, such findings conclusively prove the dual influence of affect is extremely pivotal in shaping the attitudes consumers form towards an innovative product; thus playing a critical role in status quo destruction.

Encompassing perceptions of risk and uncertainty, *Credence* is examined as an empirical antecedent to the attitude held towards a highly innovative product in this theoretical framework. Such is particularly important to this theoretical framework considering the highly innovative perceptions of such products. Herein, logic dictates that as a product is perceived as more new, novel, or different from existing products, the credence (risk and certainty) associated with adopting such an innovation, as perceived by consumers, would be expected to increase; thus such an influence is scrutinized in this sample. As indicated by its substantial empirical effect ($\beta = .237\ p < .001$, CI: .091, .397; SRW = .217), increasingly positive assessments of *Credence* (positive in this study represents low levels of risk held with higher certainty) do enhance the positivity and strength of *Attitude* respondents hold towards a highly innovative product. Herein, Hypothesis 2aiv is again supported. Further examining such, the empirical influence of *Credence* in this sample is comparatively smaller (49.4%) than in the previous sample. Such could possibly be an externality of the higher perception of innovativeness, in which the higher novelty and newness attributed to the products overshadows or perhaps counteract some *Credence* perceptions. Such is not to say highly innovative products are not perceived as risky, just that positive *Credence* assessments do not exert as strong an influence on *Attitude* when the products are considered highly innovative. Nonetheless, it is again supported that as innovations are often unfamiliar, novel, and potentially difficult to assess (due to the increased number of credence qualities), consumer perceptions of the likelihood of negative consequences occurring from using a highly innovative product should be low, with great certainty, to develop strong positive attitudes

towards a highly innovative product. Furthermore, as the status quo of resistance is likely to prevail if a product is considered too certainly risky, positive perceptions of *Credence* are likely to be pivotal in motivating and encouraging breaking from the status quo through acceptance of highly innovative products.

Of the aforementioned supported empirical relationships, *PVFM*'s influence (β =.108, *p* < .001, CI: .050, .176; SRW = .098) indicates that as respondents perceive a highly innovative product to possess value for money, their attitude towards this innovation becomes more positive in both valence and strength. Such is similar to that discovered in the previous sample (β =.096, *p* < .001), thus further endorsing this relationship as a key contributor in innovation acceptance, and presumably status quo research. In addition to such, as many adoption frameworks (including the TRA, TPB, TAM, UTAUT, and CAT) do not include assessments of financial means, such a discovery is particularly profound. Conceptually, this discovery indicates the price of a highly innovative product is important. Even more importantly though, consumers need to perceive highly innovative products as offer financial value for the price charged. As prices may be high in the early stages of commercialization as organizations attempt to recoup large R&D costs, it is essential that perceptions of the products quality are high so to ensure maximum value for money is also perceived. Like in the previous sample, there may be a limit to the price industry can charge for an innovation, and this limit should relate to what is considered affordable, or "offering value" to consumers. Herein, Hypothesis 2avii is also supported in this sample.

As discussed above, despite its failure to fully meet criterions of statistical significance (*t* = 1.774), *Complexity's* negative influence on *Attitude* is retained in this model. Despite slight statistical non-significance, such a variable does exhibit a moderate influence, with a unit rise in *Complexity* (β = -.055, *p* > .05) resulting in a moderate decrease in *Attitude*, and one that is marginally larger in this sample than the "mildly innovative" sample (β = -.048, *p* > .05). Examining the confidence intervals (95% bias corrected bootstrap-adjusted) associated with such a factor loading, it is recognized that this variable exhibits a varied influence across the majority of respondents (*Complexity:* -.156, .038), however it would appear that an at least moderate negative impact is observed for the vast majority. As is discussed with the "mildly innovative" sample, despite its statistical non-significance, *Complexity* is conceptually very relevant to the context of adoption (as supported by various researchers, including Rogers, 2003; Arts, Frambach, and Bijmolt, 2011), and does appear to play a role in breaking the status quo and facilitating acceptance of highly innovative products. Thus, as such

a factor loading is still in the anticipated direction and suggestive of appropriate fit with that of the population (as exhibited through the moderate *SE* value of .031), it is considered pertinent and recommended to be retained for further scrutiny, and Hypothesis 2ai is tentatively supported. Conceptually, such a finding suggests the degree of difficulty associated with interacting with a highly innovative product does exert some, but not a large reduction on a consumer's attitude towards that innovation. This may be a result of high expectations of difficulty that are associated with new and unfamiliar products, and whilst *Complexity* is not the largest influencer of strong attitudinal assessments, it does nonetheless cause increasingly strong negative attitudes towards those products deemed highly innovative. Evidently, practitioners may desire to minimize such perceptions of difficulty, and as suggested by the strong correlation between *Complexity* and *PBC* ($r = -.455$), and the latter's influence on *Acceptance* (to be discussed), should seek to enhance perceptions of control and competency in interacting with such innovations to better aid acceptance. Failure to do such may otherwise risk consumers retreating to their status quo in avoiding the adoption of highly innovative products. Herein, reductions to perceived complexity may be facilitated through increased education on the specifics of how the product works / operates through promotions, amplified word of mouth, or product trial (virtual or otherwise).

In this "highly innovative" sample, *Relative Advantage* is not discovered to exert a substantial impact, and thus is not retained in the final structural solution. As a moderate influence is found in the "mildly innovative" sample, the absence of support in this sample may suggest that as a product is perceived as being highly innovative, the enhanced usefulness of the innovation compared to existing products is no longer as important. This may be due to the greater perception of novelty exceeding the value of its usefulness. Anecdotally, this is not to farfetched a suggestion, as consumer's can often be witnessed purchasing products that may not offer great utility, but are purely new or novel. Considering the widespread consumer understanding that earlier iterations of an innovation are never quite as useful as later versions and may face certain restrictions in their utility, but are often purchased in their droves, this notion again appears logical. Additionally, *Image* is again not found to be a salient contributor in this sample, confirming the findings in the previous sample that the social benefits gained through innovation acceptance do not enhance a consumer's attitudinal assessment of an innovation.

Examining the empirical influence of the highly important *Compatibility* construct ($\beta = .219$, $p < .001$, CI: .132, .306; SRW = .199), the fit a highly innovative product has with the needs, wants, and lifestyles of a consumers is proven to exert a moderately strong positive influence on *Attitude*. This

effect size indicates *Compatibility* is again not the most powerful influencer but is still vitally import, thus supporting the previously discussed findings. Empirical findings related to (95% bias-corrected bootstrap adjusted) confidence intervals (CI: .132, .306) indicate the construct has an influence on *Attitude* for 95% of respondents, with a quite strong effect evidenced for many of these. Similarly, its SRW (.199) is in further agreement. Herein, such results further endorse the contextual accuracy of the theoretical framework of this study, and it is concluded the experience of *Compatibility* is an essential player in innovation acceptance. Specifically speaking, enhanced perceptions of such will result in increasingly strong positive attitudes towards a highly innovative product, supporting the previously discovered revealing Research Finding 1. Conceptually, as those products considered "highly innovative" are likely to be perceived as even more novel, unfamiliar, or unique than those considered "highly innovative", it is not surprising its empirical influence is 28.1% larger in this sample than in the "highly innovative" sample. Further evidence of the construct's indirect influence in this sample (with its direct impact on *Acceptance* yet to be discussed), as well as its both direct and indirect influence supported in the previous sample indicate practitioners must ensure highly innovative products possess the requisite fit with a consumer. Failure to possess this characteristic and the attitude held towards a highly innovative product is not maximized. After all, why would a consumer purchase, or even further inquire about an innovation that isn't aligned with what the consumer needs or wants, or the lifestyle they live. Evidently, it is concluded a highly innovative product must fit with a consumer's needs, wants, and lifestyles if it is any chance of breaking consumers from their status quo through enhanced positivity in attitudes.

Having identified empirical influence on consumers' attitudes towards highly innovative products, the impact of *Attitude* on the most pertinent (ordinal) outcome of *Acceptance* of innovations is scrutinized. Through such analyses it is revealed the *Attitude* a consumer holds is directly important in facilitating acceptance ($\beta = .153$, $p < .072$, CI: -.087, .369; SRW = .119). Whilst this construct falls slightly short of statistical criterions of significance, its unique and somewhat complex mediating characteristics, string theoretical relevance, and overwhelming support for similar relationships in other studies, see Kulviwat et al., 2007; Nasco et al., 2008) ensure it is an integral component of the composition of this framework for highly innovative products[9].

Supporting such importance, *Attitude* exhibits a considerable effect size ($\beta = .153$), suggesting increasingly strong positive attitudes play an important role in increasing the likelihood of *Acceptance*. Examining the (95% bias corrected bootstrap adjusted) confidence intervals for *Attitude*'s influence

(-.087 .369), whilst it is revealed that a proportion of respondents do not exhibit a positive empirical influence, for most, the influence of *Attitude* on *Acceptance* is quite strong, thus its retention in the framework is further justified. Examining the odds estimated (as revealed in Table 80), it is suggested the odds of moving into the next category of *Acceptance* increase 16.5% for every one-unit rise in *Attitude*. Whilst this may not be substantial, in accordance with other influencers (such as *Compatibility* and *Personal Innovativeness*) *Attitude*'s influence is pertinent. Herein, in agreeing with Kline's (2013) compelling argument for placing brevity on effect sizes (of which *Attitude* exhibits a sizeable one), alongside its strong theoretical support Hypothesis 2b is supported. From a conceptual perspective, the small-moderate effect size of the construct indicates that as consumers possess an increasingly strong positive attitude towards a highly innovative product, their acceptance intentions improve. As discussed above, the empirical idiosyncrasies of this mediating variable are quite complex, thus it is unsurprising its influence is somewhat uncertain. Nonetheless though, it is proven in this study that as attitudinal assessments improve, the likelihood of consumers moving from *Resistance* to *Trial*, and *Trial* to *Purchase* also improve. This is of substantial significance for breaking the status quo, indicating to practitioners that they must ensure attitudes towards innovations are positive and strongly held if the status quo (of resistance) is to be challenged. As discussed in relation to the previous sample, such is likely to be particularly important once a highly innovative product is trialed, throughout customer contact points, and in advertising. Even more importantly though, the cognitive and affective characteristics of both the innovation and the individual should be enhanced so to improve attitudinal assessments and subsequently enable consumers to break from their status quo and progress the acceptance of highly innovative products.

Compatibility with usage:

Assessing *Compatibility*'s influence beyond the discovery of enhancing attitudinal assessments, its ability to enhance *Acceptance* of highly innovative products is noted (see Table 80), revealing a very strong empirical effect (β =.395, $p < .001$, CI: .221, .581; SRW = .486). Such an effect is comparable to its influence on *Acceptance* in the "highly innovative" sample (β =.377, $p < .001$), and again, its effect size (β =.395) reveals that rising levels of *Compatibility* have a very strong direct influence on respondents *Acceptance* intentions. Examining this relationship, such a regression weight equates to a 48.4% increase in the odds of moving to the next level of *Acceptance* for a one-unit rise in *Compatibility*. Such influence is profound, and suggests the construct is pivotal in the acceptance of highly innovative products, and one that cannot be ignored or omitted from innovation analysis.

313

Inspecting the confidence intervals associated with this relationship, (.221, .584), again *Compatibility* exerts a very strong empirical influence for 95% of respondents, with the upper region exhibiting an extremely large effect. Furthermore, as evidenced in the SRW of .486, *Compatibility* is endorsed as the largest influencer of *Acceptance* intentions for highly innovative products, again strongly supporting Hypothesis 3 in this sample. For "highly innovative" products, the influence of *Compatibility* on *Acceptance* intentions is 80.4% larger an effect than its influence on *Attitude*. This indicates (like in the previous sample) the perception of fit of an innovation to the needs, wants, and lifestyles of a consumer are primarily a facilitator of *Acceptance*, with its positive role in enhancing *Attitudes* a secondary effect. Furthermore, like the discussion of the previous sample, it is even more apparent in this sample that an absence of fit for innovations considered too novel or outlandish may result in their failure to precede beyond the introduction stage of diffusion. Evidently, whilst *Compatibility* is explored as a characteristic of innovation diffusion (see Rogers, 1995, 2003), this research is the first to specify its influence on three specific behavioural intention outcomes, thus further elucidating how essential these perceptions of fit are to breaking one from their status quo. Such results strongly support that for a consumer to intend to move their acceptance of a highly innovative product from *Resistance* to *Trial*, and *Trial* to *Purchase*, the innovation must fit with the needs, wants, and lifestyles of that consumer. Such fit is integral and should be an integral focus of practitioners.

Enablers (internal and external):

Examining consumers' perceptions of internal and external enablers of breaking from one's status quo, the impact of *Social Influences* (H: 4b) is discovered to be statistically non-significant for highly innovative products. This suggests again, that having the approval and expectations of important individuals does not make a consumer break from existing patterns of behaviour and accept a new innovation. However, unlike in the previous "mildly innovative" sample, the influence of *PBC* on *Acceptance* in this highly innovative context (see Table 80) is discovered to exert a somewhat salient influence (β =.090, p >.05 CI: -.112, .316, SRW = .055)[10]. Whilst not wholly conclusive, such a relationship is observed by a range of authors, including Lu, Zhou and Wang (2009), Venkatesh, Thong, and Xu (2012), and San Martin and Herrero (2012) who support the construct as a key determinant of adoption intentions, thus justifying the subsequent residency of *P.B.C.* in this theoretical framework.

Whilst this construct does not meet criterions of statistical significance, its moderate effect size suggests the construct plays a role in breaking from the status quo for highly innovative products. Products considered highly innovative are perceived as such as they are considered very new, unfamiliar, and different. Thus considering this, such a finding indicates increasing perceptions of both internal and external control related to a highly innovative product will enhance a consumer's intention to accept it. Examining the odds associated with this regression weight, it is revealed a one-unit rise in *PBC* will increase the likelihood of respondents moving from *Resistance* to *Trial*, and *Trial* to *Purchase* by 9.4%. Admittedly this is not substantial, but its effect size (in light of this good fitting theoretical framework) does suggest it plays a key role in breaking the status quo for highly innovative products. Thus, in light of the aforementioned findings, Hypothesis 4a is tentatively supported, with future research to explore its impact in the acceptance of highly innovative products.

Model comparison:

In addressing the assertion of Hypothesis 5 that drivers of breaking from one's status quo in acceptance of an innovation will be different across consumers' perceptions of mild and high innovativeness, comparison of the final *FACE Model of Consumer Innovation Acceptance* across the two levels of perceived innovativeness is examined. As indicated in Figures 27 and 28, whilst largely similar, these two models are not identical. In the mildly innovative sample, no support is found for internal and external enablers of change, however in the highly innovative sample, there is tentative support for *P.B.C.'s* role. Furthermore, *Relative Advantage* is not supported in the highly innovative sample as a salient antecedent to *Attitude,* whilst it is tentatively in the "mildly innovative" sample. Herein, despite the general similarity in the structural models across these two samples, Hypothesis 5 is tentatively supported and it gain be said that what is required to break a consumer from their status quo in accepting a new product is different across levels of perceived innovativeness.

Indirect effects:

The structural model examined in this sample positions *Attitude* as a key variable between various antecedents and the outcome of variable of *Acceptance.* Assessing this influence, Table 82 reveals the construct does not carry a statistically substantial influence of its antecedents through to *Acceptance* (mean indirect effect = .030 in magnitude), indicating the role of these variables (with exception made to *Compatibility*) is statistically limited to a direct predictor of *Attitude*. Despite the lack of

Table 82: Indirect effects (highly innovative, _n_ = 348)

	Complex.	P.V.F.M.	Pos. Affect	Neg. Affect	Credence
F.L.	-.008	.017	.053	-.034	.036
Odds	-1.008	1.017	1.054	-1.035	1.037

Note: Mediator: _Attitude,_ DV: _Acceptance_

support for indirect effects, these findings do not weaken the value of these constructs, but rather provide a clearer perspective of their role in the acceptance of highly innovative products. Herein, despite the generally small overall empirical influence of the variables, for _Positive Affect_ (β =.053) a relatively sizeable indirect influence is evidenced. Such indicates that _Positive Affect_ does indirectly influence the _Acceptance_ of a highly innovative product with a level of influence that could be considered meaningful. Through these results it is revealed positive affect, such as those emotions associated with _Joy_ and _Wonder,_ exert not only a significant influence on _Attitude_, but also an indirect effect on individual's intention to accept an innovation; such findings illuminate the considerable power affect possesses in changing patterns of behaviour, such as breaking the status quo. Examining these results, the theoretical framework supports such an influence in this "highly innovative" sample, indicating that one's attitudinal assessment does intervene between affect and perceptions of the innovation and respondents' acceptance intentions. Such a discovery suggests consumer's consciously form an attitudinal assessment before making their decision to adopt a highly innovative product or not, and that many of _Attitude's_ antecedent variables do not directly influence this decision, but manipulate it through the strength and positivity of this attitudinal assessment. As discussed in the previous sample, this is not the first study to support this influence of _Attitude_, but these findings do suggest that practitioners must pay considerable attention to the elicitation of affect (focusing on maximizing positive affect), so that attitudinal assessments of highly innovative products are strongly positive, and the chances of breaking the status quo are further improved.

Acceptance thresholds:

Examining the thresholds of _Acceptance_ in the "highly innovative" sample (see Table 83), results reveal any respondent who scores less than -.866 on the underlying latent _Acceptance_ variable intends to resist the highly innovative product they are exposed to. In this sample, this is the case for just 59 respondents (16.95%). As opposed to 124 (35.13%) in the "mildly innovative" sample who intend to resist the innovation, this is a small amount, and considering the four innovations respondents are exposed to form this sample (reminding that each respondent is only exposed to one innovation) are

Table 83: *Acceptance* **threshold scores (highly innovative,** *n* **= 348)**

Resistance (n = 59)	*Trial* (*n* = 230)	Purchase (n = 59)
-.866 <	-.866 – 2.083	2.083+

Note: Intercept = .217

the same as in the previous sample, this is profound. Simply, this suggests that a higher perception of a product's innovativeness does result in respondents entertaining breaking from their status quo. This may be a result of the intrigue and interest associated with those products perceived to possess a high level of novelty or sharp difference of characteristics, or that respondents who perceive these products to be "highly innovative" are more engaged with it relative to those who perceive it as "mildly innovative", and thus are less likely to resist. More ubiquitous amongst this sample and by far the most common *Acceptance* intention for highly innovative products is to intend to *Trial* the innovation (*n* = 230, 66.10%). This is again a larger figure than in the previous sample (*n* = 205, 58.07%), supporting that acceptance intentions of "highly innovative" products are more favourable than those considered "highly innovative". Herein, this model indicates underlying *Acceptance* scores existing within the range of -.866 to 2.083 will result in respondents preferring the opportunity to further interact with, or research the highly innovative product before deciding to purchase or not. This is a large range, backing up the high likelihood of consumers intending to trial. Such could be a result of the aforementioned increased engagement or interest of respondents resulting in those who perceive the products to be highly innovative expressing a desire to research or further interact with the innovation. Finally, the results of this sample suggest a score greater than 2.083 for the underlying *Acceptance* variable will result in a respondent intending to purchase highly innovative products, with *Purchase* intended by 59 respondents (16.95%). This is substantially larger than the "highly innovative" sample where 24 respondents (6.80%) intended to purchase, indicating that when a product is perceived as highly innovative (as opposed to mildly innovative), respondents are more inclined to break from their status quo. This is an integral finding of this research. Intriguingly, the number of respondents intending to resist is identical to the number of respondents intending to purchase in this sample. This was not the case in the previous sample where 417% more respondents intend to resist the innovation than purchase. Thus, the results observed conclusively indicate that higher perceptions of innovativeness are associated with more favourable *Acceptance* intentions. This may suggests to practitioners that promoting the newness and difference of characteristics to existing products is an effective technique for facilitating diffusion of a product innovation. Such findings endorse the importance of product trial, additional exposures or communication about the innovation, and comfortable experiences in all customer contact points for new and unfamiliar products. Such further

reveals to practitioners that for highly innovative products, few consumers are prepared to outright purchase an innovation after initial exposure, and that the "trial" stage of acceptance is pivotal.

Examining the intercept figure for this structural model (.217), it is revealed when respondents indicate scores for the antecedent variables at the average level of the sample, the behavioural intention for the underlying *Acceptance* construct is trial. This revelation is salient, as it suggests that the average consumer who is exposed to these products and perceives them to be highly innovate, does not want to resist them, and intends to at least conduct further research or interaction before deciding to behavior or not (as represented by *Trial*). This is also the case for the "mildly innovative" sample, but is a more favourable perception on the underlying latent *Acceptance* construct in this "highly innovative" sample. Such a finding suggests that for products perceived highly innovative, only an average level of compatibility, innovativeness, experience of control, and attitude are required to elicit an intention to trial. However, to move respondents' intent from *Trial* to *Purchase* (or even *Resistance* to *Trial*), large increases in these variables may be required. As evidenced by its very large direct influence on *Acceptance* ($\beta = .395$, $p < .001$), enhanced perceptions of a highly innovative product's fit with an individual's needs, wants, and lifestyles appear to be the most effective means to do so.

In consideration of the observed *Acceptance* intentions of respondents, such findings are particularly pertinent in understanding status quo in innovative behavior. As this study is likely to be respondents first exposure to the products they are exposed to (and they have definitely not used or purchased the innovation before), it is encouraging so many indicate an intention to trial or purchase these innovations (66.1% and 17.0% respectively). As the innovation examined is yet to be used or purchased by the respondent, and the fact that most may have not been exposed to it at all, one could assume the default status quo would be characterized by resistance; particularly considering the products are deemed highly innovative. However, as such is indicated by few in this "highly innovative" sample, the overwhelmingly more likely intent of *Trial* is particularly incisive. The findings associated with this theoretical model reveal that either respondent's status quo when exposed to a highly innovative product is to trial, or as these products are considered highly innovative, respondents are prepared to break from the status quo of resistance and trial them. Such cannot be discerned through a single study alone though, and is in need of further research to substantiate. Complementing the findings of the "mildly innovative" sample, the aforementioned discoveries of innovation acceptance behavior offer substantial methodological and conceptual contributions,

particularly in light of an enhanced assessment of *Acceptance*, a metric far superior to the limited and naive measure of "purchase" or "adoption".

Hypotheses summary:

In light of the aforementioned discussion of the empirical results observed for the final theoretical model, in this highly innovative sample, confirmation exists for the following hypotheses:

Table 84: Summary of hypothesized empirical relationships (highly innovative, *n* = 348)

Hypothesis	Exogenous	Endogenous	Empirical Outcome
H1a	Knowledge	Acceptance	REJECTED
H1b	Innovativeness	Acceptance	SUPPORTED
H2ai	Complexity	Attitude	TENT. SUPPORT.[*]
H2aii	Negative Affect	Attitude	SUPPORTED
H2aiii	Positive Affect	Attitude	SUPPORTED
H2aiv	Credence	Attitude	SUPPORTED
H2av	Relative Advantage	Attitude	REJECTED
H2avi	Image	Attitude	REJECTED
H2avii	P.V.F.M.	Attitude	SUPPORTED
H2b	Attitude	Acceptance	SUPPORTED
H3	Compatibility	Acceptance	SUPPORTED
H4a	P.B.C.	Acceptance	TENT. SUPPORT.[*]
H4b	Social Influences	Acceptance	REJECTED
RF1	Compatibility	Attitude	SUPPORTED
H5	Mildly Innovative Acceptance = Highly Innovative Acceptance		TENTATIVELY SUPPORTED

[*] Indicates these variables do not exert a statistically significant influence in this sample, but are theoretically and conceptually relevant, and widely supported with the research context and thus deserving of future attention

Interim conclusion:

Having examined the *FACE Model of Consumer Innovation Acceptance* in the context of a highly innovative product, several key relationships are observed. Firstly, it is concluded the perception of a highly innovative product's *Complexity*, its *Perceived Value For Money*, and its *Compatibility*, alongside the *Positive Affect* and *Negative Affect* experienced by the individual and the *Credence* associated with it, all influence the *Attitude* a respondent holds towards a product considered highly innovative. This *Attitude*, as well as the *Compatibility* of the innovation, the *Innovativeness* of the respondent, and their assessment of *Perceived Behavioural Control* influences *Acceptance* of highly innovative products. Furthermore, it is revealed that the drivers of status quo destruction do not act identically in this sample as they did in the "Mildly innovative" sample. In light of these discoveries,

319

familiarity with the product domain, attitudinal assessments, compatibility with usage, and internal and external enablers are discovered to be salient in breaking a consumer from their current product domain status quo. In this "highly innovative" context, a consumer's affect (both positive and negative) and the fit of the innovation with an individual's lifestyle again prove themselves to be highly salient amongst other key predictors. In summary, this theoretical model reveals to practitioners what is required to break a consumer from their status quo and facilitate acceptance of a product perceived highly innovative.

- *Footnotes:*

9. The constructs inability to meet traditional criterions despite strong factor loadings lies in its high SE (.085). A likely explanation for this is the methodological capture and aggregate nature of the construct (both the attitudinal valence and the strength with which the attitude is held), as well as its complex relationship with multiple bi-valenced antecedents. This has resulted in a sample-estimated value that does not always align with the model-implied estimate, but may be a statistical artifact of this sample, thus future research should examine its role in acceptance.

10. As the measurement model of the construct is re-specified through dropping one of the four items, perhaps this item is responsible for the sizeable SE and thus statistical "non-significance".

Control sample: conventional

Innovations are those products considered new, novel, and in sharp difference of characteristics to existing options. Hence, any theoretical framework that attempts to explain what makes a consumer break from their status quo in accepting an innovation does need to prove that the model does not in fact explain acceptance of a non-innovative conventional product. Herein, in following a correct a scientific approach, the aforementioned samples of mildly and highly innovative perceptions are treated as "treatment" conditions, with the "conventional sample" in which respondents did not believe the products to exhibit any great deal of innovation, and thus would not be breaking from their status quo are utilized as a "control" of which to compare against. Such ensures the phenomenon under investigation does actually exist, and that the *FACE Model of Consumer Innovation Acceptance* is in fact a model of status quo deviation through innovation acceptance, not merely general product acceptance in accordance with the status quo. Analysis of the theoretical model in this sample is examined in the same manner to the previous two samples.

CFA analyses:

Despite its status as a control sample, it is still essential the measures utilized are empirically sound, thus in this research they are examined to ensure they are empirically competent for subsequent structural analyses. Should any empirical shortcomings be identified, measurement models are re-specified to the point of empirical and conceptual acceptability, or not utilized in the study if such is not achievable. Prior to examining such in the "conventional" sample, respondents' perceptions of innovativeness, and the nature of the task undertaken with the product are further examined.

Innovativeness:

As this sample is to be employed as both an assessment of non-innovative products and the control with which comparison can be drawn, it is essential respondents comprising this sample do perceive the products to be low in innovativeness. As discussed in the "methodology" chapter, having been exposed to a product stimulus, respondents are detailed a definition of innovativeness as follows:

"Innovativeness' is a measure of the degree of 'newness' of a product or service. Innovation is the creation of better or more effective products, processes, technologies or ideas that possess a sharp difference of characteristics to those prior"

Each respondent is then asked to indicate how innovative they perceive the product they were exposed to be, on a scale of 0 (*Not innovative at all*) to 10 (*Very innovative*). The following table (Table 85) describes the perceived innovativeness level of the "conventional" sample:

Table 85: *Perceived innovativeness* (conventional, *n* = 242)

	Totals		Stimuli Means[*]	
Mean	Median	SD	s1	s2
2.060	2	1.010	2.15	2.54

* s1 = *Stapler*, s2 = *Nintendo*

The mean score for the perceptions of innovativeness in this sample is 2.060. Such is not surprising considering the well-established and likely familiar nature of the two products the sample may have been exposed to. It is important to note that such is the raw score though, and considering the potential "0" option indicating the product is not innovative at all, this score does suggest some degree of innovativeness (a score of 2 is the third lowest innovativeness score). Such is likely to be a result of respondents recognizing and indicating some degree of innovativeness in all products, even common household ones such as a stapler. Interestingly, 24 (9.9%) respondents perceived these products to be not innovative at all, with 107 (44.2%) scoring it a 3. Assessing the average of the squared difference from the mean, the SD figure of 1.010 indicates a relatively small spread of scores (as would be expected due to the nature of extracting the samples through cut-off innovativeness scores), with an average variance from the mean score of 1.02, suggesting the majority of respondents scored the products between 1 and 3. Assessing means across the two products, they are relatively similar, with the Nintendo gaming console considered to be slightly more innovative (a mean of 2.54 compared to 2.15).

Utilitarian vs. hedonic:

So to minimize bias of product types in consumers' perceptions, the nature of the task of which the respondents perceive the subject product to be suited to is also salient to this study. Moon and Kim (2001) note the "work vs. play" task type (i.e. utilitarian vs. hedonic) makes a difference in behavioural intentions in the consumer context, with Nasco et al.'s (2008) extension of the CAT model successfully

exploring the nature of the task as a moderator of consumer perceptions towards adoption. So to ensure both types are equally examined, approximately half of this sample are exposed to a primarily utilitarian product (stapler), with the other half exposed to a primarily hedonic product (Nintendo). After expressing their perceptions of innovativeness, respondents are asked to assess the extent to which they perceive the product to be utilitarian or hedonic. Firstly, respondents are exposed to the flowing definitions of each task type:

"A UTILITARIAN product is one that:
- Focuses on problem solving and accomplishing tasks
- Is reason-based and goal oriented"

"A HEDONIC product is one that:
- Allows you to experience personal gratification or enjoyment
- Is emotionally satisfying"

The extent to which respondents perceive the subject product to be each of these task types is then assessed. Such is measured through asking respondents, "Use of this product would serve a UTILITARIAN purpose", followed by "Use of this product would serve a HEDONIC purpose", as measured through a 7-point Likert scale (1 - Strongly Disagree, 7 - Strongly Agree). Finally, and to conclusively indicate which type they perceive it to be, respondents are asked to indicate whether they consider the product to be utilitarian or hedonic; again assessed through a 7-point semantic differential scale (anchored 1 - Utilitarian, 7 - Hedonic). The results of such are exhibited in Table 86.

Table 86: *Utilitarian* vs. *hedonic* product stimulus (conventional, *n* = 242)

Task type	s1 mean (*n* =131)	s2 mean (*n*=111)
Utilitarian	5.380	3.010
Hedonic	2.020	5.030
U vs. H	1.570	6.000

* s1 = *Stapler*, s2 = *Nintendo*

As is observed in Table 86, both the products examined are correctly identified as either primarily utilitarian or primarily hedonic, with the mean utilitarian score for the stapler 5.380 (indicating relatively strong agreement with its utilitarian nature), as opposed to 2.020 for its hedonic nature (indicating strong disagreement). Such is reinforced through the 1.570 score on the utilitarian vs. hedonic dichotomy question with the score firmly placing the stapler in the Utilitarian category.

Similar figures are exhibited for the Nintendo, which is strongly placed in the hedonic category. Results of a *t*-test in comparing the mean *utilitarian vs. hedonic* dichotomy score across the two products examined (*Utilitarian vs. Hedonic t*-test indicates significant difference in means (equal variances assumed, Levene's test $p > .05$), $t(240) = -36.511$, $p < .05$; very large effect size $= .921$) is in support that the primary tasks of the two products are statistically significantly different . Importantly, the number of respondents exposed to each product in the sample is relatively similar, with 131 respondents comprising the sample exposed to the stapler, and 111 the Nintendo. Such ensures any bias of one particular product type on the evaluation of constructs is unlikely, with further support for this notion offered in respondents perceptions that both the products have a degree of utilitarianism and hedonism to them, neither product is perceived as solely one such type.

Empirical constructs:

Having supported that the perceptions of each of the products in the sample satisfy the condition of low innovativeness (a conventional nature), as well as a primary product type (utilitarian or hedonic), the empirical scales forming the hypothesized and alternative conceptual models are now examined for this "conventional" sample. Model re-specification is an essential procedure, and is undertaken so a satisfactory measurement model is revealed and can be implemented in further structural analysis. Such specification occurs on the suitability of model parameters, with localized areas of strain identified through modification indices > 3.84, and standardized residual covariances > 1.96. In the event of identified areas of localized strain (of conceptual and theoretical logic), measurement models are re-specified by dropping items, or freely estimating residual covariances until a theoretically sound and proper fitting solution is achieved. Acceptable model fit is determined when the solution meets the following the following standards:

- *Absolute Fit Indices:* GFI ($> .95$), AGFI ($> .95$), SRMR ($< .08$)
- Incremental Fit Indices: TLI ($> .95$), CFI ($> .95$)
- *Parsimony Fit Indices:* RMSEA ($< .07$, LO90 $< .05$, HI90 $< .10$, PCLOSE $> .05$)

The final measurement models subsequently discussed all satisfy the various criteria of model fit and model re-specification. However, as a point of notice, the figures exhibited for those latent factors marked with an "$" figure in their CFA estimates table are bootstrap adjusted figures (1000 rotations), as the item distributions exhibited non-normality beyond the acceptable range (skew c.r. > 2, kurtosis

c.r. > 7; Gao, Mokhtarian and Johnston, 2008; Curran et al. 1996). Due to its non-parametric re-sampling methodology, bootstrapping is a suitable remedy for non-normally distributed data, as recommended by Kline (2011).

Complexity:

Respondents' perceptions of complexity evaluate the degree to which an innovation is perceived as being difficult to use or understand (Rogers, 1983; Arts, Frambach and Bijmolt, 2011). The initial four-item scale is examined for its psychometric properties. In doing such the adequacy of the solution is not quite acceptable, hence the fourth item "Switching to this product from another would create difficulties for me", is removed from the solution (see Figure 29). Such is a logical outcome as the familiar nature of the stapler and the Nintendo, are not likely to elicit perceptions of such difficulty for respondents in switching to the product. Specifically speaking this item evaluates the shift from an initial product to the subject product, hence is a slightly different conceptualization of complexity to the other three items that are related to perceptions of the product in isolation. This item may have not been adequately represented by the latent construct as a result of this conceptual distinction, and is subsequently dropped from further examination in this sample.

Figure 29: *Complexity* measurement model (conventional, *n* = 242)
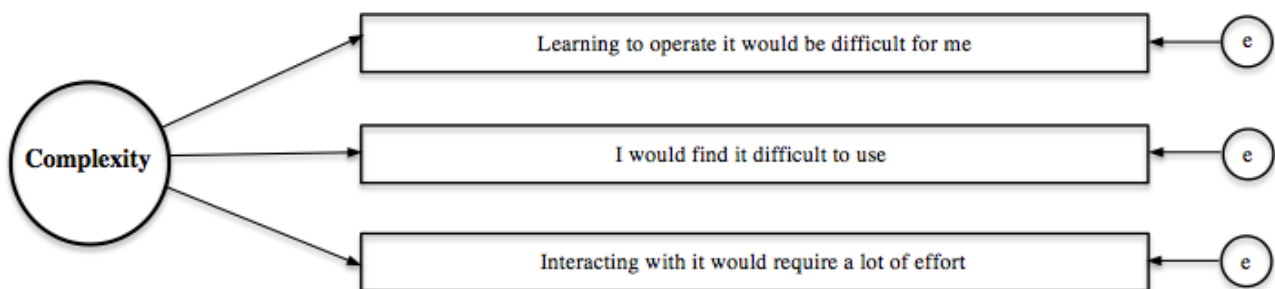
As is revealed in Table 87, the means of all the items are relatively similar, and all quite low. It is reminded that the construct is measured through a "Strongly Agree – Strongly Disagree" Likert scale, hence mean scores ranging from 1.459 – 1.756 suggest this sample did not evaluate the products to be very complex at all, in fact disagreeing that they are complex; an unsurprising finding in light of their conventional nature. Furthermore, the SD of the items suggest that there is not a strong variation of scores, with most scores ranging from approximately 0.5 – 2.5 for items 1 and 2, and 0.5 – 3 for item

3. Considering the nature of the products and their familiarity, it is not surprising a lot of really low perceptions of complexity are implied.

Table 87: *Complexity* item descriptives (conventional, *n* = 242)

Indicator	Latent Factor	Mean	SD
Complexity_1		1.459	1.019
Complexity_2	COMPLEXITY	1.463	1.019
Complexity_3		1.756	1.276

Examining the CFA estimates for *Complexity* (see Table 88), each of the items loads statistically significantly on the construct, as indicated through the strong factor loadings (1.011 – 1.047) and high critical ratios (14.094 – 17.506). Furthermore, the standardized regression weights are also very strong, particularly for items 1 and 2. Such figures suggest a one standard deviation unit from the mean rise in the latent construct will cause a standard deviation rise in the items from .752 - .909. Such figures are very adequate, indicating a large amount of variance in each item is explained by the latent *Complexity* factor, as endorsed through the very adequate individual SMC figures (.566 - .827). Regarding construct validity, the average variance extracted figure (AVE) of .734 suggests high convergent validity in exceeding Hair et al. (2009), and Danelon and Salay's (2012) advised criterion of .500. Regarding the true score variance relative to its observed variance, as examined through composite reliability, the observed figure of .891 is indicative of very high internal consistency (reliability), satisfying the often advised criterion of .700 (Fornell and Larcker, 1981; Hair et al., 1998). As such is estimated through SEM factoring out error in estimation, it is preferred to traditional Cronbachs' alpha assessment. Finally, the average inter-item correlation (AIIC) figure (.726) is reasonable, if a little too high; indicating that whilst the construct is internally consistent, its conceptual breadth is rather narrow (a blessing for establishing strong reliability). It must be noted that this and all subsequent item correlation estimates of this CFA analysis are model implied, not sample implied, as such are more accurate for over-identified solutions (like those examined in this research). Overall, these estimates reveal a psychometrically strong *Complexity* measurement model.

Table 88: *Complexity* CFA estimates (conventional, *n* = 242)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Complex._1		1.000	-	-	-	.900	.810			
Complex._2	COMPLEX.	1.011	.058	17.506	***	.909	.827	.734	.891	.726
Complex._3		1.047	.074	14.094	***	.752	.566			

*** $p < .001$

Usefulness:

As consumers often require a product to serve a purpose or function, perceptions of usefulness represent the degree to which an individual perceives the product to enhance their productivity (Davis et al., 1989). It is important to note that such a perception is specific to the product, but not relative to alternative products on the market, and is incorporated in the "conventional" sample estimation as a result of its empirical ubiquity, particularly through models such as the TAM, UTAUT and CAT. As revealed in Figure 30, all four items of the measurement model are retained in this solution.

Figure 30: *Usefulness* **measurement model (conventional, *n* = 242)**
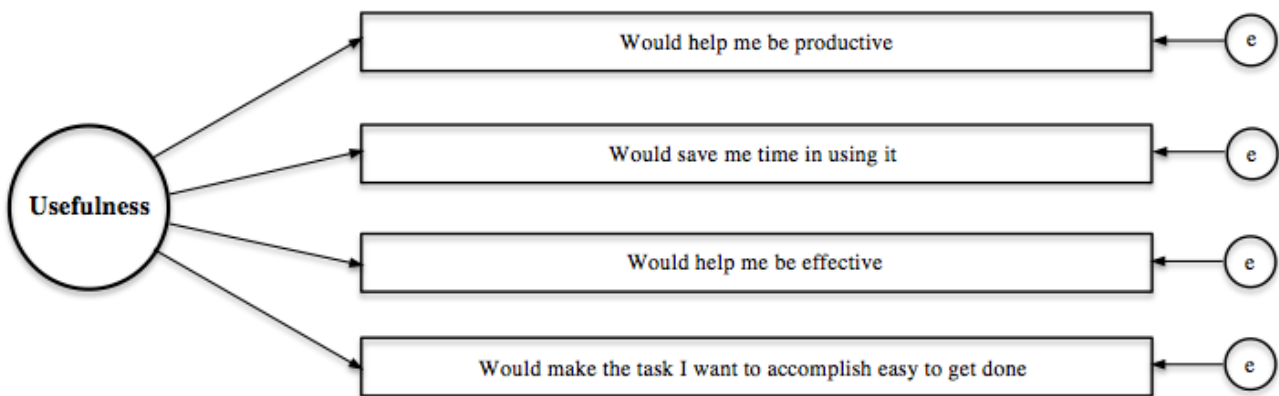
Examining item descriptives in this sample (see Table 89), the total item means for *Usefulness* are all quite comparable, ranging from (3.083 – 3.934). However, item 4 is somewhat larger than those other items, and considering any score less than 4 is indicative of disagreement, such an item is the only one respondents do not disagree with. As usefulness is inherently linked with utility and functionality, this construct is compared within the sample across the two products examined. Between the two products, substantial discrepancy is observed with the level of agreement with the usefulness of the stapler substantially higher (mean = 4.663) than that of the Nintendo (1.868). Such results suggest the Nintendo is not perceived as a useful product, a likely result of its entertainment and hedonic based purpose, whilst the stapler is perceived as mildly useful. Regarding the total item *SD*s, the 4 items each represent a relatively wide variance in scores, which is clearly a result of the variance in item scores across the two products.

Table 89: *Usefulness* **item descriptives (conventional,** *n* = 242)

Indicator	Latent Factor	Mean	SD	Stapler (mean)	Nintendo (mean)
Usefulness_1		3.083	1.889	4.39	1.54
Usefulness_2	USEFULNESS	3.124	1.881	4.29	1.75
Usefulness_3		3.380	1.953	4.72	1.80
Usefulness_4		3.934	2.112	5.25	2.38

Examining the CFA estimates of *Usefulness* (with residual covariances of items 1 and 2 covaried) in this "conventional" sample (see Table 90), the factor loadings and critical ratios indicate each item loads statistically significantly on the construct. Similarly, the standardized regression weights are also very strong, with an average impact of .873. Each of the items has relatively comparable factor loadings, with item 3 loading particularly strongly (.982). Despite some variation in scores, the variance explained within each item is also very high with a mean of .787 indicating a strong empirical connection between the construct and its items; supporting convergent validity. The reliability of the construct is extremely high, with a composite reliability figure of .936 indicating very high true score variance relative to what is observed, whilst the AIIC figure again indicates narrow, tight conceptual breadth. Evidently, *Usefulness* is empirically sound and suitable for application in further structural analysis.

Table 90: *Usefulness* **CFA estimates (conventional,** *n* = 242)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Useful._1[rc]		1.000	-	-	-	.876	.767			
Useful._2[rc]	USEFUL.	.923	.047	19.685	***	.812	.660	.787	.936	.774
Useful._3		1.159	.051	22.607	***	.982	.965			
Useful._4		1.050	.061	17.247	***	.822	.676			

*** $p < .001$
rc   item residuals covaried

Social influences:

Social influences refer to the perceived pressures from social networks to make or not make a particular decision (Lu, Yao and Yu, 2005), and have been identified as a salient player in innovation acceptance (Schepers and Wetzels, 2007; Ajzen, 1991), as well as its vital antecedent role in both the TRA and TPB. Representing the persuasive influence that others have over one's behaviour, the re-specified measurement model in this sample includes 3 items (see Figure 35) exploring the extent to which the expectations of important individuals behave as a normative force of coercion or persuasion. The fourth item "Using this product would make a good impression on those important to me", is omitted

form this scale. This may be a result of its requirement to consider the perceptions of others once the product is used, where the other items are evaluations of others perceptions prior to initial use.

Figure 31: *Social influences* **measurement model (conventional,** *n* **= 242)**
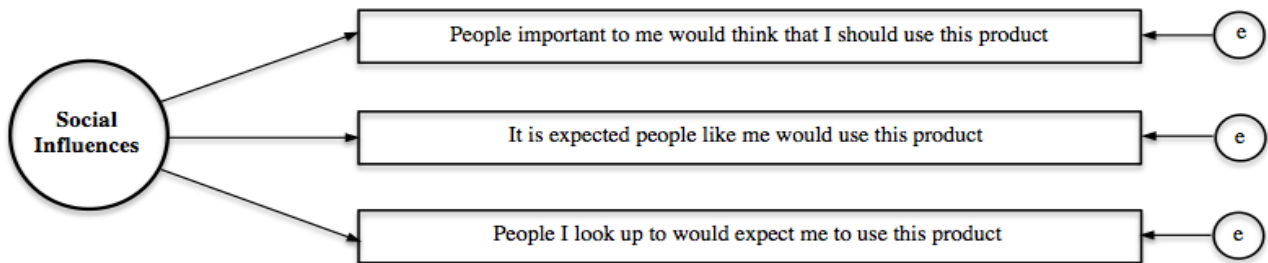
Regarding the means for the three *Social Influences* items (see Table 91), the consensus from the "conventional" respondents is that they do not experience such influences for these products, as indicated through the item means ranging from 2.000 – 2.798 (mean = 2.317). Such scores are very much on the "Disagree" side, with relatively large SD indicating a rather wide spread of scores. Such is likely a result of the difference in personality existent in respondents where some may be more susceptible to the normative or informational influence of others.

Table 91: *Social influences* **item descriptives (conventional,** *n* **= 242)**

Indicator	Latent Factor	Mean	SD
Social_Infl_1		2.153	1.459
Social_Infl_2	SOCIAL INFL.	2.798	1.857
Social_Infl_3		2.000	1.360

Examining the CFA estimates of the *Social Influences* construct (see Table 92), the latent factor also loads very strongly on each of the three indicators, ranging from (.794 – 1.133). It must be noted, such estimates are bootstrap adjusted in light of the non-normal distribution of the items. Despite a relatively large standard error (indicating the sample mean is relative different from the true population mean), each of these items is highly statistically significant. Regarding standardized factor loadings, the mean score of .815 again indicates a strong empirical influence of the latent construct on its items, whilst the individual SMC figures suggest adequate variance explained in each item by *Social Influences*. Such variance culminates in an AVE figure of .663, which is again quite acceptable, whilst the composite reliability figure of .855 is too, very strong, and AIIC indicative of quite wide conceptual breadth.

Table 92: *Social influences* CFA estimates (conventional, *n* = 242)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Social_Infl_1		1.000	-	-	-	.893	.798			
Social_Infl_2	SOC. INFL.$	1.133	.103	11.000	***	.794	.630	.663	.855	.659
Social_Infl_3		.794	.078	10.179	***	.759	.576			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

Perceived behavioural control:

A key component of the TPB, *Perceived Behavioural Control* (P.B.C.) is representative of an individual's assessment of their perceived capabilities in executing a behaviour. Such a construct is an assessment of both the internal and external capabilities, and the original four-item solution is respecified to three items (see Figure 32) by dropping the "I could get help form others when using this product" fourth item. Such may have been omitted, as it requires an assessment of interpersonal contact not deemed relevant to executing a course of behaviour with such conventional products.

Figure 32: *Perceived behavioural control* measurement model (conventional, *n* = 242)
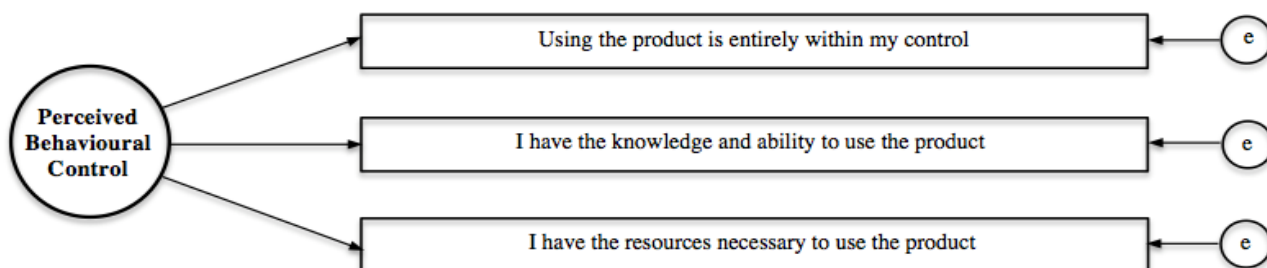
Whilst it is acknowledged that the fourth item comprising the construct is again omitted for this construct, it must be noted such is not a likely consequence of respondent fatigue or common method variance. In the data collection process, the order respondents are exposed to items within the construct is randomized (as is the order in which most of the antecedent constructs appear), thus such is purely a coincidence.

In evaluating the means of the construct, it is clear that respondents feel very comfortable in using these two products, with a mean item score of 5.77. Herein, for each of these items, respondents are on average agreeing with the existence of *P.B.C.* with relatively strong conviction. The level of agreement is quite consistent across each of the items (mean range = 5.58 - 6.04), with moderate SDs

observed (mean = 1.525). Considering the agreement is quite high for the *P.B.C.* items, it is likely that SD figures will be at least moderate in size, as it is highly unlikely that only a negligible amount of respondents will not agree with the *P.B.C.* statements. Additionally, considering the conventional and likely familiar nature of the products, it is also likely that many people will strongly agree with the *P.B.C.* statements, hence the relative wide variance around the mean observed in Table 93.

Table 93: *Perceived behavioural control* **item descriptives (conventional, *n* = 242)**

Indicator	Latent Factor	Mean	SD
PBC_1	PERCEIVED	6.01	1.417
PBC_2	BEHAVIOURAL	6.04	1.509
PBC_3	CONTROL	5.58	1.649

Like the previous measurement models, the CFA estimates for *P.B.C.* are also encouraging. As revealed through the regression weights (see Table 94), each is large in size, ranging from 1.121 – 1250, and despite the moderate standard errors, the critical values of statistical significance are each very strong. Regarding the standardized factor loadings of *P.B.C.* on its items, each are moderate in size but still very acceptable, with item 2 strong, whilst items 1 and 3 a little moderate. Such suggests, for these items that a one SD rise in the latent construct is not having as large an influence on increasing the item scores. Nonetheless, each is associated with an acceptable amount of variance in each item explained by the *P.B.C.* latent construct; although items 1 and 3 only just exceed the .500 criterion recommended by Chin and Todd (1995). Averaging the three SMC figures, a very acceptable AVE

Table 94: *Perceived behavioural control* **CFA estimates (conventional, *n* = 242)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
PBC_1		1.000	-	-	-	.764	.533			
PBC_2	P.B.C.$	1.250	.187	6.684	***	.887	.791	.637	.850	.628
PBC_3		1.121	.155	7.232	***	.728	.588			

*** *p* < .001

$ Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

figure of .637 is obtained, and yet again the reliability of the construct is very strong as indicated by the composite reliability figure of .850. Examining the AIIC figures, a conceptually broader construct is observed compared to the other constructs examined, with a figure of .628. This three-item measurement model is also considered adequate for further empirical analysis.

Perceived value for money:

As value is identified as a pivotal constituent in adoption decisions (i.e. Gao, Leicheter and Wei, 2012), *Perceived Value For Money* (P.V.F.M.) is examined, reflecting the utility derived from a product through the reduction of its perceived short and long-term costs (Sweeney and Soutar, 2001). Of the four items examined, each of these items is retained in the final measurement model in assessing the financial costs associated with the products examined. Employing such a construct in an innovation acceptance study is a conceptual contribution of this research, as existing technology acceptance and innovation studies neglect to adequately assess the financial value of subject products. Such is arguably an integral component of innovation acceptance and is intended to have a substantial impact of subsequent structural analyses.

Figure 33: *Perceived value for money* **measurement model (conventional,** *n* **= 242)**
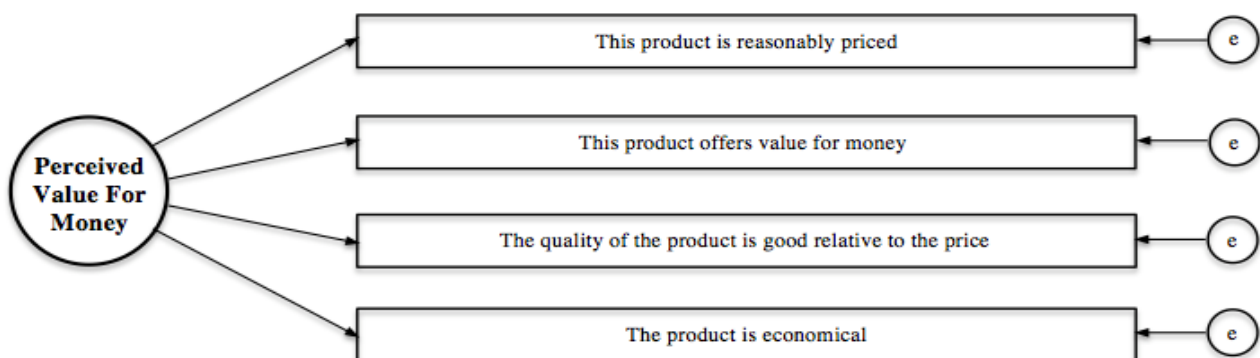
In assessing the means of the *P.V.F.M.* scale items, the four items are relatively comparable and all positive in agreement, with a mean score of 4.981 and a range of 4.760 – 5.231. Examining the SD of these scores, such figures are quite high (see Table 95). This is likely a result of the particularly subjective interpretation of what offers "value for money". As these products are quite conventional and far from new introductions to the marketplace, their reduced prices as a result of wide diffusion appears to of convinced respondents they offer some value for money (as the consensus is agreement with this statement), however such is not particularly strong, and as indicated by the moderate *SD* figures, appears divergent. In assessing the *P.V.F.M.* perceptions of each product, the means are statistically different, as evidence by t-test comparison (*P.V.F.M. t*-test indicates significant difference in means (equal variances not assumed, Levene's test *p* < .05), *t*(206.341) = 3.685, *p* < .05; medium effect size = .248). Such means (stapler = 5.273, Nintendo = 4.635) evidence both products are considered to offer some value for money by this "convenience" sample. However, it is likely the Nintendo is not perceived to offer great value for money, as it is an outdated and extensively

332

superseded product, thus its $55.95 price tag is deemed only moderately reasonable. Similarly, a stapler is a common product with a low price tag ($5.95 in this study), hence value perceptions are again positive but due to the minimal amount of benefits the product can bring (minor efficiencies and convenience), it is unlikely its cost will be perceived as dramatically affordable.

Table 95: *Perceived value for money* **item descriptives (conventional,** *n* **= 242)**

Indicator	Latent Factor	Mean	SD	Stapler (mean)	Nintendo (mean)
PVFM_1		5.231	1.566	5.47	4.95
PVFM_2	P.V.F.M.	4.917	1.546	5.24	4.54
PVFM_3		5.017	1.455	5.27	4.71
PVFM_4		4.760	1.503	5.11	4.34

Through examination of the *P.V.F.M.* construct's factor loadings (through bootstrap adjusted estimates), it is clear the each item loads strongly on the latent construct (see Table 96). Like the previously examined constructs, these items all experience a substantial rise through a rise in the underlying *P.V.F.M.* construct (mean = .892). Encouragingly, the *SE* figures are small in magnitude, suggesting the sample regression estimates are very close to the model-implied (population) estimates; accordingly the statistical significance of each item is very high. The standardized regression estimates are also encouraging, with each easily exceeding the generally acceptable range of .700, whilst contributing to a mean value of .854. Unsurprisingly the SMC figures are also very acceptable (with the exception of item 4, of which the variance explained in the item by the factor is adequate, yet moderate), culminating in a solid AVE figure of .734 that offers strong support for convergent validity. These figures suggest the latent *P.V.F.M.* factor is a very strong representation of its associated items, with its strong internal consistency supported through its very high CR figure of .917. Finally, the high AIIC figure (.728) suggests the construct is quite narrow in its conceptualization. Herein, future applications could look to minimize the number of items employed, or seek to modify items to cover a broader range of conceptual ground. Nonetheless, such estimates provide vary strong support for the validity of the *P.V.F.M.* construct.

Table 96: *Perceived value for money* **CFA estimates (conventional,** *n* **= 242)**

Indicator	Latent Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
PVFM_1		1.000	-	-	-	.902	.814			
PVFM_2	P.V.F.M.$	1.009	.040	25.225	***	.920	.847	.734	.917	.728
PVFM_3		.862	.056	15.393	***	.836	.699			
PVFM_4		.806	.059	13.661	***	.758	.574			

*** *p < .001*

$ Estimates mildly non-normally distributed (*skew c.r. > 2, kurtosis c.r. > 7*), thus figures are bootstrap estimates (1000 rotations)

Affect:

This phase of the research employs the *C.I.A.* scale developed through the scale development process of this study. The previously developed scale examines the affect consumers' experience when exposed to an innovative product, thus as the subject products of this sample are not perceived as innovative the scale is not intended to be use in its entirety, rather extensive re-specification is undertaken to refine a measurement model that suits the context of this control group of the study. Such specification is undertaken through the aforementioned criteria of statistical significance, model fit, localized areas of strain and validity, and due to the continuum nature of the emotion scale items (as revealed in the previous "Scale Development" chapter), data collected is non-normal in distribution; hence bootstrap adjusted estimates are again employed.

This re-specification process culminates in a co-varied, three-factor "conventional" affective solution, comprised of latent *Joy*, *Apathy*, and *Miserable* constructs (see Figure 34). Suited to the context of un-innovative, highly familiar products, such a conceptualization seems to incorporate simple, easily recognizable and communicable positive and negative affective items such as *Pleased*, *Happy*, *Sad*, *Miserable,* etc. The retention of such items is likely attributed to the ability of respondents (particularly those lacking in emotional intelligence) to identify and experience these particular items, and effectively communicate their experience in a self-report research instrument such as that employed in this study. Conceptually, such emotions are quite weak in intensity and inactive by nature, thus are suited to the evaluations one makes in response to a familiar product. Importantly though, this scale incorporates assessment of both positive and negative affective states, as well as the almost neutral-like *Apathy* emotions that represent the lack of engagement individuals have with the all-to-familiar products. This broad conceptualization of affect is a substantial conceptual and methodological contribution likely to enhance the predictive ability and generalizability of subsequent structural models within this "conventional" research context.

Examining the means of the affect items (see Table 97), it is integral to note that unlike the other measurement models that have captured data through Likert scales, this affective measure makes use of a continuum approach, where there is no bi-polar or disagree / agree assessment, rather as each score increases, the intensity with which the respondent experiences that particular emotion is said to increase. With that in mind, it is clear that the "conventional" sample experienced the positive, *Joy*

Figure 34: *Affect* measurement model (conventional, *n* = 242)*
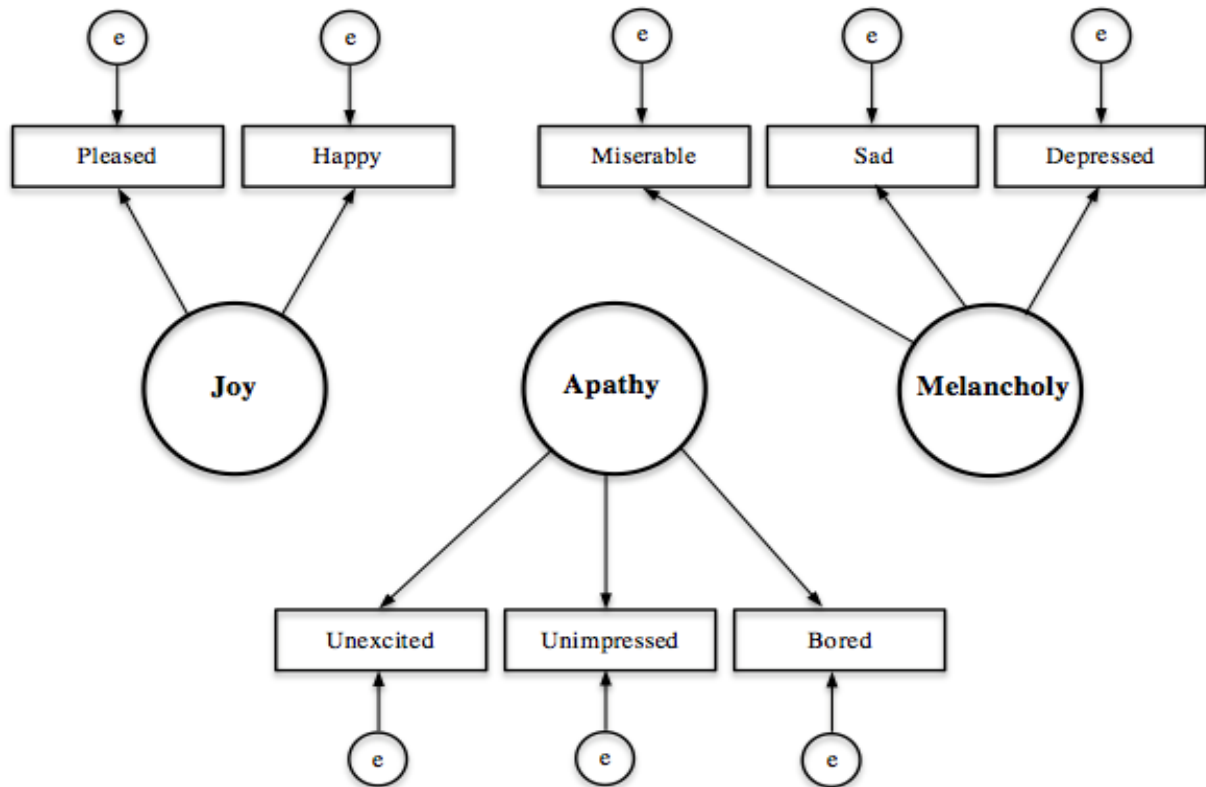
* *Joy* and *Apathy*, and *Apathy* and *Melancholy* factors are correlated

emotions (3.203) in rather strong intensity. Such suggests a pretty positive emotional experience overall, and unsurprisingly the negative, *Miserable* emotions are not experienced in high intensity (mean = 1.515). This is an encouraging finding provide support for the potentially opposing nature of these emotion factors. However, in assessing the *Apathy* emotions, as evidenced through the high average intensity of experience, it appears respondents do generally lack enthusiasm and interest for the products examined. Considering their conventional and unsurprising nature, this appears logical, and is likely to culminate in a reduction in overall attitudinal or connotative assessment of the products within this sample. In evaluating the *SD* figures, a moderately wide variance of scores is observed for all emotions, with the *SD* often approximating half of the item mean score. Such suggests that whilst the mean values present an average, there is large variance in teach of the intensities with which the emotions are experienced. It is probable such has resulted from the highly subjective nature of experiencing affect and the intensities with which it occurs. Furthermore, these substantial SD figures are likely to be linked with the divergent intensities of emotions elicited by the two subject products in this sample of the study.

In comparing the affect figures across the two products to support the aforementioned assertion, it is clear the affective state of the Nintendo is much more positive and engaged then that of the stapler. The average *Joy* and *Apathy* scores of 3.695 and 3.83 respectively support this argument when compared to those of the stapler (2.785 and 4.527). Considering it is likely that exposure to a product such as in this study is not likely to elicit very intense affect (such as achieving a hard-earned goal or the death of a loved one may), these discrepancies are actually quite substantial, and as supported through the t-tests, they are significantly different across the two products.

Table 97: *Affect* item descriptives (conventional, *n* = 242)

Indicator	Latent Factor	Mean	SD	Stapler (mean)	Nintendo (mean)
Pleased	JOY	3.186	1.898	2.95	3.46
Happy		3.219	1.960	2.62	3.93
Unexcited		4.463	2.520	4.85	4.00
Unimpress.	APATHY	4.289	2.520	4.49	4.05
Bored		3.876	2.281	4.24	3.44
Miserable		1.632	1.415	1.71	1.54
Sad	MELANCHOLY	1.430	1.103	1.42	1.43
Depressed		1.483	1.171	1.53	1.44

Examining the CFA estimates of the affect items (see Table 98), it is firstly noted the three emotion factors are statistically covaried, with *Joy* and *Apathy* exhibiting a relatively strong inverse relationship of -.347, whilst *Apathy* and *Melanchol*y reveal a covariance of .276. Interestingly, despite the strong bi-variate relationships just discussed, *Joy* and *Melancholy* are not statistically related. Considering the conceptual relationship formed between the affect items, such empirical connection is indubitably justified. Furthermore, due to the aforementioned non-normality, the following estimates are bootstrap adjusted. In examining the factor loadings of the items on their respective constructs, each is strong and in evidence of statistical significance as indicated through its sizable critical ratio of significance. Assessing the standardized regression estimates, those observed are acceptable for most, with exception coming in the form of *Bored*, *Miserable*, and *Depressed* which do not entirely satisfy the often recommended criteria of .700 (Chin and Todd, 1995). This factuality results in the variance explained in these items by their respective constructs being slightly less than the desired figure of .500. However, as they are not major violations and such is only observed in a single sample, the concern is not dire. Additionally, the less than sufficient rise in the SD of the items through a one SD rise in the construct is likely connected with the variance observed in these emotions as evidenced through the prior sizeable standard deviation scores. As a result, the desired rise in SD is not occurring,

as the SD is quite large. However, as delineated in Table 98, this large variance is likely a result of the differing

Table 98: *Affect* **CFA estimates (conventional, *n* = 242)**

Indicator	Latent Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Pleased	JOY$^{\$fc}$	1.000	-	-	-	.825	.681	.770	.870	.769
Happy		1.189	.201	5.915	***	.932	.868			
Unexcited	APATHY$^{\$fc}$	1.000	-	-	-	.873	.762	.599	.815	.586
Unimpress.		.845	.071	11.901	***	.797	.635			
Bored		.655	.079	8.291	***	.636	.404			
Miserable	MELAN.$^{\$fc}$	1.000	-	-	-	.683	.466	.503	.752	.503
Sad		.874	.178	4.910	***	.754	.569			
Depressed		.850	.163	5.215	***	.691	.478			

*** p < .001

\$ Estimates mildly non-normally distributed (skew c.r. > 2, kurtosis c.r. > 7), thus figures are bootstrap estimates (1000 rotations)

fc Factors correlated, Joy – Apathy correlation = -.347, Apathy – Melancholy correlation = .276

intensity of affect experienced by the two products, and is unlikely to be cause for concern in this sample. Examining variance explained at the construct level, convergent validity is supported for each emotion factor with the AVE figures all exceeding .500 (.770, .599, and .503 respectively), whilst strong internal consistency is supported through the high CR figures. Regarding the inter-item correlations, *Apathy* and *Melancholy* present acceptably broad constructs with figures of .586 and .503 respectively, whilst *Joy* may be considered too narrow at .769. In light of these findings, the emotion factors employed in this "conventional" sample, whilst not of the same composition as the full consumer innovation affect scale developed, are empirically and conceptually strong.

Compatibility:

An integral component to adoption, Rogers (1995, 2003) initially explored the concept of compatibility as the degree to which an innovation matches the potential adopter's needs and values. With a slightly wider conceptualization in this research (encompassing lifestyle and usage perceptions), the construct is expected to be a key explanation for adoption behaviour (see Figure 35). Additionally, exploring *Compatibility* provides a contribution to this research, as extant theoretical frameworks such as the TPB have ignored it to date.

Figure 35: *Compatibility* measurement model (conventional, *n* = 242)
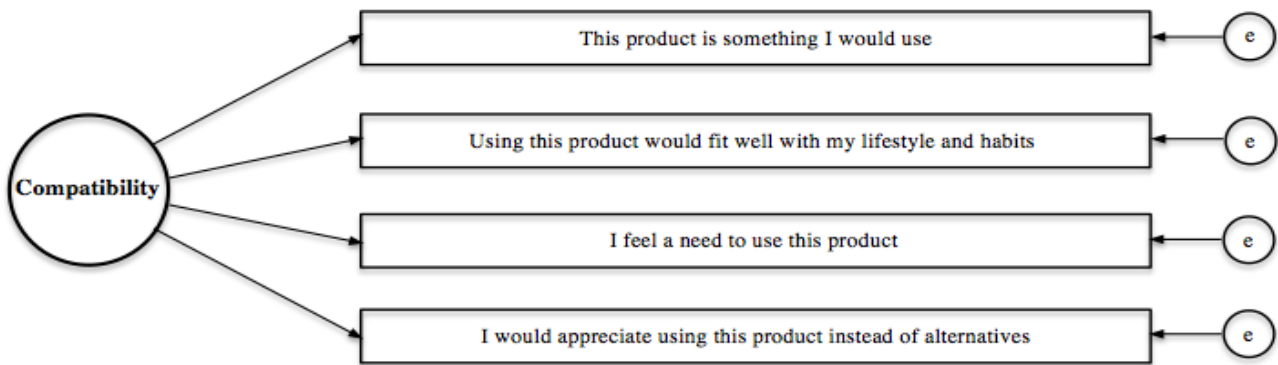
Examining the means of the scale items (see Table 99), the general consensus is that this "conventional" sample does not see a fit with their needs and lifestyles of respondents, as indicated through the mean items in disagreement with compatibility (mean = 3.300, range = 2.51-4.02). Examining the *SD* values, the mean *SD* of 1.821 suggests a wide spread of scores for these items, noting such respondents may perceive a moderate degree of *Compatibility*, however most are in disagreement for these products.

Analyzing the item means of each product, it is revealed the *Compatibility* perceptions of both the stapler (mean = 3.845) and Nintendo (mean = 2.658) are low, with *t*-test analysis revealing the Nintendo's mean *Compatibility* item scores are statistically significantly lower (*Compatibility t*-test indicates significant difference in means (equal variances not assumed, Levene's test $p < .05$), $t(218.737) = 6.328$, $p < .05$; medium effect size = .393). With an average item score of 2.658, respondents vehemently do not see the Nintendo's compatibility with their lifestyle, of which such is a likely a result of the outdated nature of the product. Examining the stapler, the mean figures for item 1 and 2 (4.85 and 3.98) suggests respondents do generally agree the product is something that fits their lifestyles and they would use, but the need or appreciation for the product over alternative is not really existent. Such is unsurprising considering the low level of involvement or engagement most consumers are likely to have with stationery such as a stapler, evidently the perception of compatibility is low.

Table 99: *Compatibility* item descriptives (conventional, *n* = 242)

Indicator	Latent Factor	Mean	SD	Stapler (mean)	Nintendo (mean)
Compat_1		4.02	2.039	4.85	3.04
Compat_2	Compatibility	3.45	1.973	3.98	2.83
Compat_3		2.51	1.635	2.95	1.99
Compat_4		3.22	1.639	3.60	2.77

Examining the bootstrap-adjusted CFA estimates of Compatibility, as exhibited in Table 100, the loadings of each item on the latent factor are very strong, ranging from .768 - 978. Encouragingly, the SEs are very low (mean = .023), suggesting the nature of the observed relationship between each item and the factor is very close to what is implied by the theoretical model. Regarding SRWs, these figures are also very high (mean = .869), further supporting the close connection between the factor and its items. Herein, considering the generally negative perceptions of the subject products' compatibility, and in consideration of these strong regression weights (both standardized and not), it is anticipated further analysis will see a small number of this sample indicating intent to purchase these products. Exploring the variance explained in each item by the factor, the AVE figure of .758 is very encouraging, whilst the reliability of the construct is also extremely high, as indicated by the CR figure of .926. Regarding conceptual breadth, Compatibility is somewhat narrow, with a mean AIIC of .756, but nonetheless, the construct and its associated items demonstrate pleasing empirical validity.

Table 100: *Compatibility* CFA estimates (conventional, *n* = 242)

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Compat_1		1.000	-	-	-	.921	.848			
Compat_2[rc]	Compat.[$]	.978	.022	44.455	***	.905	.819	.758	.926	.756
Compat_3[rc]		.884	.022	40.182	***	.854	.729			
Compat_4[rc]		.768	.025	30.720	***	.797	.636			

*** $p < .001$

[$] Estimates mildly non-normally distributed (*skew c.r.* > 2, *kurtosis c.r.* > 7), thus figures are bootstrap estimates (1000 rotations)

[rc] Items 2 and 4, and 3 and 4 residuals covaried

Attitude:

Hypothesized as both an exogenous antecedent (i.e. Ajzen, 1985; Davis et al., 1989) and an endogenous mediator (i.e. Bruner and Kumar, 2005; Kulviwat et al., 2007; Nasco et al., 2008), the importance of attitude in adoption studies is widely supported. This research captures such through bipolar, semantic differential assessment of one's general perception of the subject product. Importantly, this research provides a methodological contribution by also assessing the strength with which this attitude is held (a key influencer of adoption behaviour as identified by Krosnick and Petty, 1995; Kim, Chun and Song, 2009), forming an aggregate of the two constructs by interacting each attitude item with the overall strength held. Such is believed to enhance the predictive ability of the scale, culminating in a three-item measure of consumer attitudes.

Figure 36: *Attitude* measurement model (conventional, *n* = 242)
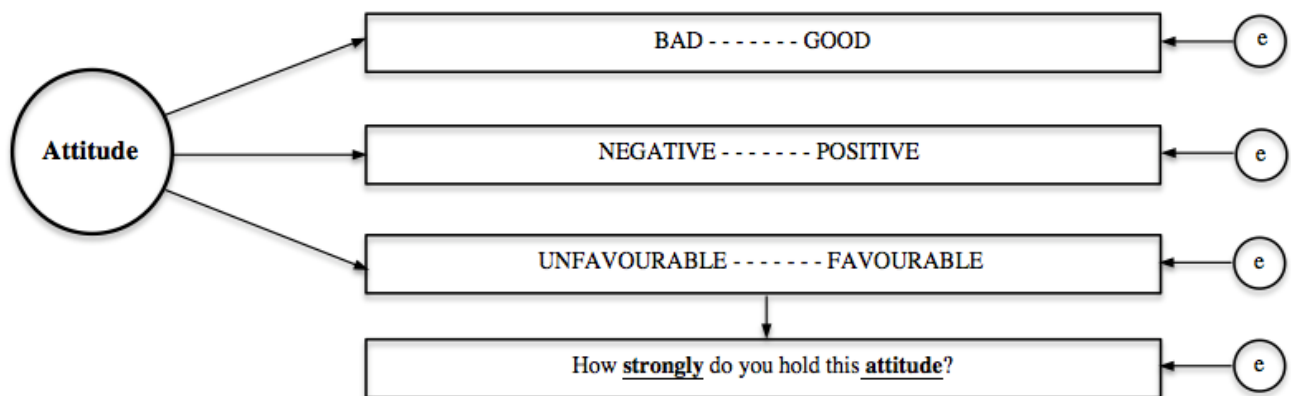
In assessing the mean figures of the *Attitude* items (see Table 101), it appears the general attitudinal appraisal in this sample is mildly positive (mean = 4.176). This suggests respondents like or favour the products, but not to a particularly strong extent. Addressing the SD of the items, such figures are quite large, suggesting the attitudes experienced by respondents is quite varied, and considering the closeness of the mean to the center neutral point, it appears these attitudes generally swing between slightly positive, and slightly negative, suggesting most of the scores range between 2.75 and 5.61, on average.

Table 101: *Attitude* item descriptives (conventional, *n* = 242)

Indicator	Latent Factor	Mean	SD
Attitude_1		4.221	1.395
Attitude_2	ATTITUDE	4.262	1.432
Attitude_3		4.044	1.462

Evaluating the CFA estimates of the *Attitude* aggregate construct (see Table 102), the item factor loadings on the latent construct are each very strong and statistically significant, whilst the SRW (mean = .901) and SMC (mean = .814) figures are also indicative of empirical strength. Supporting convergent validity, the AVE figure of .814 is very strong, whilst the SEM reliability estimate of .929 is also extremely high. Regarding conceptual breadth, the construct may have a concern as indicated through the high AIIC figure of .812, suggesting future research may seek to measure the same construct with a single, or multiple conceptually broader items. Nonetheless, the CFA estimates support that this *Attitude* aggregate measurement model is strongly suited to further structural application.

Table 102: *Attitude* **CFA estimates (conventional,** *n* **= 242)**

Indicator	Factor	β	SE	t	Sig.	SRW	SMC	AVE	CR	AIIC
Attitude_1		1.000	-	-	-	.903	.816			
Attitude_2	ATTITUDE	1.068	.048	22.312	***	.940	.883	.814	.929	.812
Attitude_3		.999	.052	19.243	***	.861	.742			

*** *p < .001*

Credence:

Alongside the aforementioned multi-item scales, the "conventional" sample also makes use of a single item to assess respondents *Credence.* Like the *Attitude* construct, the items for *Credence* are an aggregate formed through not only the assessment of the likelihood of the negative outcome occurring (risk), but also the certainty with which that risk perception is held. Such a methodological nuance is utilized as perceptions of risk are associated with a degree of probability in respondents assessment (Dholakia, 2001), and as innovations are possessive of many credence qualities (particularly during the pre-adoption stage) that are unable to be conclusively verified through the individual consumer's personal experience (Ronteltap et al., 2007), uncertainty is likely to play a large role in risk assessments. Evidently, the risk and uncertainty components are aggregated together (see "Methodology" chapter) to form a single item subsequently referred to as *Credence* assessments.

In originally assessing six forms of risk as utilized by Murray and Schlacter (1990), and Quintal, Lee, and Soutar (2010) (financial, performance, physical, psychological, social, and convenience), the measurement model is re-specified to this presumably low risk "conventional" context. In examining this measurement model, the six-item scale is far from adequate in its fit to this research context, thus only the *Performance Risk (*certainty aggregate) component is an adequately fitting, and the scale is re-specified to a single-item *Credence* measure. Such appears logical, as even though the subject products are far from being perceived as innovative, there is still a degree of potential in the product failing in its performance. Other risk assessments such as psychological, physical, and social don't appear to be concerning to respondents, whilst to a degree, the latter of the two (social) and the financial component of risk are assessed in some form through *Social Influences* and *P.V.F.M.*

It must be noted that in the pursuit of consistency amongst the research instrument, risk perception (and certainty) items are worded so that a higher score is more indicative of less likelihood of risk, or in other words, the higher the score, the more positive and certain the risk assessment. With that in mind, the mean of the *Credence* item in this sample is 5.400, suggesting an overall quite positive

perception held with quite strong conviction, or lack of risk associated with these products. The SD figure of 1.247 also suggests a moderate amount of variance from this figure is observed, meaning the majority of *Credence* perceptions range from approximately 4.2 to 6.6, which are all positive risk assessments in this "conventional" sample. The computation of, and employment of the risk (aggregate) scale item in this "conventional" context is another methodological contribution made by this research.

Acceptance:

In assessing the key dependent variable of this research, as is examined in the "Methodology" chapter, *Acceptance* is assessed through respondent's perceptions of their intention to resist, trial, or purchase the subject product. Such is measured through a three-item ordinal measure, with each respondent selecting his or her intentions for the product from the options resistance, trial, or purchase. In this "conventional" sample, 152 respondents have indicated their intentions are to resist the product, i.e. they do not wish to purchase of further trial the product, 74 selected trial, indicating they wish to have further opportunity to interact with, research or trial the product before making a decision about future purchase, whilst 16 indicated an intention to purchase the product in the future. Considering the well-established nature of these products, their wide diffusion into consumer groups, and their "decline" stage of adoption, such figures are not surprising. This enhancement to consumer "adoption" is a major conceptual and methodological contribution of this study, as most likeminded studies limit respondent's acceptance decisions to single options such as "purchase" or "adopt". Such options can be conceptually vague, and neglect the key behavioural outcome of resistance (Zaltman and Duncan, 1977; Poon et al., 2004; Sanford and Oh, 2010). When considering the context of innovation acceptance, resistance is likely to be the status quo that practitioners are enlisted to break consumers from, hence the outcome is a major stakeholder in acceptance decisions, and one that is a critical contributor to the conceptual breadth and real-world applicability of this study.

Discriminant validity:

Having supported the reliability, unidimensionality, and convergent validity of each of the measurement models, the last step is to examine the discriminant validity of each measure. Farrell (2010) notes, if discriminant validity is not supported, latent variables may exhibit influence on more than just the indicators to which they are theoretically related, such is problematic, thus it must be

determined that each of the measurement models differ empirically. Herein, discriminant validity is assessed by examining a model in which all constructs (with the exception of the ordinal *Acceptance* variable and the single-item *Credence* measure) are correlated. Through examining the factor correlations and the square roots of the AVE of each factor in this correlated solution such validity is assessed (see Table 103).

Through initial inspection, as no correlation (the standardized covariance) exceeds the range of .800-.850, preliminary support is provided. Furthermore, as the square root of the AVE figure (diagonal) for each construct exceeds each of its associated correlations, further support is provided, and it is concluded the discriminant validity of the measurement models are supported. Examining each of the factor correlations, each generally exists in the anticipated direction (i.e. negatively valenced constructs are inversely related with positively related ones, and positively related with negative ones), and are generally quite sizeable, suggesting the constructs do share a relationship. Importantly, each of the antecedent constructs is quite strongly correlated with the *Attitude* construct, ranging from, .156 - .615, suggesting a structural relationship is likely to exist. Interestingly, the strong inverse relationship between *Complexity* and *P.B.C.* ($r = -.508$) is observed, suggesting the complexity in interacting with a product is inversely related to the level of control in executing a behaviour.

Table 103: Assessment of correlations and discriminant validity (conventional, *n* = 242)[*]

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
COMPLEX. (1)	.856										
USEFUL. (2)	-.262	.887									
SOC. INFL. (3)	-.226	,422	.812								
P.B.C. (4)	-.508	.292	.254	.796							
P.V.F.M. (5)	-.166	.320	.331	.295	.857						
JOY (6)	-.196	-.069	.235	.186	.182	.879					
APATHY (7)	.121	.044	-.113	.077	-.170	-.330	.774				
MELANCH. (8)	.054	.129	.039	-.009	-.123	-.011	.279	.709			
CREDENCE (9)	-.224	.452	.413	.292	.383	.097	-.134	-.066	-		
COMPAT. (10)	-.378	.550	.683	.427	.455	.390	-.400	-.080	.589	.804	
ATTITUDE (11)	-.232	.247	.335	.229	.430	.438	-.484	-.156	.455	.615	.902

[*] Model implied estimates, bolded diagonal figures are the square root of the AVE figure, *Credence* is a single item measure, thus does not have a factor score or AVE

Interim conclusion:

In confirming the discriminant validity of the empirical constructs, the results of Table 103 provide the final approval of the validity of the measurement models used. Herein, such measurement models

specified for this "conventional" sample each offer strong empirical validity, and are considered very suitable for this research context. However, one concern that may be addressed in future research is the conceptual narrowness of the scales, as indicated by the high AIIC values. Clark and Watson (1995, p.316) note, "a scale will yield far more information—and, hence, be a more valid measure of a construct—if it contains more differentiated items that are only moderately inter-correlated" (p.316). Thus, whilst not meeting their recommendation of the majority of items (not the mean) falling within a range of .15 - .50 is not a huge problem as it makes for more internally consistent and perhaps unidimensional scales, the consequence of such is that it may result in constructs that are not covering wide conceptual ground. Such an occurrence may result in quite homogenous variables that when interacting with other variables, provide empirical results (either in support of or rejection) that are not reflective of real-world behaviour of the intended sample population. Such scenarios will result in narrow generalizability, and can be addressed by experimenting with scale items to develop conceptually broader and more realistic scale items.

Acknowledging the strong validity and psychometric properties of each of the previously discussed measurement models, the following constructs are examined in the structural portion of this study for the "conventional" control sample:

- *Complexity*
- *Usefulness*
- *Social influences*
- *Perceived value for money*
- *Joy*
- *Apathy*
- *Melancholy*
- *Perceived behavioural control*
- *Credence*
- *Compatibility*
- *Attitude towards the innovation*
- *Acceptance*

Hypotheses testing: conventional

Through thorough analyses of the measurement models of each construct in this sample, their empirical suitability is established for subsequent structural analyses. In examining the *FACE Model of Consumer Innovation Acceptance* in this conventional sample of products perceived as non-innovative, the hypothesized relationships examined in the innovative context are examined for this "control" sample. Regarding the final dependent variable *Acceptance,* as in the previous samples, respondents are provided with the behavioural intention options of resisting, trialing, or purchasing the product. As indicated in Table 105, an at best reasonable amount of variance in the final dependent variable is observed (40.0%), suggesting the innovation acceptance theoretical framework examined is not suited to this non-innovative context. Through examining this model, the majority of empirical relationships theoretically proposed for breaking one's status quo in the innovation acceptance context are not empirically supported. Through such analyses, those constructs discovered to not empirically influence their respective dependent variables are omitted, with the final structural model to explain acceptance of conventional products proposed (see Figure 37).

Figure 37: Final supported structural model (conventional, *n* = 242)
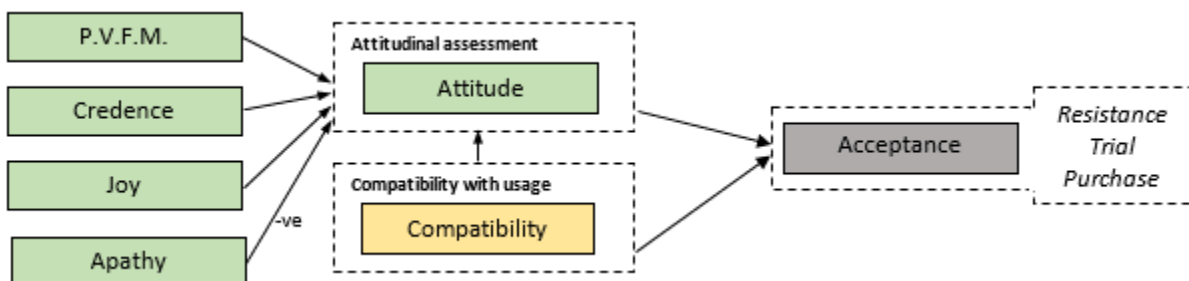
Having examined a variety of plausible solutions, the best fitting conceptually plausible model is unearthed for this sample, with the following model fit figures delineated: x^2= 99.570 (*df* = 11); CFI = 1.000, TLI = 1.095, RMSEA = .000 (LO90 = .000, HI90 = .034, PCLOSE = .971). Such a model positions *Perceived Value For Money*, *Compatibility, Credence* (single item), and affective constructs *Joy* and *Apathy* as antecedents to a consumer's *Attitude* towards a conventional product. In turn, *Attitude* and the aforementioned *Compatibility* perceptions positively influence *Acceptance* intentions. Regarding the size of this sample, such a figure (*n* = 242) comfortably exceeds Boosma's (1982) recommendation that latent variable structural modeling exceeds sample sizes of at least 200,

Correlations:

Examining the correlations between the constructs retained in the model for this conventional sample (see Table 104), each are as anticipated in direction. Firstly, the negatively-valenced affective construct *Apathy* is negatively correlating with other constructs, suggesting responses that are conceptually logical. Unsurprisingly, *Attitude* correlates quite strongly with its antecedent variables, ranging from .360 - .549 (in magnitude), whilst *Compatibility,* ranging from .281 - .552 (in magnitude) also exhibits moderate correlations with each construct. Interestingly, *Compatibility*'s correlation with *Joy* (.281) is not particularly high, perhaps suggesting that the perception of a conventional product's fit with needs, wants, and lifestyles of a consumer may not evoke strong affective reactions. Overall, the results exhibited in Table 104 are encouraging in identifying that the constructs of this solution do experience some sort of connection with one another, and in their sound conceptual relationships, any notion of spurious correlations is rejected.

Table 104: Sample correlations (conventional, *n* = 242)

	P.V.F.M	Apathy	Joy	Compat.	Attitude	Credence
P.V.F.M.	1.000					
Apathy	-.159	1.000				
Joy	.117	-.382	1.000			
Compat.	.407	-.346	.281	1.000		
Attitude	.397	-.440	.360	.549	1.000	
Credence	.367	-.126	.035	.552	.438	1.000

Familiarity with product domain:

Examining consumer's perceptions of familiarity with the product domain as a driver of accepting conventional products, the impact of *Knowledge* and *Innovativeness* are revealed statistically non-significant. Such indicates that the familiarity associated with a conventional product through experience with the product domain is not salient in consumers' decision making to accept it or not. Considering the already-familiar nature of the product domain and the respondent's disagreement with its newness, novelty, and difference of characteristics to other products, such appears completely congruent. Furthermore, a respondent's perception of their own personal *Innovativeness* is not supported to increase *Acceptance* of a conventional product, thus whilst we cannot conclude it encourages rejection, we can conclusively say that this personal perception of experimenting with new

Table 105: *Acceptance* regression estimates (conventional, *n* = 242)

Exogenous	β (C.I.)	Odds	SE	t	Sig.	SRW	R^2
Attitude	.369 (.192, .541)	1.446	.067	5.482	***	.370	.400
Compatibility	.245 (.109, .352)	1.278	.076	3.226	**	.348	

Note: DV: *Acceptance*
** *p* < .01, *** *p* < .001

products in a particular product domain is not influential when a product is not considered innovative, as it was in both innovative samples. Herein, this conventional "control" sample helps evidence the importance of familiarity with the product domain in breaking one from their status quo through innovation acceptance.

Attitudinal assessments:

Assessing causal relations between exogenous variables and *Attitude*, consistent factor loadings (in magnitude) of the retained constructs are observed, ranging from .144 to .177. Such is an interesting finding, as it suggests consumers' attitude towards conventional products is influenced, in relatively similar strength, by several variables. Intriguingly, these do not include *Complexity* or *Usefulness*, as innovation samples utilize the construct *Relative Advantage* as an assessment of the product's usefulness relative to existing product alternatives. Furthermore, TPB and TAM frameworks traditionally employ *Ease of Use,* which assesses *Complexity* from the opposing perspective of simplicity in interacting with the subject product. Support exists (tentatively) for *Complexity* in both innovativeness samples, thus the lack of support for the construct in this conventional sample not only contradicts the aforementioned adoption frameworks, but contrasts the construct's role in breaking from status quo alternatives for innovative products, proving these treatment conditions to be of empirical substance. Yet again, the social benefits of adoption as represented by *Image* are not salient in consumers' attitudinal assessments.

Table 106: *Attitude* regression estimates (conventional, *n* = 242)

Endogenous	Exogenous	β (C.I.)	SE	t	Sig.	SRW	R^2
P.V.F.M.	Attitude	.148 (.043, .241)	.048	3.069	**	.165	
Joy	Attitude	.144 (.049, .232)	.045	3.244	**	.175	
Apathy	Attitude	-.149 (-.208, -.084)	.033	-4.518	***	-.248	.463
Compatibility	Attitude	.164 (.070, .251)	.044	3.758	***	.232	
Credence	Attitude	.177 (.059, .280)	.046	3.868	***	.216	

** *p* < .01, *** *p* < .001

Examining perceptions of financial value, *P.V.F.M.* (a logical addition to any adoption framework, and one which is ultimately lacking from many frameworks – i.e. TRA, TPB, TAM, CAT, UTAUT) is revealed to directly and positively influence *Attitude* in a relatively strong magnitude ($\beta = .148$, *p* < .01). Logically it is discovered that as the price of a product relative to the perception of its quality increases, so to does attitudinal assessments of a conventional product. Such a discovery in a conventional acceptance framework is believed to greatly enhance understanding of acceptance of conventional products.

Examining the impact of affect in conventional product acceptance, the experience of *Apathy* emotions reduces respondents *Attitude* towards these conventional products ($\beta = -.149$, $p < .001$, CI: -.208, -.084; SRW = -.248). This suggests that as respondents become increasingly apathetic (as measured through *Unexcited*, *Bored* or *Unimpressed),* their attitudes become increasingly less positive. Similarly, the experience of positive *Joy* emotions, such as *Happy* and *Pleased,* in increasing intensity results in a stronger, more positive attitude towards conventional products ($\beta = .144$, $p < .01$, CI: .049, .232; SRW = .175). Through employing the *C.I.A.* scale, the influence of this affect is a new discovery for this non-innovative context. Various studies do explore affect in adoption (see Sweeney and Soutar, 2001; Turel, Serenko, and Bontis, 2007; Nasco et al., 2008), however, this unique empirical composition highlights the importance of these specific emotions, in a combination not yet discovered for this "conventional" context. However, more importantly to this research is the lack of support for the full bi-valenced hierarchical *C.I.A.* affective scale in this conventional sample. As the control sample, this further supports the efficacy of the *FACE Model* to the innovation acceptance context.

In assessing other antecedents to *Attitude, Compatibility* ($\beta = .164$ $p < .001$, CI: .070, .251; SRW = .232) is discovered to be influential in respondent's attitudinal assessment of conventional products. As the construct is a direct assessment of the products fit with one's needs, wants, and lifestyle, its intimate connection with consumers' lives is a likely explanation for its key empirical effect. Herein, the discovery of this influence is unsurprising in light of the strong influence of the construct as both an indirect (through *Attitude*) and direct antecedent to *Acceptance* in both innovativeness samples. Like *P.V.F.M.* and affect, *Compatibility* appears to be a very salient contributor to all acceptance studies, innovations or not, and should be considered an integral variable to practitioners in their understanding of consumer decision-making.

Lastly, *Credence* is evidenced as a strong empirical stakeholder in respondent's attitudinal assessment of conventional products (β = .177, *p* < .001, CI: .059, .280; SRW = .216). However, in this sample, the construct is only represented by one sub-component – performance. Conceptually, this component does appear suited to the context of product acceptance, as one would assume a greater attitudinal assessment would occur if a product is perceived to perform as intended, however through dimensionalizing this construct through this one sub-component, its distinction from the innovative samples is highlighted. Herein, *Credence*'s influence in the acceptance of conventional products (alongside other constructs) further illustrates the unique contributions of the *FACE Model* to innovation acceptance literature.

Examining *Attitude's* antecedent relationship with *Acceptance* as exhibited in Table 105, the construct (β = .369, *p* < .001, CI: .192, .541; SRW = .370) is observed to have a sizable statistically significant influence, with an increase in *Attitude* significantly increasing respondent's *Acceptance* of a conventional product. Such is not a surprising result, as *Attitude* has been discovered to exert a direct influence on behavioural intentions in many studies, including O'Cass and Fenech (2003), Kim, Chun and Song (2009), and Pieniak et al. (2010). Examining the empirical relationship, it is revealed a one-unit rise in the construct will result in a .369 rise in the latent underlying *Acceptance* construct. Such is a very strong empirical impact (and one that is supported through the consistent confidence intervals of .192 - .541), and whilst converted to the odds of 1.446 it is indicated that holding *Compatibility* constant there is a 45% increase in the odds of moving into the next *Acceptance* level with a one unit rise in *Attitude*. This is a substantial influence, and suggests that improving the attitudinal assessments of consumers does strongly enhance acceptance intentions of a conventional product.

Compatibility with usage:

Examining *Compatibility's* influence on *Acceptance,* the construct is observed to have a statistically significant impact (β = .245, *p* < .01), with an increase in this antecedent significantly increasing respondent's *Acceptance* of a conventional product. Strong empirical support is also observed, indicating a conventional product's fit with an individual's needs, wants, and lifestyles greatly enhances respondent's intention to accept that product. Equating such a regression weight with the odds paradigm, the observed figure of 1.278 suggests a 27.8% increase in the odds of moving into the next *Acceptance* group with a unit-rise in the construct. Whilst such is not as powerful as *Attitude*'s influence, it is still substantial, and reveals practitioners must emphasize such fit, even with established

and conventional products. Intriguingly, such a discovery is an additional influence to its previously addressed mediated influence through *Attitude*, and supports the integral role the construct plays in conventional product adoption. Considering the empirical influence of *Compatibility* is rarely examined outside of the innovation context, such a discovery is even more valuable.

Enablers (internal and external):

In addressing the role of internal and external enablers of *Acceptance,* in this conventional sample *P.B.C.* and *Social Influences* are not statistically significantly influencing the dependent variable. Considering the high item mean of *P.B.C.* in this sample (5.877), this is a surprising discovery, and may indicate respondents do not relate such perceptions of internal and external control with acceptance of conventional products, despite its strong overall assessment. This suggests that although respondents feel very much in control and supported to accept conventional products, it does not make them any more likely to. Interestingly *P.B.C.* is observed to be a somewhat salient influencer in highly innovative products, thus this conventional sample again illustrates the contrast that individual's perceptions of a subject product can elicit.

Assessing the impact of *Social Influences,* the construct is again discovered to not empirically influence *Acceptance* in this structural model. As a proposed enabler of *Acceptance*, the construct has not proven influential in any of the samples, and in this conventional sample it is yet again shown that the pressures or expectations from important people does not impact on decisions to move from resistance to trial, and trial to purchase. In this conventional sample, such a discovery may be down to the fact that these products are so widely diffused already, that such influence are not salient in consumer decision-making. Nonetheless, they again support that social pressures as an external enabler of behaviour are not always salient.

Indirect effects:

Assessing the indirect effect of each antecedent to *Attitude* carried through to the final dependent variable of *Acceptance* (see Table 107), negligible effect sizes are observed for each construct (ranging from .053 – 066 in magnitude). This indicates that the influence of these constructs is more localized to attitudinal assessments, rather than behavioural intentions.

Table 107: Indirect effects (conventional, *n* = 242)

	P.V.F.M.	Joy	Apathy	Compatibility	Credence
F.L.	.055	.053	-.055	.061	.066
Odd	1.056	1.054	-1.056	1.063	1.068

Note: Mediator: *Attitude*, DV: *Acceptance*

Acceptance thresholds:

Threshold scores exhibited in Table 108 represent the estimated cutoff point on the continuous latent response variable (y*) underlying resistance, trial and purchase behavioural intentions. It is observed respondents intend to reject the subject product when they experience a value of .072 or less on the underlying *Acceptance* variable, intend to trial when this underlying latent cutoff is between .072 and

Table 108: *Acceptance* threshold scores (conventional, *n* = 242)

Resistance (*n* = 152)	Trial (*n* = 74)	Purchase (*n* = 16)
.072 <	.072 - 1.285	1.285+

Note: Intercept = -.093

1.258, and intend to purchase when their score on the underlying *Acceptance* variable exceeds 1.285. Of the three behavioural intentions, respondents most intended to resist the product (62.81%), with some wishing to further trial (30.58%), and a small proportion intending to purchase it (6.61%). As the intercept figure of -.093 indicates respondents behavioural intention for the subject product is overwhelmingly to resist it when all antecedent variables are at their mean value, it is inferred substantial rises in *Attitude* and *Compatibility* are required to move the acceptance intentions of these conventional products towards purchase. Even considering the large effect sizes of these two antecedents, such is likely to be challenging for conventional products such as those examined in this sample.

Conclusion:

Examining the *FACE Model of Consumer Innovation Acceptance* as a "control" in this conventional sample has provided suitable support for the model's efficacy in explaining what breaks consumers from their status quo in accepting an innovation. The model's inability to replicate anything in resemblance of what is discovered in the two innovative "treatment" samples confirms the findings of the previous samples as valid within this particular research context. In light of such, it can be conclusively stated that familiarity with the product domain, attitudinal assessments, compatibility

with usage, and internal and external enablers do not explain acceptance of conventional products; thus, the ability of such a framework to explain acceptance in the two innovativeness samples can be attributed to consumer's perceptions of a product's innovativeness. Herein, such supports that the theoretical framework under examination is in fact specified to the phenomenon of status quo bias amidst innovation acceptance, not just acceptance of any product.

CHAPTER 7: CONCLUSION

Having thoroughly examined the literature and identified significant research gaps pertaining to what drives consumers to break from their status quo and accept a new product innovation, this research has successfully developed a research design to address such gaps with the aforementioned discussion revealing some very intriguing and insightful findings. Herein, in concluding the research, this chapter addresses the study's success at addressing its previously set research questions and objectives, while delineating the conceptual, methodological, and practical contributions of the study. Finally, a discussion of the limitations of this research and areas for future research is undertaken.

Research questions and objectives:

This research set out to answer "*What drives a consumer to break from their status quo and accept a new product innovation?*" In order to address such a question, the following research objectives are set:

- **RESEARCH OBJECTIVE 1:** To develop a theoretical framework that explains what drives consumer status quo destruction through the acceptance of new product innovations
- **RESEARCH OBJECTIVE 2:** To unify status quo bias theory with technology acceptance and innovation diffusion models
- **RESEARCH OBJECTIVE 3:** To develop a scale to dimensionalize the affect consumers experience when exposed to product innovations
- **RESEARCH OBJECTIVE 4:** To dimensionalize consumer acceptance of innovations through an ordinal outcome scale
- **RESEARCH OBJECTIVE 5:** To examine acceptance drivers across two levels of perceived innovativeness: mildly innovative and highly innovative
- **RESEARCH OBJECTIVE 6:** To confirm this theoretical framework is suitable only for the context of innovative products

Through addressing each of these objectives, culminating in the successful development and application of the *FACE Model of Consumer Innovation Acceptance* theoretical framework, this

research goes a long way towards accomplishing such. This is achieved through successfully meeting each of this study's previously set objectives. Specifically, an extensive and conceptually focused theoretical framework is developed, of which status quo bias theory and technology and innovation models are unified. As part of this framework, a measure of the affect consumers experience when exposed to an innovation is successfully developed, while *Acceptance* is further dimensionalized through three behavioural intention outcomes, and examined across varying levels of perceived innovativeness (including those products that are not considered innovative). Through successfully achieving these objectives, this study's guiding research question has been addressed in a manner of substantial value to academia and practitioners alike.

To provide substantial contributions to both academia and practice alike, this research attempts to answer the following question: *What drives a consumer to break from their status quo and accept a new product innovation?* To achieve such, the following research objectives are set:

Research contributions:

What enables or inhibits a consumer from purchasing an innovation is yet to be discerned in both an academic and practical sense. Evidently, gaps in hypothesis testing of consumer acceptance and the importance of the inimitable relationships shared between various acceptance drivers are telling (Schierz et al., 2010). Herein, this research attempts to rectify such by thoroughly and scrupulously examining, for the first time, consumer acceptance of innovations. Purely applying technology acceptance frameworks to innovation acceptance is unlikely to be prudent, innovations by definition possess a sharp difference in characteristics and require the consumer to learn. Herein, status quo bias (see Samuelson and Zeckhauser, 1988) looms as an inhibitor of adoption and widespread diffusion of innovations, and this study addresses its research question, *what are the agents of change in breaking from the status quo through accepting a new product innovation?*

Using the theoretical notion of status quo bias (SQB) as a central underpinning to explain such consumer behaviour, this study explores what it takes to move a consumer from resisting an innovation, to trailing it, and even purchase. Such an objective is defined in light of the increasingly rapid pace by which new products are developed and introduced (and mostly rejected) to markets in our contemporary society, and the absence of a theoretical framework to explain such acceptance of innovations. Addressing such, this research provides a much-needed extension of traditional

"adoption" models and innovation diffusion perspectives through the employment of status quo bias theory as a key theoretical underpinning. The contributions made in this study provide both a holistic insight into consumer decision-making, and a vital foundation for future examination of this unique and specific research context. Herein, this study provides considerable value and new insights to both academia and practitioners alike, as subsequently discussed in the form of conceptual, methodological, and practical contributions.

Conceptual:

This study contributes immensely to academia through the identification and interaction of several nuanced conceptual relationships detailed through the final supported theoretical frameworks and the salience or unimportance of associated variables to this model. The key conceptual contributions are detailed as follows:

a) Scale development of the Consumer Innovation Affect (C.I.A.) measure and empirical application in subsequent theoretical frameworks
b) Establishing the FACE Model of Consumer Innovation Acceptance
c) Discerning the influence of consumer's perceptions of innovativeness in status quo destruction
d) Delineating Acceptance of innovations into Resistance, Trial, and Purchase

a) *Consumer innovation affect:*

As a predecessor to the development of the final supported structural model, the scrupulous development of the *Consumer Innovation Affect* (*C.I.A.*) scale (as detailed in Chapter 5) provides an initial, and particularly valuable conceptual contribution to this study. While many conventional adoption frameworks (including the TRA, TPB, TAM, UTAUT, CAT, etc.) are ubiquitously employed within academia as theoretical explanations of complex decision-making, none are considerate of the highly salient influence that a consumer's emotions play in such adoption behaviour. Additionally, most studies based on innovation diffusion focus on cognition as the sole driver of adoption (Kulviwat et al., 2007). With this in mind, this study builds on the few others that support that a more complete picture of adoption is revealed through including affect into models of acceptance (e.g. Nasco et al., 2008; Kulviwat et al., 2007; Bruner and Kumar, 2005; Childers et al., 2001). Reinforcing such an assertion in both the "mildly innovative" and "highly innovative" samples, the empirical influence of

the *Positive Affect* and *Negative Affect* constructs are the strongest of all variables, validating their criticality to such a research context. Herein, the development (and subsequent application) of the *C.I.A.* scale to capture the intensity of affect experienced when a consumer is exposed to an innovation provides considerable conceptual value to discerning the affective profile of innovation acceptance.

Discerning its conceptual value, the *C.I.A.* scale developed in this study addresses innovation acceptance through its unique composition of *Positive Affect* and *Negative Affect* as captured through its 17 items associated with the first-order latent constructs of *Joy*, *Wonder*, *Apathy*, *Melancholy*, *Trepidation*, and *Cynicism*. Beyond the conceptually generic emotion items of *Joy* and *Melancholy*, the conceptual composition of the *C.I.A.* is in itself a major contribution. Firstly, the salience of *Apathy* emotions (*Bored*, *Unimpressed*, *Unexcited*) is particularly intriguing, with its nuanced dual-antecedent interactions revealed comparably in each of the samples examined. Evidencing both the rise in negative affect's increase on *Apathy*, and the fall in *Apathy* occurring from a rise in general positive affect, this unique interaction reveals an important nuance of innovation acceptance whilst stressing the importance that an innovation appears engaging and interesting to consumers. The experience of *Trepidation* (*Nervous*, *Panicky*, *Tense*) emotions are also unique to the innovation acceptance context, and as new and unfamiliar products are likely to be characterized by uneasiness and unfamiliarity, the *C.I.A.* indicates that the experience of such consumer affect should be minimized to better facilitate acceptance. The experience of *Cynicism* (*Sceptical*, *Suspicious*) emotions is also discovered as a key part of consumer's affective composition, and considering the novel and unfamiliar nature associated with innovations, such consumer disbelief is revealed to be important. Finally, the inclusion of emotions associated with the exceeding of or favourable deviation from expectations as represented by *Wonder* emotions (*Surprised*, *Astonished*, and *Amazed*) is also revealed as salient. Herein, the four aforementioned latent constructs (and their associated items) of *Apathy*, *Wonder*, *Trepidation*, and *Cynicism* reveal a conceptual composition of affect that is not only pioneering, but also focused in its conceptual profiling of innovation acceptance.

b) *FACE model of consumer innovation acceptance:*

To dimensionalize a theoretical framework explaining what drives a consumer to break from status quo alternatives in accepting an innovation, this study develops the *FACE Model of Consumer Innovation Acceptance.* This model incorporates a range of cognitive and affective constructs that offer

theoretical understanding into how such consumer behaviour can be facilitated, with the following discovered:

Familiarity with the product domain:

<u>*Innovativeness:*</u>

The seminal innovation adoption curve details the stages at which different consumers are likely to adopt the same innovation at different times, if at all. Some may adopt upon initial or the early stages of introduction and are thus considered "innovators" or "early adopters"; others rely upon the behaviour and recommendations of others, whilst some may adopt once the product is well and truly established, if at all. In this study it is discovered that a respondent's innovativeness is discovered to directly exert influence over a consumer breaking from their status quo of resistance, and accepting a mildly or highly innovative product. Such consumers are likely to form part of the aforementioned "innovators" or "early adopters". This is congruent with findings of Rogers (1983, 1995) who details that in innovation diffusion, highly innovative consumers are better able to cope with uncertainty, and thus develop more positive intentions towards acceptance. Herein, the past innovative behaviour of an individual is discovered to play a role in acceptance of future innovations. Considering each and every innovation has a limited consumer base of which to market to, such a conceptual finding suggests the initial focus should be directed towards those consumers that exhibit higher levels of innovativeness in the product category. Thus, it is concluded that consumers who perceive themselves to be more familiar with the product domain (as reflected through their innovativeness) are more likely to break from the prevailing status quos and trial, or even purchase a new product innovation.

<u>*Knowledge:*</u>

Despite the support of several researchers (see Pieniak, Aertsens and Verbeke, 2010; Phillips, Asperin and Wolfe, 2013, etc.), this study suggests that increasing the levels of an individual's perception of their own knowledge with product domain do not enhance their prospects of accepting an innovation, be it mildly or highly innovative. Though it is discovered that the perception of *Knowledge* for those consumers who perceive the product to be highly innovative is larger than those who consider it mildly innovative, the construct does not play a significant role in innovation acceptance for either. This has conceptual implications as even those consumers who do not believe they have high experience or

familiarity with the product domain are open to adopting; an encouraging finding, particularly for innovations that are highly novel or discontinuous and thus characterized by low consumer knowledge. Whilst this doesn't prove that low levels encourage breaking from the status quo, it does support that high levels of knowledge aren't required.

Attitudinal assessments:

Like many before it (i.e. Bruner and Kumar, 2005; Kulviwat et al, 2007; Nasco et al., 2008; Schierz, Schilke and Wirtz, 2010), the attitude a consumer holds is positioned as a key mediator between various antecedents and behavioural intentions in this study. Such is true for products perceived as mildly innovative, and also those perceived as highly innovative, revealing that consumers' favourable assessments of an innovation will better enhance chances of adoption whilst contributing positively towards challenging consumer resistance. Conceptually unique to this context, the positivity and strength of one's attitude towards a mildly or highly innovative product can be enhanced through more favourable perceptions of the difficulty in interacting with an innovation, its usefulness relative to existing products (should the product be perceived as mildly innovative), the positive and negative affect experienced towards it, the innovation's financial value, the extent of perceived negative consequences associated with the innovation, and its fit with one's lifestyle, needs, and wants. In turn, this positively stronger attitude will enhance the prospects of breaking from one's status quo with an innovation being purchased or trialed at the expense of resistance. Thus, considering its mediating and direct role, *Attitude* exhibits a complex and commanding influence in innovation acceptance, and is of substantial conceptual significance. This is a major composer of an individual's attitudinal assessment, but is accompanied by several other important constructs.

Credence:

In addition to the aforementioned empirical *Attitude* antecedent of *Negative Affect* and *Positive Affect*, acceptance of new or unfamiliar products (such as an innovation) is inherently characterized by risk. Thus, conceptually the employment of *Credence* (risk and uncertainty aggregate) into the supported theoretical frameworks for both mildly innovative and highly innovative products further positions this study away from traditional (non-innovative) adoption perspectives and towards the context of newness and unfamiliarity. Exploring the likelihood of negative consequence occurring, the discovery that positive assessments of *Credence* exert a notable influence on an individual's *Attitude* towards an

innovation in both mildly and highly innovative samples is of considerable value. As consumer resistance is likely to flourish in perceptions of high risk, the indirect influence of *Credence* in moving a consumer from resistance to trial, and trial to purchase is a positive contributor to breaking one from their status quo. This implies that risk reduction strategies conceptually play a key role in diminishing consumer resistance and enhancing acceptance of new product innovations, thus are salient in breaking from the status quo.

Perceive value for money:

Existing models of product adoption (let alone innovations) more often than not ignore a consumer's assessment of the financial value the product possesses. Logic warns this is a major deficiency, as whilst an innovation may be highly emotionally rewarding, its cognitive characteristics perceived favourably, and all the necessary social and personal assessments aligned to encourage adoption, if it is considered to be too expensive, who is going to buy it? With this in mind, the strong empirical support for *Perceived Value For Money* as an *Attitude* antecedent in both samples also offers valuable conceptual insight into innovation acceptance. As such is the first time the construct is employed in an extensive acceptance model (it has mostly been utilized as a sub-component of perceived value), the discovery that an innovation has to be perceived as offering financial value to positively enhance attitudes is pivotal. Extant traditional adoption models fail to account for such an influence, and in doing so, this research proves they are neglecting a highly important component of innovation acceptance. Employing a dimension of Sweeney and Soutar's (2001) *Perceived Value* measure, the discovery of the empirical relationship observed between *PVFM* and *Attitude* in both "mildly innovative" and "highly innovative" samples strongly support that deviations from a status quo of resistance are dependent on positive perceptions of financial value.

Complexity and relative advantage:

With their role in innovation diffusion initially discerned by Rogers (1983, 1995, 2003), *Complexity* and *Relative Advantage's* influence is revealed in this study as a likely, but inconclusive antecedent to *Attitude* assessments. Support for such relationships is widely established (see Taylor and Todd, 1995b) and Yang et al., 2012 for just a couple of examples), however in the innovation specific context of this study, such is not the case. *Complexity* findings in this study reveal that the degree of difficulty associated with interacting with both a mildly and highly innovative product do exert some, but not a

large reduction on a consumer's attitude towards that innovation. The findings related to *Relative Advantage* suggest that as a mildly innovative product is perceived to be more useful relative to substituting or existing products, small increases in the positivity and strength of attitudes will occur. However, such an influence is not observed as salient for highly innovative products. Conceptually such indicates that breaking from the status quo is influenced by but not dependent on an innovation being perceived favourably regarding *Complexity*, but only those perceived as mildly innovative are helped by perceptions of enhanced usefulness. Conceptually, the latter may be the more intriguing of these results as it suggests that once a product is perceived as more innovative, its enhanced utility is no longer salient in breaking from the status quo. This is an intriguing finding. Furthermore, these two findings provide conceptual support for the positioning of the *FACE* theoretical framework away from traditional models of "technology" or conventional product acceptance.

Image:

One would assume that the perceptions of those deemed important to an individual would influence their acceptance of an innovation. However, in exploring the personal value gained through the perceptions of others, *Image* findings of this study conclusively indicate that the culmination of perceptions of uniqueness, status, envy, and self-image associated with innovation usage, do not influence *Attitude* or *Acceptance* directly. Herein, from a conceptual perspective these perceptions are not found to be responsible for breaking a consumer from their status quo through innovation acceptance, and the value gained from interactions with others is not as influential as other cognitive and affective assessments in the acceptance of an innovation, be it mildly innovative or highly innovative.

Compatibility with usage:

Regarding an innovation's compatibility as a conceptual contributor to breaking from one's status quo, this research strongly proves that an innovation must fit with the needs, wants, and lifestyles of the adopter. This form of fit is represented through *Compatibility*, and alongside the powerful influence of affect, its ability to facilitate the acceptance of an innovation is one of the largest conceptual contributions of this research. While delineated in the context of innovation adoption by Rogers (2003), Schierz, Schilke and Wirtz (2010) acknowledge that researchers seldom explore compatibility. This study suggests such is a conceptual oversight, concluding that like Schierz Schierz, Schilke and

Wirtz's (2010) discovery, *Compatibility* has a substantial impact on acceptance intentions of both mildly and highly innovative products. Conceptually, the substantial influence of *Compatibility* is discovered to operate through both its direct effect on *Acceptance*, and its indirect effect through *Attitude*. Evidently, this unique conceptual influence is revealed as a powerful opponent to resistance, and an effective means to break the status quo and facilitate acceptance of an innovation.

Enablers (internal and external):

Perceived behavioural control:

Examining that which is proposed to enable breaking from the status quo, while its influence is not significant in the "mildly innovative" sample, *Perceived Behavioural Control* is evidenced to aid the *Acceptance* of a highly innovative product. This suggests that these perceptions of internal and external control become significantly influential only once a product is deemed highly innovative. Importantly, this unique conceptual influence is one that would not have been discovered had innovativeness been examined at a single level, thus the differing influence at two levels of innovativeness justifies the decision to broaden the perspective of innovation acceptance, adding to the conceptual value of this study. The construct's consistently strong inverse correlation with *Complexity* observed in both innovativeness samples reveals these two salient constructs oppose each other. Thus such a finding supports that when an individual experiences both internal and external control, perceptions of the difficulty in interacting with an innovation are low, and the likelihood of an innovation being accepted increases. Herein, support for *Perceived Behavioural Control* in this context of innovation acceptance authenticates this model as one tailored to the unique nuances of acceptance of innovations through this enabler of change.

Social influences:

As an enabler of breaking one from their status quo, this study examines an individual's perceptions of important others' reactions to innovation usage through the *Social Influences* measure. One could assume that the perceptions or pressures of those deemed important to an individual would influence their acceptance of an innovation, however, the absence of statistical support for the role of the socially oriented construct in both the "mildly innovative" and "highly innovative" samples suggests otherwise. This indicates that for such innovations, if people that are important to a consumer believe or expect

them to use it, this will not necessarily enable change. Whilst such does not indicate it will reinforce the status quo, it is an interesting conceptual finding nonetheless, and may be explained by the pre-adoption context of innovation acceptance in this study, and the unknown reactions of important others to such usage at this early stage. The last of the conceptual discoveries of the *FACE* model constructs, such a framework offers numerous new and valuable findings in this specific research context, justifying the conceptualization of this model through its illumination of what is required to break a consumer from their status quo in product acceptance.

c) *Perceived innovativeness:*

This study is the first of its kind to extensively conceptualize consumer acceptance of innovations, and is also the first research to successfully discern an individual's perceptions of a product into the hierarchy of "mildly innovative", and "highly innovative", as perceived by the respondent themselves. Through examining these levels of innovativeness, it is discovered the conceptual patrons of acceptance are somewhat different across the two groups. Examination across these two innovativeness levels not only reveals somewhat different conceptual compositions, but also supports that the experience of cognition and affect is generally different for individuals who perceive a product mildly innovative to those who perceive the same product as highly innovative. Such endorses the notion that the perception a consumer makes of a product's innovativeness does exert influence over other perceptions of that product's intrinsic and extrinsic characteristics, as well as perceptions of the individual themselves. Further supporting the somewhat distinct conceptualizations of acceptance at differing levels of perceived innovativeness, it is discovered that for products considered "mildly innovative" the experience of *Melancholy* emotions (such as *Depressed*, *Sad*, *Miserable*) is highly influential, whilst those of *Wonder* (*Amazed*, *Surprised*, *Astonished*) are not, as they only exert their influence when a respondent perceives a product to be highly innovative. These discoveries associated with the three theoretical frameworks of the perceived innovativeness hierarchy offer substantial conceptual value to this study whilst positioning its conceptual scope as both original and disruptive to traditional adoption frameworks.

Providing additional support for the impact of perceptions of innovativeness, it is observed that despite the products examined in these two samples being the same, statistically significant differences exist in the item scores of the following constructs across the two levels of innovativeness: *Positive Affect, Negative Affect, Relative Advantage, Social Influences, Social Capital, Perceived Value For Money,*

Compatibility, Innovativeness, Knowledge, Perceived Behavioural Control, Credence, and *Attitude*. This is a profound finding that supports the decision to view innovativeness at two levels. Of additional value is the confirmation that the *FACE* model is only a suitable theoretical framework when a consumer perceives the product to be innovative. Through examining the control sample of "conventional" products, a large distinction is observed in the conceptual explanation of what is required to break one from their status quo, with this model proven to not be suitable in explanation of non-innovative products.

d) Acceptance:

To dimensionalize how consumers break from their status quo at the introduction of a new product innovation, this research makes another sizeable conceptual contribution through the enhanced exploration of behavioural intentions. Evidently, this is the first study of its kind to directly examine a consumer's intentions to resist, trial, and purchase an innovation; not just assuming "adoption" is interpreted by consumers as continual use, or that low levels of "purchase intention" indicate high levels of resistance. Using the research of Kim and Kankanhalli (2009) as empirical impetus, this study explores what it takes to move a consumer from *Resistance* to *Trial*, and *Trial* to *Purchase*, thus adding substantial new conceptual insights to the literature. Intriguingly, in both samples, when respondents exhibit just average perceptions of the constructs salient in the supported theoretical models, their acceptance intentions are to trial the innovation. This indicates that for mildly and highly innovative products, there is generally a strong degree of interest when cognition and affect are suitably engaged. Additionally, it is discovered that when respondents perceive a product to be highly innovative as opposed to mildly, they exhibit much higher intentions to purchase, and much lower intentions to resist. The consequences of this to the status quo are substantial, suggesting higher perceived levels of innovativeness are highly influential in provoking acceptance and the diffusion of innovations.

In light of the aforementioned discoveries, this research makes profound conceptual contributions to academia through developing a theoretical framework specific to innovations that effectively conceptualizes breaking a consumer from their consumption status quo, across two levels of perceived innovativeness and in comparison to non-innovative, conventional products.

Methodological:

This research also provides many contributions to academia through its methodological investigation of consumer innovation acceptance. These key conceptual contributions are detailed as follows:

a) *Consumer Innovation Affect* (C.I.A.) scale development
b) Task type - utilitarian and hedonic innovations
c) Computation of *Credence* (risk / uncertainty*)* and *Attitude* aggregate scales
d) Enhanced ordinal assessment of *Acceptance* outcomes
e) Use of industry sourced product stimulus
f) Diversity of sample

a) *Consumer Innovation Affect (CIA) scale development:*

In the scale development phase of this research, the *C.I.A.* is scrupulously examined across three extensive samples (comprising of 316, 257, and 200 respondents) before its introduction into the main phase of this study in which it is successfully utilized and validated in the status quo breakage / innovation acceptance framework across two further samples (n = 353, n = 348). This extensive scrutiny confirms the efficacy of the scale whilst clearly defining where it applies to academia; a substantial methodological contribution in itself. In light of the deficient single and multi-item affect measures employed by most researchers when examining conventional adoption, the integration of an innovation acceptance-specific affective measure is of substantial academic significance. The enhanced capture (through 17 items occupying 6 basic emotion constructs) ensures that non innovative-specific or irrelevant emotions are neglected, thus minimizing potential framing effects, biases, or other contributors to common method variance. With such a composition in mind, it is suggested that the number of items employed (17) is an appropriate figure to allow respondents a concise yet conclusive delineation of their affective experiences. Thus, the focused and refined nature of *C.I.A.* evidences itself through the valid, reliable, and unidimensional composition of each component of the scale across all phases of the research.

Regarding the methodological structure of the *C.I.A.*, it is suggested that its eight-point continuum ratio-type scale items offer enhanced competency in accurately capturing these unique affective appraisals of consumers. As affect is captured in the *C.I.A.* not as a semantic differential or bi-polar

Likert scale, but uni-directionally indicating the intensity with which that emotion is experienced (starting from the point of no experience "0"), respondents can clearly evaluate firstly, if they do experience that emotion, and secondly, the intensity with which it is experienced. As seven item points are available (if the emotion is experienced), consumers can indicate with high accuracy the intensity of the emotion and are not limited by narrow score ranges, or bi-valenced responses. As this research endorses that there is no such thing as a direct antonym to something as complex and subjective as an emotion, it is further believed such a scale composition is suitable. Finally, respondents are reminded (in the item description) that a score of "4" is not a neutral response or suggestive that the emotion is not experienced, but rather the experience of that emotion in quite strong intensity. This reminder further ensures that respondents do not confuse the scale points, and are not over-indicating the intensity with which that emotion is experienced. Such ensures the empirical results drawn from use of the *C.I.A.* are as accurate and valid as possible.

As the *C.I.A.* scale explores both positive and negative affect, its bi-valenced higher-order hierarchical structure refines and specifies existing hierarchical affective measures (such as the *H.C.E.*) to the unique area of innovation diffusion research. Having these higher-order constructs (*Positive Affect* and *Negative Affect*) facilitates less complex empirical application as they can be utilized in the theoretical model as empirical antecedents. This reduces the likelihood of issues with identification and power. Thus, application of the affect scale into the final supported theoretical model is a key contributor to the enhanced empirical ability of this framework to adequately assess innovation acceptance far beyond traditional TAM / TPB models. Susequently, not only does use of this scale ensure conceptually superior examination into innovation acceptance, but also methodologically superior. In its successful application to both the "mildly innovative" and "highly innovative" samples in this research, the use of this multi-dimensional affect scale will help in paving the way for future scholarship into the influence of affect in consumer decision making, and specifically, the general acceptance of innovations.

b) *Task type - utilitarian and hedonic innovations:*

As the nature of the product task type (i.e. utilitarian or hedonic) is likely to influence a consumer's perception of the intrinsic and extrinsic characteristics of an innovation (a discovery found by Nasco et al., 2008), this study manipulates the likely perceptions of task so such influence is not problematic. This is undertaken by exposing respondents to products specifically selected on the nature of the task

they perform, with an equivalent number of respondents exposed to each task type. Three products that are primarily utilitarian and three that are primarily hedonic in nature are utilized (with respondents only exposed to one product), with such task type promoted through the employed industry stimulus. As it is conclusively proven that respondents are viewing the task type of the products as intended in the research design (see Tables 32 and 33), it can safely be concluded the findings of this study relating to perceptions of the intrinsic and extrinsic characteristics of the products examined are controlled for and not variably influenced by task type. Herein, the procedure of manipulating the task type of the subject products so to minimize any potential biasing or imbalanced responses offers methodological value to innovation acceptance research.

c) *Aggregate computation:*

The computation of aggregate scales to measure risk perceptions relative to the associated degree of uncertainty and attitude evaluations relative to the strength of which the attitude is held provides substantial methodological value to researchers. Such measures capture data relative to these constructs with a high level of conceptual and empirical precision. The successful application of such aggregate measures in the three theoretical frameworks reveals two precise psychometric scales future studies can utilize and build upon to enhance the assessment of not only innovation acceptance, but other areas of conceptual examination. Such aggregation is the first of its kind for this research context, thus providing considerable value to methodologists seeking to enhance the capture of credence and attitudinal assessments.

Credence aggregate:

As perceptions of the likelihood of negative consequences occurring are characterized by the (un)certainty with which such perceptions are held (see Kim and Kankanhalli, 2009; Gao, Leicheter and Wei, 2012;), forming an aggregate measure from both risk perceptions and the certainty with which these specific perceptions (*Credence*) are held enhances the empirical application of the construct. As risk in itself is believed to be a key influencer in resistance behaviour (see Kleijnen, Lee and Wertzels, 2009), the importance of accurately capturing such a construct in the context of innovation acceptance is particularly pertinent. Supporting such, its role in status quo breakage is supported in this research for both mildly innovative and highly innovative products. Thus, in laymen's terms, a perception of low risk held with strong certainty (high *Credence*) is supported in this research

as more influential in innovation acceptance than a low perception of risk held with strong uncertainty (low *Credence*). Herein, simply measuring and modelling the two constructs independently is not adequate, thus the symbiotic, unique interaction that characterizes their relationship must be methodologically considered. In light of this, the strong empirical support for the *Credence* aggregate construct through both CFA and structural examination (as an exogenous variable exerting substantial influence on respondents' attitudes) enhances the methodological rigour of this study.

Attitude aggregate:

Identifying methodological gaps in empirical measurement, it is noted that that the strength with which an attitude is held is conceptually salient (see Petty et al., 1995; 1997; Kim, Chun and Song; 2009). Consistent with such, an increasingly strongly held positive attitude is discovered in this study to improve acceptance intentions of not only conventional products, but those products considered mildly and highly innovative. Herein, it is concluded that only considering the valence of the attitude whilst neglecting the strength with which it is held is a methodological shortcoming of many studies. Thus, support for the empirical application of this aggregate construct (through both CFA and structural modelling) provides further methodological value to this study as respondents can more accurately disclose to researchers the nuances of their attitude towards an innovation. As *Attitude* is discovered as a critical mediating variable in innovation acceptance, it is essential the construct is captured as accurately and effectively as possible; failure to do so may inhibit understanding of innovation acceptance. The aggregate measured utilized in this research (possibly the first of its kind) is believed to achieve just that, thus adding further methodological value to this study.

d) *Enhanced ordinal assessment of Acceptance outcomes:*

Through delineating the behavioural intention construct (traditionally considered "adoption") into resistance, trial, and purchase, this research greatly enhances the capture of this most important behavioural outcome. Using this ordinal construct (as opposed to traditional continuous interval measures) provides not only semantically clearer options that avoid confusion, but enhanced conceptualization of consumers' intentions to accept new product innovations. Through including the option to consciously decide to not purchase, nor trial the subject product (*Resistance)*, the burgeoning (see Cenfetelli, 2004; Bhattacherjee and Hikmet, 2007; Van Offenbeek, Boonstra and Seo, 2012) and conceptually fruitful area of consumer resistance research is explored in this study; such would not be

possible through conventional behavioural outcome measures. Furthermore, this triad of behavioural outcomes also allowed for the discovery of the high likelihood of *Trial* intentions for innovations, particularly those considered highly innovative. Such is a nuanced and original finding uniquely important to innovation acceptance, and again, would be overlooked had the behavioural intentions measure not been enhanced. The results of this study specific to *Purchase* are also enriched as respondents are best positioned to only indicate an intention to purchase when this is the actual intention of respondents, reducing confusion between "use", "adopt", "purchase" or any other behavioural outcomes commonly measured by methodologists that may have been incorrectly discerned by researchers as purchase intention. Additionally, such a methodology unequivocally prevents researchers from incorrectly mistaking low intentions to purchase as a high intention to "resist" a subject product. As it is more common that respondents will not feel comfortable immediately purchasing, or for that matter resisting an innovation upon initial exposure, the triad of behavioural outcomes examined best positions this study to methodologically assess innovation acceptance. Evidently, the discrimination of and analysis of these three distinct behavioural outcomes provides substantial methodological value to not only innovation acceptance research, but "adoption" research in general.

e) *Use of industry sourced product stimulus:*

As detailed in the "Methodology" chapter of this study, this research employs product stimuli that rather than being constructed by the research team, they are sourced directly from industry. Hence, respondents are exposed to products in this study in a manner equivalent to how they will in actual consumption situations, thus maximizing the study's ecological validity and replicability. As the stimuli employed are literally what is used in the industry, the challenge to researchers in designing and executing appropriate research stimuli is removed. This is particularly valuable, as the task of developing research stimuli may not fall within the researcher's expertise and may be particularly demanding of resources, thus the final product created may not coincide with industry output. Such could result in reduction of the validity and realism of research findings and any associated recommendations; a situation that should be avoided at all costs. Herein, the methodological procedure of sourcing stimuli from industry ensures the findings of this study are not likely to be biased by dissimilar research design or execution to that of industry, thus reducing the challenges facing any scientific experiment in replicating real world scenario, whilst enhancing the study's methodological rigour.

f) Diversity of sample:

Unlike many consumer adoption studies, this research did not procure a predominantly student sample. While this research does not brand studies that use such samples as inferior or deficient (Schepers and Wetzels, 2007; p. 100 do however identify that "using a student sample seriously affected the relationships"), the diversity observed in the sample, particularly with regards to key adoption inhibitors of age and income, is a valuable contribution to the methodological makeup of this study. Employing a sample with wide demographic breadth reassures that the results observed are representative of typical, organic consumer groups, and thus not likely to be biased by any defining characteristic of respondents.

Practitioners:

Having detailed the conceptual and methodological contributions this research makes to academia, its findings would be sold short if the value it offers to industry practitioners were not detailed. Thus, as the status quo is faced with newness, unfamiliarity, and change in all industries, the findings of this research offer considerable value to marketers and management of private enterprise, government bodies, cultural and educational institutions, small business operators, NGOs, and many more. When considered, this research will help ensure that the correct decisions are made in engaging with consumers to break from their status quo and "accept" innovations. The key findings most essential for practitioners in facilitating diffusion of innovations are as follows:

a) Innovations and conventional products cannot be treated the same

b) Breaking the status quo is different across innovativeness levels

c) Consumer segmentation is essential

d) The right affect must be enhanced

e) Consumer acceptance is influenced by many variables

f) Acceptance intentions rely upon trial

a) *Innovations and conventional products cannot be treated the same:*

The results of this study suggest to practitioners that they should not treat innovations the same as they would treat conventional products. This research reveals a range of constructs that exert strong influence on consumer acceptance in this context. Namely, the enhanced importance of an innovation's fit with a consumer's needs, wants, and lifestyles; the likelihood of negative consequences occurring from adopting an innovation and the certainty with which this is held; and the individual's own innovativeness behaviour specific to the subject product category. In breaking a consumer from their status quo to hopefully ignore existing and familiar products and purchase an innovation, marketing to consumers in a manner identical to how one would a conventional product is not acceptable and must consider the aforementioned factors. The implications of such findings have great impact on the promotional and pricing elements of a marketing mix, emphasizing the requirement of a unique perspective for those products that deviate from the conventional. Strategies include reinforcing perceptions of an innovation's low risk and fit with a consumer's needs, wants and lifestyle, as well as a perception of external and internal control for products considered more innovative through

promotions such as paid and owned media, particularly content marketing. Furthermore, positioning the organization as a disrupter or agent of change may enhance the perception consumers' have of the products actual level of innovativeness.

b) *Breaking the status quo is different across innovativeness levels:*

In addition to the discovery that practitioners must manage and market innovations differently to conventional products, the findings of this study further suggest that what influences the acceptance of a mildly innovative product, whilst similar, is not completely the same as what influences the acceptance of a highly innovative product. Herein, practitioners must acknowledge that the perceptions of a product's innovativeness, as held by consumers, will influence their acceptance intentions, thus the development of the marketing mix for differing levels of innovativeness should be unique. As revealed in item descriptives, perceptions of the same product are generally significantly more favourable for products considered to be highly innovative as opposed to those considered mildly innovative. This indicates that practitioners should apply considerable effort towards communicating and promoting an enhanced perception of a product's newness and difference of characteristics to existing products, as with such perceptions, the cognitive and affective evaluations of the product will be improved. However, in light of the strong correlation between complexity and behavioural control, whilst an innovation should be promoted as highly innovative, a stronger focus should be made on ensuring consumers are comfortable and feel capable and in control in interacting with products that are perceived this way. Such may be enhanced through opportunities to trial an innovation (in person or digitally), extensive background information, and promoting recognition of how such innovations will assimilate into the lifestyles and the existing behaviours of consumers.

c) *Consumer segmentation is essential:*

Support for *Innovativeness*' influence in both innovative categories but not in conventional products indicates that those consumers who possess familiarity with a product domain (as reflected through innovativeness) are likely to comprise "innovators" or "early adopters", and should be the targets of acceptance strategies in an innovation's early stages of its lifecycle. These consumers perceive themselves to be more actively experimenting in the product domain relative to most consumers, thus should be targeted as facilitators of diffusion through to other consumer groups. By breaking the initial inertia, these consumers may be utilized to communicate product experiences and benefits through

371

consumer generated media, as well as transmitting organic word of mouth through mediums such as social networking. Providing opportunities for these potential "brand advocates" to engage with an innovation is likely to be successful, thus such may come through exclusive sneak previews, social media campaigns, or perhaps even guerrilla marketing. Practitioners may catalyze such perceptions by promoting familiarity and connecting consumers with similar products prior to the launch of new innovations. Such a technique may convince consumers they are more "innovative" than they previously thought, or simply remind consumers of their past experiences with such products, enhancing their confidence and likelihood of acceptance as a result. Diffusion of innovations can be helped by the spreading of word-of-mouth by these "early adopters" to reassure fellow consumers that said innovations are in fact more simple to interact with, and advantageous to adopt, whilst appearing less risky with greater certainty. However, as the direct influence of individuals important to a consumer is not proven salient in this study, amplified word-of-mouth (through sources not necessarily salient to the consumer) by practitioners through various message sources may prove effective in facilitating early diffusion. Such may be successful through mediums "innovators" or "early adopters" are likely to immerse themselves in, such as product launches, brand communities, online forums, or enthusiast groups.

d) *The right affect must be enhanced:*

Discoveries related to affect suggest that first and foremost, it is hugely influential in consumer decision-making. Not only do a wide range of emotions interact to influence acceptance of innovations, but such affect guides consumer attitudes with more power than cognitive evaluations examined. Considering this, practitioners must ensure communications with consumers regarding innovations (such as advertising, product demonstrations, word-of-mouth, digital content, etc.) have a strong focus on enhancing the experience of positive affect such as emotions related to joy and wonder, whilst reducing the experience of negative affect like cynicism, apathy, melancholy, and trepidation. Of such affect, it is particularly important that the experience of apathy emotions (such as unexcited, bored, and unimpressed) is reduced if an innovation is to be successful. In the contemporary marketplace, such can be achieved through interesting and engaging digital content, social media promotions, and consistent multiplatform integration of marketing messages. Building on the difference in consumer perceptions of mildly and highly innovative products; for the latter, the importance of wonder emotions (surprise, amazement, and astonishment) becomes salient and should be maximized, as a highly innovative product needs to wow consumers and exceed expectations. As practitioners face a difficult

challenge in facilitating the initial adoption of innovations, let alone their continual diffusion, affect is revealed as a vital tool in assisting such acceptance. Herein, this research conclusively reveals that in order to break a consumer from their status quo of resisting an innovation to further stages of acceptance, the right affect must be experienced by consumers, and in a relatively strong intensity. This focus on eliciting the right affect should be communicated throughout the entire marketing mix, and should remain paramount for consumers in the pre-adoption stages of innovation diffusion.

e) Consumer acceptance is influenced by many variables:

Researching the unique context of status quo destruction through new product acceptance has revealed findings of substantial value to practitioners. Beyond the implications for segmentation associated with the aforementioned discussion of *Innovativeness*, the following is discussed:

Compatibility:

Innovations are by nature, new to the marketplace. Herein, this study indicates that for the status quo of resistance to be avoided by consumers, practitioners should ensure that at the forefront of their marketing mix is the development and promotion of innovations that consumers can empathize with and picture themselves using. This is not to say that each consumer must possess a strong need or want for such products prior to exposure though, a successful strategy may be for practitioners to sell the lifestyle that comes with such an innovation, or its ability to satisfy needs and wants that consumers may not be aware they had. Successful practice may include promoting desirable everyday people using innovations, employing problem / solution appeals, or showing how an innovation fits into one's life. Thus, just because an innovation possesses a sharp difference of characteristics to existing products, does not mean practitioners have to sell an image that fits within the box of consumer's current lifestyles and beliefs; the evolution or improvement of the consumer's life may be just as successful.

Perceived behavioural control:

The strong negative inter-relation between perceptions of complexity and the adequacy of a respondent's internal and external support associated with an innovation should encourage practitioners to enhance communication of the level of support surrounding an innovation, and its

simplicity in use. As an enabler of status quo destruction, such may occur through promoting internal perceptions of the simplicity and comfort of the product, or through communicating external support networks such as peer networks, comprehensive owners' manuals, and online communities. Furthermore, positive experiences of such behavioural control should be enhanced as a consumer perceives an innovation to be more innovative in nature. Thus, through perceived behavioural control's inverse link with complexity, improving such perceptions is likely to provide practitioners substantial value in enabling acceptance, as consumers feel more confident and supported in using that innovation.

Attitude:

Consumer's attitudinal evaluations are proven in this study to be both complex and highly influential. Nonetheless, the integral mediating influence of such variables tells practitioners that such assessments cannot be ignored. Attitudes are not the strongest influencer of acceptance, but do play a significant role in their own right whilst enhancing the effects of other perceptions. Evidently, eliciting stronger, more favourable attitudes will encourage breaking from an existing status quo through acceptance of innovations. As attitudes are enduring overall evaluations, practitioners may achieve this through extensive branding exercises promoting the likeability of the brand, creating memorable, long lasting positive experiences within customer contact points, stimulating enjoyable retail experiences, and engaging digital content across social media platforms and websites. Achieving such may result in enhancing the experience of the right affect (as discussed above) as well as more favourable assessments of the perceptions discussed below.

Antecedents to attitude:

Consumers are exposed to a plethora of new and unfamiliar products on a regular basis, however financial restrictions ensure one cannot buy them all. As consumers are influenced by extrinsic characteristics of a product, this research reveals that new product innovations should be priced in a manner that is considered reasonably affordable by consumers. Herein, some opposition may exist for the common tactic of adopting a price skimming approach (pricing innovations highly and above existing market offerings) when innovations reside at the introduction stage of their product life cycle. A more effective strategy to break the status quo may involve promoting an innovation's affordability, money saving ability, or economy, to those consumers who are not high on disposable income and have not exhibited highly innovative behaviour previously. Price skimming approaches may still

remain successful, but perhaps through premium offerings or limited editions targeted at wealthy consumers early in an innovation's diffusion. Thus, whilst prices may be high in the early stages of an innovation's commercialization as organizations attempt to recoup large R&D costs, it is essential that perceptions of the innovations quality correspond with perceptions of maximum value for money.

The positive, if a little moderate empirical support for relative advantage and perceived complexity of mildly innovative products allocates practitioners the unique challenge of convincing consumers that new product innovations offer more usefulness than existing products, but in a way that is not too perplexing or difficult for consumers to operate. These concerns of relative advantage are somewhat relaxed as innovations become highly innovative though. More influentially, practitioners are faced with the responsibility of assuring consumers, with relative certainty that new product innovations are not likely to result in negative consequences despite their newness and unfamiliarity. Results reveal attitudes are strengthened and more positive in the event of positive *Credence* perceptions, thus practitioners should seek to promote the ability of an innovation to perform as intended and in a convenient manner as a means to enhance the strength and positivity of attitudes. To maximize the favourability of such perceptions, practitioners may look to target early adopters of similar products or those consumers who are highly involved in the subject product category. Due to their familiarity with similar products, such consumers are likely to not only see the advantage in innovations, but also perceive them as less difficult to interact with, and less risky.

f) *Acceptance intentions rely upon trial:*

As this study explores an enhanced perspective of consumer's behavioural intentions for innovative products, not only is it empirically superior, but the value afforded to practitioners is also increased. By examining this triad of acceptance, the findings of this study reveal to practitioners what it takes to move a consumer's behavioural intentions from resistance to trial, and trial to purchase. This is hugely important, as traditional behavioural intentions examined in academia generally only explore one behavioural outcome, which in many cases is explored through "adoption" or "purchase", and thus the movements through these adoption stages cannot be forecast. Through examining such, this study discovers that of all the acceptance intentions, trial is the option respondents most commonly indicate. No innovation study has examined this outcome amongst resistance and purchase alternatives, thus such is a profound insight for practitioners. This indicates to practitioners that when consumers encounter a new product they consider innovative, they often do intend to further research or interact

with the product and have not conclusively decided to end their adoption potential (as is characterized by resistance). Similarly, consumers are also rarely prepared to purchase innovations upon this initial exposure. Herein, whilst practitioners should acknowledge that acceptance intentions become more favourable as an innovation is perceived as more innovative, such findings indubitably reveal that trial of innovations cannot be overlooked. As this concept includes not only future physical interaction, but also further research before a decision is made, opportunities for continual exposure or offers to interact with an innovation must be provided to consumers. Steenkamp and Gielens (2003) propose the effects of personal innovativeness on actual trial behaviour is stronger where purchases are made unplanned, or without intention; thus impulse in nature. It is here consumers experience great difficulty in resisting impulse buying urges following trial opportunities (Rook 1987), thus one may assume highly innovative consumers to possess a stronger intention to purchase an innovation, post-trial. With this in mind, in the contemporary marketplace, the tactics of re-marketing, digital advertising, viral or social diffusion, and direct or data driven contact are likely to be effective in facilitating trial, particularly amongst highly innovative consumers, and status quo outcomes of resistance are most likely to be surpassed.

Limitations and future research:

By exploring a clearly defined research problem, research is best positioned to provide clearly defined solutions. Such clarity is inherently plagued by limitations though, and like any study, the scope of this research is limited so that its execution is both practical and focused with results specified to the distinct context of status quo destruction through consumer acceptance of innovations. Herein, such limitations offer numerous directions for future research contributions through incremental progression of the conceptual and methodological examination of consumer innovation acceptance; these are discussed as follows.

Conceptual limitations and future research:

Within such limitations, the conceptual scope of this study is naturally limited. These limitations provide opportunity to further explore the theoretical framework of innovation acceptance, while potentially uncovering new insights into the nuances of such acceptance; further illuminating the salient dynamics of this often neglected or mis-specified area of consumer behaviour. These conceptual opportunities include:

a) Consumer innovation affect
b) Consumer attitudes
c) Social drivers
d) Behavioural intentions
e) Constructs not supported
f) Exploring additional constructs
g) Other directions

a) *Consumer innovation affect:*

This research developed an affective measure specifically positioned to capture affective appraisals of innovations. As the sample collected is non-adopters of the innovation that have not used or purchased the product before, of which exposure to the innovation is likely to be their first, this scale is limited in its conceptual breadth. One would anticipate emotions such as those related to *Trepidation*, *Cynicism*, and *Wonder* are not likely to be influential in a consumer's perceptions of an innovation

377

once they have familiarized themselves with it, or used it many times. Furthermore, if these emotions, or others of the *C.I.A.* are experienced, it is anticipated such affect will likely be weaker in intensity when a member of the late majority or non-adopting laggard encounters such innovations for example. Thus, the empirical composition of this scale is likely to only be applicable to pre-adoption appraisals of innovations. Having said that, considering the high rates of innovation resistance and failure of new startups, such is likely to be the most important period of innovation adoption practitioners will strive to understand. In light of this limitation, and as imposed by Sweeney and Soutar (2001, p. 217), "Whether the resulting scale will apply equally in other product contexts cannot be stated". Resultantly, future research should examine the affective appraisals of consumers of innovative products at various stages of the adoption curve, with the *C.I.A.* acting as a suitably solid foundation to build scholarship upon.

b) *Consumer attitudes:*

While the conceptual construct of *Attitude* is enhanced in this study to account for the strength with which this attitude is held, the construct is still in itself, limited. As discussed, this research examines strength, but does not consider other potentially salient variables such as attitude extremity (Wegener et al., 1995), attitude accessibility (Fazio, 1986), and persistency (Schwartz, 1978). As proposed by Kim, Chun and Song (2009), examining attitudes longitudinally with a particular focus on changing strength and its influence on focal constructs could enhance the value of this complex variable's role in consumer innovation acceptance.

c) *Social drivers:*

The constructs of *Social Influences* and *Image* are discovered in this research to not exert any significant influence in acceptance for both mildly and highly innovative products. However, an incidental limitation may have congealed as consumers perceptions of these two constructs for innovations are low, and in disagreement with their existence (*Social Influences*: mildly innovative mean = 2.713, highly innovative mean = 3.665; *Image*: mildly innovative mean = 3.101, highly innovative mean = 3.782). Herein, perhaps these constructs are not having a significant influence because of the low social nature of the products, their generally private consumption, or respondent's lack of susceptibility to the normative or informational influence of others. In discovering that the influence of social influences weakened for users as opposed to potential adopters, Yang et al. (2012)

offer the explanation that public usage of technology will heighten the salience of social membership and status perceptions. Evidently, manipulation of these variables to be considered in a more public situation, or the pursuit of samples or stimuli more enforcing of such social variables may reveal some intriguing insights.

d) Behavioural intentions:

The first key conceptual limitation to this research lies in the hypothetical behavioural outcome of *intentions* to accept an innovation (as well as conventional products); a limitation identified by many including Kim, Chun and Song (2009), and Yang et al. (2012). Whilst direct support is found for the connection between actual behaviour and intentions (see "Hypotheses Development" chapter), it cannot be ignored that the results of this study are related to theoretical resistance, trial, or purchase, not the actual act of doing such. However, as this study is simulating pre-adoption when a consumer is exposed to a product for the first time, such may not be so troublesome. As the findings of this research reveal that overwhelmingly respondents seek further opportunity to interact with or research the products (i.e. trial), exploring behavioural intentions is not such a conceptual deficiency, as consumers are rarely prepared to act (through resistance or purchase) upon first exposure; an assertion supported through the results of this study. In support of such nuance, Yang et al. (2012, p. 139) notes employing behavioural intentions "should not undermine our results because there is substantial empirical support for the causal association between intention and behavior". However, following their recommendations, actual usage behaviour, which in this context could be expanded to include resistance and trial, could be examined in future scholarship.

e) Constructs not supported:

As is likely in any theoretical framework that examines the significance of a range of variables' influence, this study discovered that many constructs examined are not exhibiting considerable influence in the acceptance of mildly or highly innovative products. This is not to say alternative solutions could not possibly exist, however in this study, variables such as *Knowledge*, *Relative Advantage*, *Perceived Behavioural Control*, various *Risk* components, as well as the two aforementioned social constructs, are discovered to not be influential for one or both types of innovative products. Examining such presents the opportunity for this theoretical model to be reassessed amongst a new sample, with new innovations, or under specifically manipulated conditions

to determine if the conceptual impact of these constructs becomes salient. Furthermore, examining the constructs incorporated into this research with consumers who have purchased or trialed the innovation before could also reveal a distinct conceptual profile.

f) *Exploring additional constructs:*

Beyond the constructs examined in this study, new areas of conceptual significance may be scrutinized to reveal an improved conceptual understanding on innovation acceptance. As just one area, Yi, Fielder and Park (2006) suggest various other innovation characteristics may be potentially important in innovation adoption, these include Roger's (1995, 2003) constructs of *Trialability* and *Observability* that were delimited from this research. Various characteristics of the individual such as involvement with the product category or shopping experience, psychographic profiles, purchase history, considerations of mood states and levels of emotional expressiveness, status or uniqueness-seeking behaviour, etc. could also be addressed. Additionally, examining the varying mediating or moderating influences that the constructs may exert in innovation acceptance could also prove incisive.

g) *Other directions:*

Removed from any limitations of this research, a number of other areas of future research attention are discovered. Firstly, in light of complexity's role in innovation acceptance, as perceptions are quite low in the two samples (item mean: mildly innovative = 2.131, highly innovative = 1.994), highly complex innovations may be examined to further elucidate the construct's influence. This influence may also be compared to occasions where consumers are given the opportunity to interact with an innovation, or through word of mouth to determine if its influence is distinct to that perceived through video stimuli. Secondly, whilst the financial value of innovations is discovered to be very important, exploration of the different price points at which financial value has different influences on attitude (i.e. high, neutral, negative) should be explored. There may be a limit to the price industry can charge for an innovation, with this limit likely to relate to what is considered affordable or "offering value" to consumers. As what is considered "financial value" is likely to be different for each consumer and at different stages of the adoption curve, further research is required to delineate such information, and to do so at different levels of perceived innovativeness. Thirdly, employing the newly developed *C.I.A.,* affect is revealed to be the largest influencer over an individual's attitude towards an innovative product. With this in mind, further research may explore these emotions in innovative service context,

non-innovative product context, or even the adoption of ideas and ideologies (i.e. political, corporate, team, or institutional).

In light of compatibility's influence in the formation of attitudes, future research may explore specifically which needs, wants or lifestyles are more salient in acceptance of various innovations. Additional research may attempt to ascertain the point in innovativeness at which compatibility is both at its strongest, and at which it exerts no influence. It may also be fruitful to explore characteristics of consumers who do not require compatibility to accept an innovation, with exploratory buying behaviour, susceptibility to interpersonal influence, and need for uniqueness valid candidates for early attention. Additionally, for some consumers perceptions of innovativeness may be so dominant that a product does not need to fit with a consumer's needs, wants, and lifestyles to be adopted; this could be examined. As this study discerns very specific risk perceptions salient in innovation acceptance, future scholarship should seek to validate these perceptions, or enhance the forms of risk assessed. Additionally, the levels of risk associated with innovations examined may be manipulated to determine the power of risk perceptions, whilst the risk types of financial, social, or physical may be further explored to determine if they are salient under different contexts. Beyond these areas of conceptual relevance, further research may compare the perceptions of innovations at different levels of consumer's innovativeness, particularly the tendencies of consumers to trial or purchase at different levels of the construct. Herein, the diffusion rates of innovative consumers, specifically "innovators" and "early adopters", may be explored, whilst examining the construct's relationship with other personality traits. Finally, further scholarship may conclusively determine the combination of antecedent variables that discern a consumer a resister, a trailer, or a purchaser, revealing the level of each variable required to break consumers from their existing status quo, and move them between these *Acceptance* groups.

Methodological limitations and future research:

Conceptual analysis of status quo breakage through innovation acceptance is not the only limitation imposed through this study. Herein, how the research is conducted with regards to its experimental design and context, sample, and research instrument is also limited in order to ensure the findings of this research remain consistent, unbiased, and focused. A number of these methodological limitations and the opportunities they present for future scholarship are now discussed. These include:

a) Beyond pre-adoption
b) Limited product types
c) Beyond products
d) Stimulus
e) Influence of the brand
f) *C.I.A.* methodology
g) Quantitative research methodology
h) Cultural Limitations

a) *Beyond pre-adoption:*

The population under examination in this research is limited to exclusively individuals who have not purchased or used the product before (non-adopters). In light of such a notion, this study limits itself to purely pre-adoption consumer behaviour. Such was undertaken so that findings of this study are concentrated to a specific research area, allowing conclusions to be drawn to a specific type of consumption whilst avoiding potential biases and varying influences in results from respondents' differing levels of product experience. Evidently, Kim, Mirusmonov, and Lee (2010) note that not all individuals within a social system adopt innovations simultaneously though, thus no judgments are made of status quo breakage or innovation acceptance of consumers who have trialed or purchased the product before. Triandis (1971) acknowledges that repeated previous behaviour does dictate current behaviour independently of any rational assessments, thus one can assume that experience with an innovation will exert some sway over future acceptance behaviour. However, this is again a quandary for future scholarship. Such is a pertinent area of research unexplored, particularly that related to trial, as assessing what drives acceptance may be distinctly different when a consumer has product experience through trial, compared to the unfamiliar situation of pre-adoption. Furthermore, research

could examine status quo breakage of consumers at later stages of the innovation diffusion curve, with a focus on both the early and late majority, and laggards. Furthermore, repeat purchase behaviour or purchase behaviour post-trial may be examined through longitudinal research.

b) *Limited product types:*

As the context of this research is directed towards innovations, the products examined are inherently new to the market. However, in examining innovations, this study had to be limited to several product types. Whilst the affective scale development phase did examine others, this research limits its methodological analysis of innovations to four products falling under the categories of convenience products, homeware and household goods, fashion and technology goods, and smartphone / tablet applications. Imposing such restrictions is essential so acceptable analysis can be conducted without the laborious demands of collecting countless samples. Consequently though (as suggested by Chao, Reid and Mavondo, 2012; p. 216), "the results of this study within this particular product category may only provide a general overview" of acceptance behaviour; a restriction that applies to each of the product types examined. In light of this, further research should accept the baton and continue on this research, examining status quo breakage amongst innovations from a diverse range of product types as an attempt to reinforce or challenge the findings of this study.

c) *Beyond products:*

This research limits its examination of status quo breakage through innovation acceptance to exclusively products, excluding itself from analysis of innovative services. Such a decision was made, as communicating the costs and benefits of services (that are inherently possessive of credence qualities, and thus difficult to assess, even after use) is a difficult task, particularly considering their intangibility and generally unattained search qualities. Furthermore, suitable industry examples of concise video stimuli were not discovered, and the majority of those discovered appear developed for business-to-business or organizational application, not consumer focused application. Herein, during the early phases of this research, it was determined that focusing on purely products would enhance the validity and generalizability of this study; a decision still endorsed in this final stage of research. However, this does not mean such cannot be achieved. A valuable contribution of future researchers would to be ascertain the conceptual composition of status quo breakers for innovative services. Current trends in the industry that nominate themselves for such attention would be digital financial

or information technology services, digitalized government and professional services, and any service designed to improve environmental sustainability and social living standards.

d) *Stimulus:*

Having employed product videos sourced directly from industry as the stimuli to inform respondents' of the subject innovations, this study is limited in that a number of alternative customer contact points are not utilized in respondent's evaluations of the product. Whilst the stimuli used are considered realistic of organic and real world scenarios in which consumers are exposed to a new innovation through digital dissemination (such as social media sharing, website promotion, or content marketing), the reactions of consumers to other stimuli types may be different. Evidently, future research may seek to examine consumer's responses to industry stimuli such as print or online adverts, actual trial with the product (see Kulivwat et al, 2007; Nasco et al., 2008), early development concept or beta testing, or laboratory environment interactions.

e) *Influence of the brand:*

As this study employed industry examples as research stimuli, the brand of the innovation in question is inevitably visible as intended through its original design. Whilst the stimuli have been edited to remove any superfluous or irrelevant material, the natural flow could not be upset by reducing major portions of the stimuli that discuss or display the brand. Herein, the inclusion (or even exclusion, depending on your perspective) of the brand is an inevitable limitation of this research. Considering this actuality though, the brands of the products are not likely to be familiar to respondents or allow them to be confused for other recognizable brands. Furthermore, none of the stimuli employed focus on the brand or could be considered a branding promotion, hence branding is expected to exert minimal bias, and may help enhance the credibility of the innovation. Herein, future scholarship may seek to omit any branding exposures in research stimuli altogether, or if retained, may manipulate the amount and message types of the brand examined. Such study may also examine the effects of branding at various stages of the adoption curve. Considering constructs such as risk and affect (particularly negative ones) are identified as salient in the acceptance of innovations (see results), it is proposed that for highly innovative products that are not of a recognized brand, branding's impact will be minimal, whilst at later stages of the adoption curve where the characteristics of the innovation, including its brand, are more widely diffused and identifiable, branding's influence may be salient. Alternatively,

for innovations of prominent brands, it is likely favourable perceptions of the brand are highly influential in the pre-adoption and early stages of acceptance, with their effects less powerful as the innovations proceed through the adoption curve; future research should examine such.

f) C.I.A. methodology:

The affect items comprising the development of the *C.I.A.* scale are limited in that they are based upon a video product stimulus methodology. This is a genuinely realistic emulation of real-life consumption as such exposure is likely to be typical of what organically occurs in the industry when consumers first experience an innovation through digital promotions, viral media, or amplified word of mouth. Nonetheless though, such is unlikely to elicit certain affect. For example, emotions unlikely to be experienced through such a pre-adoption methodology include angry, frustrated, or irritated. These emotions are very likely to occur during product trial or even for a period after purchase, but as they are likely to occur when a product is considered to be too difficult to interact with, too complex in its operation, or demanding of considerable learning or effort to switch to using it, a consumer is unlikely to become frustrated, angry or irritated through viewing a product stimulus. Herein, the *C.I.A.* scale is limited in its development through a pre-adoption exposure methodology.

g) Quantitative research methodology:

Whilst it is particularly effective in causal research, the theoretical frameworks developed in this research to explain status quo breakage in consumer acceptance of innovation are based on quantitative findings, not the richer and more in-depth findings qualitative research can deliver. In light of this, mitigating factors may be overlooked through the purely quantitative methodology; a limitation that all studies purely of this type must acknowledge. Herein, descriptive analysis of consumer's innate characteristics, perceptions of innovations, and personal habits and behaviours may be further enhanced through complementary use of qualitative research. Such can be employed to hone in on specific perceptions made by individuals, allowing researchers to ascertain not just how various variables interact to influence acceptance, but why. As suggested by Yang et al. (2012), future research should seek to utilize different methodological techniques "to uncover research artifacts and triangulate on the phenomenon" (p. 139), of which the techniques of focus groups and in-depth interviews or consumer ethnography or netnography may be particularly successful at.

h) *Cultural limitations:*

The purpose of this research is to firstly, develop a scale that captures the affect (non-adopter) consumers experience when exposed to an innovation, and secondly, to utilize this *C.I.A.* scale amongst various other measures to conclusively examine (for the first time) what drives status quo breakage in the acceptance of innovations. Evidently, it is not within the scope of this study to determine a general, global standard for innovation acceptance specifically nuanced to each nation. The sample from which this study's findings are drawn from are primarily of Australian, United States, and Asian nationalities, thus limitations do exist pertaining to the generalizability of the sample collected. Regarding this matter, Lynn and Gelb (1996) demonstrate that nationality may influence respondents' innovativeness perceptions. Herein, as different nations interact with products differently, research findings may vary from one nation (and thus one sample) to another. However, as this study examines primary perceptions of affect, characteristics of the innovation and the individual adopter themselves, as well as the assessment of social pressures, it is unlikely these constructs will differ dramatically across cultures. Such variables are likely to be important drivers in any culture, and subsequently may transcend any individual nationalistic culture's perspectives. Nonetheless, some cultures (such as Korea, Taiwan, and Japan) are particularly rapid and early adopters of innovation and technology, whilst nations in the developing world, whilst growing in market power, are unlikely to be so receptive. Furthermore, within nationalistic cultures, various sub-cultures and communities exist that may be more or less receptive to innovations. Thus, future research should explore whether the results of this empirical study hold in other samples, evidently determining the cultural differences salient in status quo destruction.

Chapter conclusion:

As the conclusion to this research, this penultimate chapter has successfully addressed its proposed research questions and in doing so, identifies the significant value of the study to academia through its conceptual, methodological and practical contributions. Such discussion has been grounded by the inevitable limitations any study must face, with these addressed through relevant new areas of future research. Having comprehensively detailed all elements of the research process, from its preliminary secondary research and subsequent hypotheses, through to the primary research methodology and its results and findings, this study is closed through its detailed reference list, and an appendices section comprising additional information to be consumed with this dissertation. Thank you.

References:

Aaker, D. A., D. M. Stayman, and R. Vezina. 1988. Identifying feelings elicited by advertising. *Psychology & Marketing* 5, 1–16.

Adidas to shift some production from Asia in robot revolution. 2015. http://www.channelnewsasia.com/news/business/international/adidas-to-shift-some-prod/1743282.html#.VSHkH6DmoBM.mailto (accessed April 6, 2015).

Agarwal, R., and J. Prasad. 1998. A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research* 9 (2): 204–215.

Ahluwalia, P., G. Gimpel, and U. Varshney. 2010. Why people aren't using wireless internet: A behavioral economics approach to technology preferences. *International Journal of Services and Standards* 6 (3): 271-294.

Alba, J. W., and J. W. Hutchinson. 1987. Dimensions of consumer expertise. *Journal of Consumer Research* 13 (4): 411–454

Ajzen, I. 1985. *Action-control: From cognition to behavior*. Heidelberg: Springer.

Ajzen, I. 1991. The Theory of Planned Behavior. *Organizational behavior and human decision processes* 50, 179-211.

Ajzen, I., and M. Fishbein. 1980. *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I., and M. Fishbein. 2005. *The handbook of attitudes*. Mahwah, NJ: Erlbaum.

Alexander, D. L., J. G. Lynch Jr., and Q. Wang. 2008. As time goes by: Do cold feet follow warm intentions for really new versus incrementally new products? *Journal of Marketing Research* 55, 307-319.

Allport, G. W. 1935. *Handbook of social psychology*, Worcester, MA: Clark University Press

Anastasi, A. 1988. *Psychological testing*. New York: Macmillan.

Anderson, J. C., and D. W. Gerbing. 1984. The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika* 49, 155−173.

Arbuckle, J. L., and W. Wothke. 1999. *AMOS 4.0 users'guide*. Chicago, IL: SPSS, Inc.

Armitage, C. J., and M. Conner. 2001. Efficacy of the theory of planned behavior: A meta-analytic review. *British Journal of Social Psychology* 40, 471–499.

Arts, J. W., R. T. Frambach, and T. H. Bijmolt. 2011. Generalizations on consumer innovation adoption: A meta-analysis on drivers of intention and behavior. *International Journal of Research in Marketing* 28, 134-144

Bagozzi, R. P. and K-H. Lee. 1999. Resistance to innovations: Psychological and social origins. *Seoul National University Journal of Business* 33, 182-204.

Bagozzi, R. P., and L. W. Phillips. 1982. Representing and testing organizational theories: a holistic construal. *Administrative Science Quarterly* 27 (3): 459–489.

Bagozzi, R.P., Y. Yi, and L. W. Phillips. 1991. Assessing construct validity in organizational research. *Administrative Science Quarterly* 36, 421–458.

Bandura, A. 1986. *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Banfi, S., M. Farsi, M. Filippini, and M. Jakob. 2008. Willingness to pay for energy-saving measures in residential buildings. *Energy Economics* 30 (2): 503-516.

Bang, H-K, A. E. Ellinger, J. Hadjimarcou, and P. A. Traichal. 2000. Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology & Marketing* 17 (6): 449-468.

Bartels, J., and M. J. Reinders. 2011. Consumer innovativeness and its correlates: A propositional inventory for future research. *Journal of Business Research* 64, 601-609.

Batra, R. and O. T. Ahtola. 1990. Measuring the hedonic and utilitarian sources of consumer attitude. *Marketing Letters 2* (2): 159–170.

Batra, R., and M. B. Holbrook. 1990. Developing a typology of affective responses to advertising. *Psychology & Marketing* 7, 11–25.

Baumgartner, H., and J-B. E. M. Steenkamp. 1996. Exploratory consumer behavior: conceptualization and measurement. *International Journal of Research in Marketing* 13 (2): 121–37.

Baumgartner, H., and J-B. E. M. Steenkamp. 2001. Response styles in marketing research: a cross-national investigation. *Journal of Marketing Research*. 38, 143–156.

Bazerman, M. H., A. E. Tenbrunscl, and K. Wade-Benzoni. 1998. Negotiating with yourself and losing: Understanding and managing conflicting internal preferences. *Academy of Management Review* 23, 225-241.

Bearden, W. O., R. G., Netemeyer, and J. E. Teel. 1989. Measurement of consumer susceptibility to interpersonal influence. *Journal of Consumer Research* 15, 473–81.

Beaudry, A., and A. Pinsonneault. 2005. Understanding user responses to information technology: A coping model of user adaptation. *MIS Quarterly* 29 (3): 493-524.

Beauducel, A., and P. Y. Herzberg. 2006. On the performance of maximum likelihood versus means and variance adjusted weighted least squares estimation in CFA. *Structural Equation Modeling* 13, 186–203.

Belk, R. W. 1985. Materialism: Trait aspects of living in the material world. *Journal of Consumer Research,* 12, 265-280.

Belk, R. W. 1988. Possessions and extended self. *Journal of Consumer Research* 15 (2): 139–168.

Beldona, S., S. Kline, and A. M. Morrison. 2004. Utilitarian value in the internet: Differences between broadband & narrowband users. J*ournal of Travel & Tourism Marketing* 17 (2/3): 63–77.

Berger, I., B. T. Ratchford, and G. H. Haines Jr. 1994. Subjective product knowledge as a moderator of the relationship between attitudes and purchase intentions for a durable product. *Journal of Economic Psychology* 15, 301-314.

Biswas, A., and D. L. Sherrell. 1993. The influence of product knowledge and brand name on internal price standards and confidence. *Psychology and Marketing* 10 (1): 31–46.

Bohner, G., and N. Dickel. 2011. Attitudes and attitude change. *Annual Review of Psychology* 62, 391–417

Bollen, K. A. 1989. *Structural equations with latent variables*. New York: Wiley.

Borchers, A. M., J. M. Duke, and G. R. Parsons. 2007. Does willingness to pay for green energy differ by source? *Energy Policy* 35 (6): 3327-3334.

Bourdieu, P. 1984. *Distinction: A social critique of the judgment of taste*. London: Routledge.

Braak, J. V. 2001. Individual characteristics influencing teachers' class use of computers. *Journal of Educational Computing Research 25* (2): 141-157.

Brancheau, J. C., and J. C. Wetherbe. 1990. The adoption of spreadsheet software: Testing innovation diffusion theory in the context of end-user computing. *Information Systems Research 1* (2): 115–143.

Brashers, D. E. 2001. Communication and uncertainty management. *Journal of Communication* 51 (3): 477-498.

Brass, D.J., K. D. Butterfield, and B. C. Skaggs. 1998. Relationships and unethical behavior: a social network perspective. *Academy of Management Review* 23 (1): 14–32.

Briggs, S. R., and J. M. Cheek. 1986. The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality* 54, 106-148.

Brown, T. A. 2006. *Confirmatory factor analysis for applied research*. New York: The Guildford Press.

Brucks, M. 1985. The effects of product class knowledge on information search behavior. *Journal of Consumer Research* 12 (1): 1–16.

Bruner II, G. C., and A. Kumar. 2005. Explaining consumer acceptance of handheld Internet devices. *Journal of Business Research* 58 (5): 553-558.

Burkhardt, M. E., and D. J. Brass. 1990. Changing patterns or patterns of change: the effects of a change in technology on social network structure and power. *Administrative Science Quarterly* 35 (1): 104–127.

Burmeister, K., and C. Schade. 2005. Status quo bias versus variety seeking: an experimental investigation into situational and individual moderators. *Marketing: Journal of Research and Management* 1 (1): 15– 25.

Burmeister, K., and C. Schade. 2007. Are entrepreneurs' decisions more biased? An experimental investigation of the susceptibility to status quo bias. *Journal of Business Venturing* 22, 340-362.

Butcher, L., I. Phau, and C. Marchegiani. 2013. *Flexibility, innovation and adding value as drivers of global competitiveness: Private and public sector challenge. Taipei, Taiwan, June 25-29, 2013. How does an innovation make me feel: The development of the consumer innovation emotions (CIE) scale.*

Byrne, B. M. 2001. *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.

Campbell, D. T., and D. W. Fiske. 1959. Convergent and discriminant validation by the multitrait–multimethod matrix. *Psychological Bulletin* 56, 81–105.

Campoy-Muñoz, P., P. A. Gutiérrez,, and C. Hervás-Martínez. 2014. Addressing remitting behavior using an ordinal classification approach. *Expert Systems with Applications* 41, 4752–4761.

Carayannis, E. G., E. Gonzalez, and J. Wetter. 2003. *The international handbook on innovation*. Oxford: Elsevier Science Ltd.

Carlson, D. S., and K. M. Kacmar. 2000. Work–family conflict in the organization: Do life role values make a difference*? Journal of Management* 26, 1031–1054.

Carlson, J. P., L. H. Vincent, D. M. Hardesty, and W. O. Bearden. 2009. Objective and subjective knowledge relationships: A quantitative analysis of consumer research findings. *Journal of Consumer Research* 35 (1): 864-976.

Cardello, A. V. 2003. Consumer concerns and expectations about novel food processing technologies: Effects on product liking. *Appetite* 40, 217–233.

Cenfetelli, R. T. 2004. Inhibitors and enablers as dual factors concepts in technology usage. *Journal of the Association of Information Systems* 5 (11–12): 472–492.

Chang, C. 2004. The interplay of product class knowledge and trial experience in attitude formation. *Journal of Advertising* 33 (1): 83-92.

Chang, H. H., and S. W. Chen. 2008. The impact of online store environment cues on purchase intention: Trust and perceived risk as a mediator. *Online Information Review* 32 (6): 818 – 841.

Chang, M. K., and W. Cheung. 2001. Determinants of the intention to use internet / WWW at work: A confirmatory study. *Information & Management*, 39, 1–14.

Chao, C.-W., M. Reid, and F. T. Mavondo. 2012. Consumer innovativeness influence on really new product adoption. *Australasian Marketing Journal* 20, 211-217.

Chen, P., and L. M. Hitt. 2002. Measuring switching costs and the determinants of customer retention in internet-enabled online brokerage industry. *Information Systems Research* 13 (3): 255-274.

Childers, T. L., C. L. Carr, J. Peck, and S. Carson. 2001. Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing* 77, 511–536.

Chin, W. W. 1998. *Modern methods for business research.* Mahwah, NJ: Lawrence Erlbaum Associates.

Chin, W. W., and P. A. Todd. 1995. On the use, usefulness, and ease of use of structural equation modeling in MIS research: A note of caution. *MIS Quarterly* 19, 237–246.

Choudhury, V., and E. Karahanna. 2008. The relative advantage of electronic channels: A multidimensional view. *MIS Quarterly* 32 (1): 179-200.

Churchill, G. A. 1979. A paradigm for developing better measures of marketing constructs, *Journal of Marketing Research* 16 (1): 64-73.

Citrin A.V., D. E. Sprott, S. N. Silverman, and D. E. Stem Jr. 2000. Adoption of internet shopping: the role of consumer innovativeness. *Industrial Management and Data Systems* 100 (7): 294–300.

Clark, L. A., and D. Watson. 1995. Constructing validity: Basic issues in objective scale development. *Psychological Assessment* 7 (3): 309-319.

Claudy, M. 2010. An empirical investigation of consumer resistance to green product innovation. Doctoral thesis, Dublin Institute of Technology, Dublin. http://arrow.dit.ie/cgi/viewcontent.cgi?article=1016&context=busdoc (accessed June 15, 2014).

Clore, G. L., A. Ortony, and M. A. Foss. 1987. The psychological foundations of the affective lexicon. *Journal of Personality and Social Psychology* 53, 751–755.

Cohen, J. 1988. *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Cohen, J. B., and C. S. Areni. 1991. *Handbook of consumer behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Coltman, T., T. M. Devinney, D. F. Midgley, and S. Veniak. 2008. Formative versus reflective measurement models: Two applications of formative measurement. *Journal of Business Research* 61(12): 1250-1262.

Compeau, D. R., and C. A. Higgins. 1995. Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19 (2): 189–211.

Cooper, R. B., and R. W. Zmud. 1990. Information technology implementation research: a technological diffusion approach. *Management Science* 36 (2): 123–139.

Constantiou, I. 2009. Consumer behavior in the mobile telecommunications' market: The individual's adoption decision of innovative services. *Telematics and Informatics* 26, 270-281.

Cortina, J. M. 1993. What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology* 78, 98-104.

Cote, J. A., and R. Buckley. 1987. Estimating trait, method, and error variance: Generalizing across 70 construct validation studies. *Journal of Marketing Research* 24, 315–318.

Cotte, J., and S. L. Wood. 2004. Families and innovative consumer behavior: a triadic analysis of sibling and parental influence. *Journal of Consumer Research* 31, 78–86.

Cravens, D. W., C. W. Holland, C. W. Lamb Jr. and W. C. Moncrieff. 1988. Marketing's role in product and service quality. *Industrial Marketing Management* 17, 285–304.

Dabholkar, P. A. and R.P. Bagozzi. 2002. An attitudinal model of technology-based self-service: Moderating effects of consumer traits and situational factors. *Journal of the Academy of Marketing Science*, 184-202.

Danelon, M. S., and E. Salay. 2012. Development of a scale to measure consumer perception of the risks involved in consuming raw vegetable salad in full-service restaurants. *Appetite* 59, 713–722.

Danneels, E. 2003. Tight-loose coupling with customers: The enactment of customer orientation. *Strategic Management Journal* 24 (66): 559–576.

Danneels, E., Kleinschmidt, E. J. 2001. Product innovativeness from the firm's perspective: its dimensions and their relation with product selection and performance. *The Journal of Product Innovation Management* 18 (6): 357-373.

Davis, F. D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–339.

Davis, F. D., R. P. Bagozzi, and P. R. Warshaw. 1989. User acceptance of computer technology: A comparison of two theoretical models. *Management Science* 35, 982-1003.

Davis, F. D., R. P. Bagozzi, and P. R. Warshaw. 1992. Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology* 22 (14): 1111–1132.

Deighton, J. 1984. The interaction of advertising and evidence. *Journal of Consumer Research* 11, 763-770.

Demeritt, L. 2002. *All things organic 2002: A look at the organic consumer*. Bellevue, WA: The Hartman Group.

Derbaix C. M. 1995. The impact of affective reactions on attitudes toward the advertisement and the brand: a step toward ecological validity. *Journal of Marketing Research* 32 (4): 470–479.

DeVellis, R. F. 1991. *Scale development: Theory and application*: *Applied Social Research Methods*. London: Sage.

DeVellis, R. F. 2003. *Scale development. Theory and applications.* London: Sage.

DeVellis, R. F. 2012. *Scale development*. Thousand Oaks, California: Sage Publishing.

Dhar, R., and K. Wertenbroch. 2000. Consumer choice between hedonic and utilitarian goods. *Journal of Marketing Research* 37, 60–71.

Dholakia, U. M. 2001. A motivational process model of product involvement and consumer risk perception. *European Journal of Marketing* 35 (11-12): 1340–1360.

Dodds, W. B., K. B. Monroe and D. Grewal. 1991. Effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research* 28, 307–319.

Doll J., and I. Ajzen. 1992. Accessibility and stability of predictors in the theory of planned behavior. Journal of Personality and Social Psychology 63 (5): 754–765.

Donthu, N., and N. Garcia. 1999. The internet shopper. *Journal of Advertising Research* 39 (3): 52–58.

Douglas, M., and A. Wildavsky. 1982. *Risk and culture*. Berkeley, CA: University of California Press.

Dowling, G. 1986. Perceived risk: the concept and its measurement. *Psychology and Marketing* 3, 193-210.

Dube L., M-C. Cervellon, and J. Han. 2003. Should consumer attitudes be reduced to their affective and cognitive bases? Validation of a hierarchical model. *International Journal of Research in Marketing* 20 (3): 259–272.

Eagly, A. H., and S. Chaiken. 1993. *The psychology of attitudes*. Fortworth, TX: Harcourt Brace Jovanovich College Publishers.

Eagly, A. H, and S. Chaiken S. 1995. *Attitude strengths: antecedents and consequences*. Hillsdale, NJ: Erlbaum.

Eagly, A. H, and S. Chaiken. 2007. The advantages of an inclusive definition of attitude. *Social Cognition* 25 (5): 582–602.

Eastin, M. A., and R. L. LaRose. 2000. Internet self-efficacy and the psychology of the digital divide. *Journal of Computer Mediated Communication* 6 (1): 123 – 164.

Eastman, J. K., R. E. Goldsmith, and L. R. Flynn. 1999. Status consumption in consumer behavior: scale development and validation. *Journal of Marketing Theory and Practice* 7, 41–51.

Echambadi, R., and J. D. Hess. 2007. Mean-centering does not alleviate collinearity problems in mode rated multiple regression models. *Marketing Science* 26, 438-445.

Edell, J. A., and M. C. Burke. 1987. The power of feelings in understanding advertising effects. *Journal of Consumer Research* 14 (4): 421–33.

Elgan, M. Three lies about Google Glass. 2015. http://www.computerworld.com/article/2905974/three-lies-about-google-glass.html (accessed April 6, 2015).

Engel, J., R. Blackwell, and P. Miniard, P. 1995. *Consumer behavior*. Fort Worth: Dryden Press. European Commission

Farrell, A. M. 2010. Insufficient discriminant validity: a comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of Business Research* 63, 324-327.

Fazio, R. H. 1986. *The handbook of motivation and cognition: Foundation of social behavior*. New York, NY: Guilford.

Fernandez, R., and D. Rodrik. 1991. Resistance to reform: Status quo bias in the presence of individual-specific uncertainty. *The American Economic Review* 81 (5): 1146-1155.

Field, A. 2009. *Discovering Statistics Using SPSS (3rd Edition)*. London: Sage Publishing.

Fishbein, M., and I. Ajzen. 1975. *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fisher, R. J. and L. L. Price. 1992. An investigation into the social context of early adoption behavior. *Journal of Consumer Research* 19, 477-486.

Flora, D. B., and P. J. Curran. 2004. An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods* 9 (4): 466–491.

Flynn, L. R., and R. E. Goldsmith. 1999. A short, reliable measure of subjective knowledge.

Journal of Business Research 46, 57–66.

Fornell, C. L., and F. Larcker. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 15, 39-50.

Foxall, G. R., R. E. Goldsmith, and S. Brown. 1998. *Consumer psychology for marketing*. London: Thomson Business Press.

Frewer, L. J. 2003. Societal issues and public attitudes towards genetically modified foods. *Trends in Food Science and Technology* 14 (5–8): 319–332.

Frewer, L. J., C. Howard, and R. Shepherd. 1998. Understanding public attitudes to technology. *Journal of Risk Research* 1 (3): 221-235.

Frewer, L. J., S. Miles, and R. Marsh. 2002. The media and genetically modified foods: Evidence in support of social amplification of risk. *Risk Analysis* 22, 701–711.

Fulk, J. 1993. Social construction of communication technology. *Academy of Management Journal* 36 (5): 921–950.

Garcia, R., and T. Atkin. 2007. Co-opetition for the diffusion of resistant innovations: A case study in the global wine industry. *Institute for Global Innovation Management*.

Garcia, R., F. Bardhi, and C. Friedrich. 2007. Overcoming consumer resistance to innovation. *MIT Sloan Management Review* 48 (4): 81-89.

Gatignon, H., and T. S. Robertson. 1985. A propositional inventory for new diffusion research. *Journal of Consumer Research* 11, 849–867.

Gao, T. T., G. Leichter, and Y. Wei. 2012. Countervailing effects of value and risk perceptions in manufacturers' adoption of expensive, discontinuous innovations. *Industrial Marketing Management* 41 (4): 659-668.

Gao, S. G., P. L. Mokhtarian, and R. A. Johnston. 2008. Nonnormality of Data in Structural Equation Models. *Transportation Research Record* 2082, 116-124.

Gawronski B. 2007. Editorial: Attitudes can be measured! But what is an attitude? *Social Cognition* 25, 573–581.

Gerbing, D, W., and J. C. Anderson. 1988. An updated paradigm for scale development incorporating unidimensionality and its Assessment, J*ournal of Marketing Research* 25 (2): 186–192.

Global Apple iPhone sales 2007-2015, by quarter. 2015. http://www.statista.com/statistics/263401/global-apple-iphone-sales-since-3rd-quarter-2007/ (accessed April 6, 2015).

Goldenberg, J., D. R. Lehmann, and D. Mazursky. 2001. The idea itself and the circumstances of its emergence as predictors of new product success. *Management Science* 47 (1): 69–84.

Goldsmith R. E., J. B. Freiden, and J. K. Eastman. 1995. The generality/specificity issue in consumer innovativeness research. *Technovation* 15 (10): 601–612.

Goldsmith R. E., and C. F. Hofacker. 1991. Measuring consumer innovativeness. *Journal of the Academy of Marketing Science* 19 (3): 209–221.

Goodhue, D. L., and R. L. Thompson. 1995. Task-technology fit and individual performance. *MIS Quarterly* 19 (2): 213-236.

Grayson, K., and R. Martinec. 2004. Consumer perceptions of iconicity and indexicality and their influence on assessments of authentic market offerings. *Journal of Consumer Research* 31, 296–312.

Hair Jr., J. F., W. C. Black, B .J. Babin, and R. E. Anderson. 2006. *Multivariate data analysis*. Upper Saddle River, NJ: Pearson Prentice Hall.

Hair Jr., J. F., W. C. Black, B .J. Babin, R. E. Anderson, and R. L. Tatham. 2009. *Multivariate data analysis*. Porto Alegre, Brazil: Bookman.

Han, H., and K-J. Back. 2008. Relationships among image congruence, consumption emotions, and customer loyalty in the lodging industry. *Journal of Hospitality & Tourism Research* 32, 467-475.

Han, Y. J, J. C. Nunes, and X. Dreze. 2010. Signaling status with luxury goods: the role of brand prominence. *Journal of Marketing*, 74, 15–30.

Hanssens, D. M., L. J. Parsons, and R. L. Schultz. 2001. *Market response models*. Boston: Kluwer Academic.

Hair J. F., R. E. Anderson, R. L. Tatham, and W. C. Black. 1992. *Multivariate data analysis with readings*. New York, NY: Macmillan.

Harrison, D. A., M. E. McLaughlin, and T. M. Coalter. 1996. Context, cognition, and common method variance. *Organizational Behavior and Human Decision Processes* 68 (3): 246–261.

Havlena, W. J., and M. B. Holbrook. 1986. The varieties of consumption experience: Comparing two typologies of emotion in consumer behavior. *Journal of Consumer Research* 13, 394–404.

Hartman, R., M. Doane, and C. K. Woo. 1991. Consumer rationality and the status quo. *Quarterly Journal of Economics* 106, 141–162.

Haynes, S. N., Richard, D. C. S., and E. S. Kubany. 1995. Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment* 7, 238–247.

Herbig, P. A., and R. L. Day. 1992. Customer acceptance. The key to successful introductions of innovations. *Marketing Intelligence & Planning* 10 (1): 4–15.

Heussner, K. M. 2009. The top 10 innovations of the decade. http://abcnews.go.com/Technology/AheadoftheCurve/top-10-innovations-decade/story?id=9204931 (accessed April 6, 2015).

Hinkin, T. R. 1995. A review of scale development practices in the study of organizations. *Journal of Management* 21, 967–988.

Hirshman, E. C., and M. B. Holbrook. 1982. Hedonic consumption: emerging concepts methods and propositions. Journal of Marketing 46, 92–101.

Hoch, S. J., and J. Deighton. 1989. Managing what consumers learn from experience. *Journal of Marketing* 53 (2): 1-20.

Hoeffler, S. 2003. Measuring preferences for really new products. *Journal of Marketing Research* 40 (4): 406–420.

Holbrook, M,, and R. Batra. 1987. Assessing the role of emotions as mediators of consumer responses to advertising. *Journal of Consumer Research* 14 (3): 404–420.

Holbrook, M. B., and R. A. Westwood. 1989. *Cognitive and affective responses to advertising*. Lexington, MA: Lexington Books.

Holbrook, M., and M. Gardner. 1998. How motivation moderates the effects of emotions on the duration of consumption. *Journal of Business Research* 42, 241–252.

Homans, G. C. 1961. *Social behavior: Its elementary forms*. New York: Harcourt, Brace and World.

Hong, S. J., and K. Y. Tam. 2006. Understanding the adoption of multipurpose information appliances: The case of mobile data services. *Information Systems Research* 17 (2): 162–179.

Hooper, D., J. Coughlan, and M. R. Mullen. 2008. Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods* 6 (1): 53-60.

Horrigan, J. B. 2003. *Consumption of information goods and services in the United States*. Washington, DC: Pew Internet & American Life Project.

Horton, R. 1976. The structure of decision risk: some further progress. *Journal of the Academy of Marketing Science* 4 (4): 694–706.

Hu, L., and P. M. Bentler. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 6 (1): 1-55.

Hurter, A. P., and A. H. Rubenstein. 1978. Market penetration by new innovations, technological literature. *Technological Forecasting and Social Change* 11 (3): 197-221.

Igbaria. M., T. Guimaraes, and G. B. Davis. 1995. Testing the determinants of microcomputer usage via a structural equation model. *Journal of Management Information Systems* 11, 87-114.

Idaszak, J., and F. Drasgow. 1987. A revision of the job diagnostic survey: Elimination of a measurement artifact. *Journal of Applied Psychology 72,* 69–74.

Im, S, C. H. Mason, and M. B. Houston. 2007. Does innate consumer innovativeness relate to new product service adoption behavior? The intervening role of social learning via vicarious innovativeness. *Journal of the Academy of Marketing Science* 35, 63–75.

Inder, B., and T. O'Brien. 2003. The endowment effect and the role of uncertainty. *Bulletin of Economic Research* 55 (3): 289-301.

Inman, J. J., and M. Zeelenberg. 2002 Regret in repeat purchase versus switching decisions: the attenuating role of decision justifiability. *Journal of Consumer Research 29* (1): 116–128.

Iverson, R. D., and C. Maguire, 2000. The relationship between job and life satisfaction: Evidence from a remote mining community. *Human Relations* 53, 807–839.

Jacoby, J., and L. Kaplan. 1972. *Third annual conference of the association for consumer research, Chicago, 1972. The components of perceived risk.*

Johnson, E. J., J. Hershey, S. Meszaros, and H. Kunreuther. 1993. Framing, probability distortions, and insurance decisions. *Journal of Risk and Uncertainty* 7, 15–36.

Joseph, B., and S. J. Vyas. 1984. Concurrent validity of a measure of innovative cognitive style. *Journal of the Academy of Marketing Science* 12 (2): 159–75.

Joshi, K. 1991. A model of users' perspective on change: The case of information systems technology implementation. *MIS Quarterly* 15 (2): 229-242.

Kahneman, D., and A. Tversky. 1974. Judgment under uncertainty: Heuristics and biases. *Science* 185 (4157): 1124-1131.

Kahneman, D., and A. Tversky. 1979. Prospect theory: An analysis of decision under risk. *Econometrica* 47 (2): 263-292.

Kahneman, D., J. L. Knetsch, and R. H. Thaler. 1991. Anomalies: the endowment effect, loss aversion and status quo bias. *Journal of Economic Perspectives* 5, 1206–1993.

Kaiser, H. F. 1960. The application of electronic computers to factor analysis. *Educational and Psychological Measurement* 20, 141-151.

Kaiser, H. F. 1974. An index of factorial simplicity. *Psychometrika* 39, 31-36.

Karahanna, E., and D. W. Straub. 1999. Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly* 23 (2): 183–214.

Katz, R. 1980. *Research in organizational behavior*. Greenwich, CT: JAI Press.

Keen, P. G. 1981. Information systems and organizational change. *Communications of the ACM* 24 (1): 24-32.

Kelloway E. K. 1998. *Using LISREL for structural equation modelling: A researcher's guide*. Thousand Oak, CA: Sage Publications.

Kelman, H. C. 1958. Compliance, identification, and internalization: three processes of attitude change? *Journal of Conflict Resolution* 2 (1): 51–60.

Kemery, E. R., and W. P. Dunlap. 1986. Partialling factor scores does not control method variance: A rejoinder to Podsakoff and Todor. *Journal of Management* 12, 525–530.

Kerlinger, F. N. 1986. *Foundations of behavioral research*. New York: Holt Rinehart & Winston.

Kim, K. H. 2005. The relation among fit indexes, power, and sample size in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal* 12 (3): 368-390.

Kim, Y. J., J. U. Chun, and J. Song. 2009. Investigating the role of attitude in technology acceptance from an attitude strength perspective. *International Journal of Information Management* 29, 67-77.

Kim, H.-W., and A. Kankanhalli. 2009. Investigating user resistance to information systems implementation: A status quo bias perspective. *MIS Quarterly* 33 (3): 567-582.

Kim, C., M. Mirusmonov, and I. Lee. 2010. An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior* 26, 310-322.

Klandermans, B. 1992. *Social dilemmas: Theoretical issues and research findings*. Oxford: Pergamom Press.

Kirton, M. 1976. Adaptors and innovators: A description and measure. *Journal of Applied Psychology*, *61* (5): 622–629.

Kleijnen, M., N. Lee, and M. Wetzels. 2009. An exploration of consumer resistance to innovation and its antecedents. *Journal of Economic Psychology* 30, 344–357.

Klerck, D., and J. C. Sweeney. 2007. The effect of knowledge types on consumer-perceived risk and adoption of genetically modified foods. *Psychology & Marketing* 24 (2): 171–193.

Kline, R. B. 1998. *Principles and practice of structural equation modeling*. New York, NY: The Guilford Press.

Kline, R. B. 2011. *Principles and practice of structural equation modeling*. New York: The Guildford Press.

Kline, R. B. 2013. *Beyond significance testing: statistics reform in the behavioral sciences*. Washington, DC: American Psychological Association.

Korsgaard, M. A., and Roberson. 1995. Procedural justice in performance evaluation: The role of instrumental and non-instrumental voice in performance-appraisal discussions. *Journal of Management* 21, 657– 669.

Kotler, P. 1994. *Marketing management—analysis, planning, implementation and control*. Englewood Cliffs, NJ: Prentice-Hall.

Koufaris, M. 2002. Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research* 13, 19–28.

Knight, F. 1948. *Risk, uncertainty and prof*it. Boston, MA: Houghton-Mifflin

Kromrey, J. D., and L. Foster-Johnson. 1998. Mean centering in moderated multiple regression: Much ado about nothing. *Educational and Psychological Measurement*, 58, 42-67.

Krosnick, J. A. and R. E. Petty. 1995. *Attitude strength, antecedents and consequences*. Mahwah, NJ: Erlbaum

Krueger, R. A. 1998. *Analyzing and reporting focus group results*. Thousand Oaks, CA: Sage.

Kulviwat, S., G. C. Bruner II, and O. Alal-Shuridah. 2009. The role of social influence on adoption of high tech innovations: The moderating effect of public/private consumption. *Journal of Business Research* 62, 706-712.

Kulviwat, S., G. C. Bruner II, A. Kumar, S. A. Nasco, and T. Clark. 2007. Toward a unified theory of consumer acceptance of technology. *Psychology and Marketing* 24, 1059–1084.

Kumar, N., L. W. Stern, and R. V. Achrol. 1992. Assessing reseller performance from the perspective of the supplier. *Journal of Marketing Research* 29 (2): 238-253.

Landis, R. S., D. J. Beal, and P. E. Tesluk. 2000. A comparison of approaches to forming composite measures in structural equation models. *Organizational Research Methods* 3, 186-207.

Lapointe, L., and S. Rivard. 2005. A multiple model of resistance to information technology implementation. *MIS Quarterly* 29 (3): 461-491.

Laroche, M., J. McDougall, J. Bergeron, and Z. Yang. 2004. Exploring how intangibility affects perceived risk. *Journal of Service Research* 6 (4): 373–389.

Laros, F. M., and J-B. E. M. Steenkamp. 2005. Emotions in consumer behavior: a hierarchical approach. *Journal of Business Research 58*, 1437–1445.

LaRose, R., and M. S. Eastin. 2004. Social cognitive theory of internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcast & Electronic Media* 3, 87 – 91.

Lascu, D. N., G. Zinkhan. 1999. Consumer conformity: review and applications for marketing theory and practice. *Journal of Marketing Theory and Practice* 7 (3): 1-12.

Laukkanen, T., S. Sinkkonen, M. Kivijärvi, and P. Laukkanen. 2007. Innovation resistance among mature consumers. *Journal of Consumer Marketing* 24 (7): 419–427.

Laverie, D. A., R. E. Kleine III, and S. S. Kleine. 1993. Linking emotions and values in consumption experiences: An exploratory study. *Advances in Consumer Research* 20 (1): 70-75.

Lee, H. G., and T. H. Clark. 1997. Market process reengineering through electronic market systems: Opportunities and challenges. *Journal of Management Information Systems* 13 (3): 113–137.

Lee, H. Y., H. Qu, and Y. S. Kim. 2007. A study of the impact of personal innovativeness on online travel shopping behavior—A case study of Korean travelers. *Tourism Management* 28, 886-897.

Lee, J., and A. Allaway. 2002. Effects of personal control on adoption of self-service technology innovations. *Journal of Services Marketing* 16 (6): 553-572.

Lee, Y-K., J. H. Park, N. Chung, and A. Blakeney. 2011. A unified perspective on the factors influencing usage intention toward mobile financial services. *Journal of Business Research* 65 (11): 1-10.

Lepp, A., and H. Gibson. 2008. Sensation seeking and tourism: tourist role, perception of risk and destination choice. *Tourism Management* 29 (4): 740–750.

Legris, P., J. Ingham, J., and P. Collerette. 2003. Why do people use information technology? A critical review of the technology acceptance model. *Information & Management* 40 (3): 191–204.

Lewin, K. 1947. Frontiers in group dynamics: I. Concept, method, and reality in social sciences, social equilibria, and social change. *Human Relations* 1, 5–41.

Lewis, W., R. Agarwal, and V. Sambamurthy. 2003. Sources of influence on beliefs about information technology use: An empirical study of knowledge workers. *MIS Quarterly* 27 (4): 657–678.

Li, H., S. M. Edwards, and J. Lee. 2002. Measuring the intrusiveness of advertisements: Scale development and validation. *Journal of Advertising* 32 (2): 37-47.

Light, P. C. 1998. *Sustaining innovation*. San Francisco: Jossey-Bass.

Lim, E. A., and S. H. Ang. 2008. Hedonic vs. utilitarian consumption: A cross-cultural perspective based on cultural conditioning. *Journal of Business Research* 6, 225-232.

Little, T. D., N. A. Card, J. A. Bovaird, K. J. Preacher, and C. S. Crandall. 2007. *Modeling contextual effects in longitudinal studies*. Mahwah, NJ: Lawrence Erlbaum Associates.

Lund, A. M. 2001. Measuring usability with the USE questionnaire. *STC Usability SIG Newsletter* 8 (2): 1-19.

Lu, Y., T. Zhou, and B. Wang. 2009. Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory. *Computers in Human Behavior* 25 (1): 29-39.

Luarn, P., and H. H. Lin. 2005. Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior* 21 (6): 873–891.

Lin, C. H., H. Y. Shih, and P. J. Sher. 2007. Integrating technology readiness into technology acceptance: The TRAM model. *Psychology & Marketing*, *24* (7): 641-657.

Lu, J., J. E. Yao, and C-S. Yu. 2005. Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. *Journal of Strategic Information Systems* 14, 245–268.

Lu, Y., T. Zhou, and B. Wang. 2009. Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory. *Computers in Human Behavior* 25, 29–39.

Lynn, M., and B. D. Gelb. 1996. Identifying innovative national markets for technical consumer goods. *International Marketing Review* 13 (6): 43−57.

MacCallum, R. C., K. F. Widaman, S. Zhang, and S. Hong. 1999. Sample size in factor analysis. *Psychological Methods* 4 (1): 84-99.

Maheswaran, D., and B. Sternthal. 1990. The effects of knowledge, motivation, and type of message on ad processing and product judgments. *Journal of Consumer Research* 17 (1): 66–73.

Malhotra, N. K. 2005. Attitude and affect: new frontiers of research in the 21st century. *Journal of Business Research* 58, 477-482.

Malhotra, Y., D. F. Galletta, and L. J. Kirsch. 2008. How endogenous motivations influence user intentions: Beyond the dichotomy of extrinsic and intrinsic user motivations. *Journal of Management Information Systems* 25 (1): 267–299.

Mallat, N. 2007. Exploring consumer adoption of mobile payments – A qualitative study. *Journal of Strategic Information Systems* 16 (4): 413–432.

Mallat, N., M. Rossi, V. K. Tuunainen, and A. Öörni, 2006. *The 39th Hawaii international conference on system sciences, Hawaii, 2006: The impact of use situation and mobility on the acceptance of mobile ticketing services*. Hawaii.

Mano, H., and R. L. Oliver. 1993. Assessing the dimensionality and structure of the consumption experience: Evaluation, feeling, and satisfaction. *Journal of Consumer Research* 20, 451-466.

Marakas, G. M., and S. Hornik. 1996. Passive resistance misuse: Overt support and covert recalcitrance in IS implementation. *European Journal of Information Systems* 5 (3): 208-219.

Marsh, H. W., K. T. Hau, and Z. Wen. 2004. In search of golden rules: comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling* 11 (3): 320–341.

Martinko, M. J., J. W. Henry, and R. W. Zmud. 1996. An attributional explanation of individual resistance to the introduction of information technologies in the workplace. *Behavior & Information Technology* 15 (5): 313-330.

Masatlioglu, Y. and E. A. Ok. 2005. Rational choice with status quo bias. *Journal of Economic Theory* 121, 1–29.

Mcknight, D. H., V. Choudhury, and C. Kacmar. 2002. The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *Journal of Strategic Information Systems* 11 (3–4): 297–323.

Mehrabian, A., and J. A. Russell. 1974. *An approach to environmental psychology.* Cambridge: MIT Press.

Merriam-Webster, 2003. *Merriam-Webster's collegiate dictionary*. Encyclopaedia Britannica.

Meyerhoff, J., and U. Liebe. 2009. Status quo effect in choice experiments: Empirical evidence on attitudes and choice task complexity. *Land Economics* 85 (3): 515-528.

Meyers, P. W., and K. Debevec. 1992. Differentiating advertising for a technological innovation: what the consumer knows matters. *The Journal of High Technology Management Research* 3 (2): 243-261.

Meuleners, L. B., A. H. Lee, C. W. Binns, and A. Lower. 2003. Quality of life for adolescents: Assessing measurement properties using structural equation modelling. *Quality of Life Research* 12 (3): 283-290.

Mick, D. G., and S. Fournier. 1998. Paradoxes of technology: Consumer cognizance, emotions, and coping strategies. *Journal of Consumer Research* 25, 123–143.

Midgley D. F, G. R. Dowling. 1978. Innovativeness: the concept and its measurement. Journal of Consumer Research 4, 229–242.

Midgley, D. F., and G. R. Dowling. 1993. A longitudinal study of product form innovation: The interaction between predispositions and social messages. *Journal of Consumer Research* 19, 611–625.

Mitchell, V. 1998. A role for consumer risk perceptions in grocery retailing. *British Food Journal* 100 (4): 171–183.

Mitchell, V. 1999. Consumer perceived risk: conceptualizations and models. *European Journal of Marketing* 33 (1/2): 163-195.

Monkhouse, L. L., B. R. Barnes, and U. Stephan. 2012. The influence of face and group orientation on the perception of luxury goods: A four market study of East Asian consumers. *International Marketing Review* 29 (6): 647–672.

Monroe, K. B. 1990. *Pricing: making profitable decisions*. New York: McGraw-Hill.

Moon, J.-W., and Y-G. Kim. 2001. Extending the TAM for a world-wide-web context. *Information and Management* 38, 217–230.

Moore, G. A. 1999. *Crossing the chasm*. New York: Harper Collins

Moore, G. and I. Benbasat. 1991. Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research* 2 (3): 192–223.

Moorman, C., K. Diehl, D. Brinberg, and B. Kidwell. 2004. Subjective knowledge, search locations, and consumer choice. *Journal of Consumer Research* 31, 673-80.

Moreau, C. P., D. R. Lehmann, and A. B. Markman. 2001. Entrenched knowledge structures and consumer response to new products. *Journal of Marketing Research* 37 (8): 14–29.

Morgan, D. L. 1996. Focus groups. *Annual Review of Sociology* 22, 129 –152.

Morris, M. G., V. Venkatesh, and P. L. Ackerman. 2005. Gender and age differences in employee decisions about new technology: An extension to the theory of planned behavior. *IEEE Transactions on Engineering Management* 52 (1): 69-84.

Mossholder, K. W., N. Bennett, E. R. Kemery, and M. A. Wesolowski. 1998. Relationships between bases of power and work reactions: The mediational role of procedural justice. *Journal of Management* 24, 533–552.

Munroe, K. and J. Cox. 2004. The price is unfair! A conceptual framework of price fairness perceptions. *Journal of Marketing* 68 (4): 1-15.

Murray, K., and J. Schlacter. 1990. The impact of services versus goods on consumer assessment of perceived risk and variability. *Journal of the Academy of Marketing Science* 18 (1): 51-65.

Muthen, L., and B. Muthen. 2002. How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling: A Multidisciplinary Journal* 9 (4): 599-620.

Nabih, M. I., J. G. Bloem, and T. B. C. Poiesz. 1997. Conceptual issues in the study of innovation adoption behavior. *Advances in Consumer Research* 24, 190–196.

Noar, S. M. 2003. The role of structural equation modeling in scale development. *Structural Equation Modeling: A Multidisciplinary Journal* 10 (4): 622-647.

Nasco, S., S. Kulviwat, A. Kumar and G. C. Bruner II. 2008. The CAT model: Extensions and moderators of dominance in technology acceptance. *Psychology & Marketing* 25(10): 987–1005.

Naumann, E. 1995. *Creating customer value—the path to sustainable competitive advantage.* Cincinnati, Ohio: Thomson Executive Press.

Nevitt, J., and G. R. Hancock. 2001. Performance of bootstrapping approaches to model test statistics and parameter standard error estimation in structural equation modeling. *Structural Equation Modeling* 8 (3): 353–377.

Noar, S. M. 2003. The role of structural equation modeling in scale development. *Structural Equation Modeling: A Multidisciplinary Journal* 10 (4): 622-647.

Nunnally, J. C. 1967. *Psychometric theory*. New York: McGraw-Hill.

Nunnally, J. C. 1978. *Psychometric theory*. New York: McGraw-Hill.

Nysveen, H., P. E. Pedersen, and H. Thorbjornsen. 2005. Intentions to use mobile services: antecedents and cross-service comparisons. *Journal of the Academy of Marketing Science* 33 (3): 330-346.

O'Cass, A., and T. Fenech. 2003. Web retailing adoption: Exploring the nature of Internet users web retailing behavior. *Journal of Retailing and Consumer Services* 10 (2): 81–94.

O'Cass, A., and K. Frost. 2002. Status brands: examining the effects of non-product-related brand associations on status and conspicuous consumption. *Journal of Product & Brand Management* 11 (2): 67–88.

O'Leary-Kelly, S. W., and R. J. Vokurka. 1998. The empirical assessment of construct validity. *Journal of Operations Management* 16, 387–405.

Oh, H. 2005. Measuring affective reactions to print apparel advertisements: A scale development. *Journal of Fashion Marketing and Management* 9 (3): 283-305.

Oliver, R. L. 1994. Conceptual issues in the structural analysis of consumption emotion, satisfaction, and quality. *Advances in Consumer Research* 21, 16–22.

Oliver. R. L., and R. S. Winer. 1987. A framework for the formation and structure of consumer expectations: Review and propositions. *Journal of Economic Psychology* 8 (4): 469-499.

Ortoleva, P. 2010. Status quo bias, multiple priors and uncertainty Aversion. *Games and Economic Behavior* 69, 411-424.

Ostlund, L. E. 1974. Perceived innovation attributes as predictors of innovativeness. *Journal of Consumer Research* 1 (2): 23 – 29.

Oreg, S. 2003. Resistance to change: Developing and individual differences measure. *Journal of Applied Psychology* 88 (4): 680–693.

Park, C. W., D. L. Mothersbaugh, and L. Feick. 1994. Consumer knowledge assessment. *Journal of Consumer Research* 21 (1): 71–82.

Pavlou, P. A. 2003. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce* 7 (3): 69–103.

Pavlou, P. A., and M. Fygenson. 2006. Understanding and predicting electronic commerce adoption: an extension of the theory of planned behavior. *MIS Quarterly Management Information System* 30 (1): 115–143.

PayPal's annual revenue in 2013 and 2014 (fee-based). 2014. http://www.statista.com/statistics/382619/paypal-annual-revenue/ (accessed April 6, 2015).

Peter, P. J. 1981. Construct validity: A review of basic issues and marketing practices. *Journal of Marketing Research* 18, 133-145.

Peter, J. P., and L. X. Tarpey. 1975. A comparative analysis of three consumer decision strategies. *Journal of Consumer Research* 2 (1): 29–37.

Peterson, R. A. 2000. *Constructing effective questionnaires.* Thousand Oaks, CA: Sage Publishing.

Pett, M. A., N. R. Lackey, and J. J. Sullivan. 2003. *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*. Thousand Oaks, CA: Sage Publishing.

Petty, R. E., and J. T. Cacioppo. 1986. Advances in experimental social psychology. New York: Academic Press.

Petty, R. E., C. P. Haugtvedt, and S. M. Smith. 1995. *Attitude strength: Antecedents and consequences*. Mahwah, NJ: Lawrence Erlbaum Associates.

Petty, R. E., D. T. Wegener, and L. R. Fabrigar. 1997. Attitudes and attitude change. *Annual Review of Psychology* 48, 609–647.

Phau, I., and M. Teah. 2009. Devil wears (counterfeit) prada: a study of antecedents and outcomes of attitudes towards counterfeits of luxury brands. *Journal of Consumer Marketing* 26 (1): 15-27.

Phillips, W. M., A. Asperin, and K. Wolfe. 2013. Investigating the effect of country image and subjective knowledge on attitudes and behaviors: U.S. Upper Midwesterners' intentions to consume Korean Food and visit Korea. *International Journal of Hospitality Management* 32, 49–58.

Phillips, D. M., and H. Baumgartner. 2002. The role of consumption emotions in the satisfaction response. *Journal of Consumer Psychology* 12 (3): 243–252.

Pieniak, Z., J. Aertsens, and W. Verbeke. 2010. Subjective and objective knowledge as determinants of organic vegetables consumption. *Food Quality and Preference* 21, 581-588.

Plouffe, C. R., J. S. Hulland, and M. Vandenbosch. 2001. Research report: Richness versus parsimony in modeling technology adoption decisions: Understanding merchant adoption of a smart card-based payment system. *Information Systems Research* 12, 208–222.

Plutchik, R. 1980. *Emotion: a psychoevolutionary synthesis*. New York: Harper and Row.

Podsakoff, P. M., S. B. MacKenzie, J-Y. Lee, and N. P. Podsakoff. 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88, 879–903.

Poon, E. G., D. Blumenthal, T. Jaggi, M. M. Honour, D. W. Bates, and R. Kaushal. 2004. Overcoming barriers to adopting and implementing computerized physician order entry systems in U.S. hospitals. *Health Affairs* 24 (4): 184–190.

Quintal, V. A., A. J. Lee, and G. Soutar. 2010. Risk, uncertainty and the theory of planned behavior: A tourism example. *Tourism Management* 31, 797-805.

Ram, S. 1987. A model of innovation resistance. *Advances in Consumer Research* 14 (1): 208–211.

Ram, S., and J. N. Sheth, 1989. Consumer resistance to innovations: The marketing problem and its solutions. *Journal of Consumer Marketing* 6 (2): 5–14.

Raykov, T. 1997. Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement* 21, 173-184.

Richins, M. 1997. Measuring emotions in the consumption experience. *Journal of Consumer Research* *24* (2): 127–146.

Robertson, T. S. 1971. *Innovative behavior and communication*. New York: Holt, Rinehart & Winston.

Roehl, W., and D. Fesenmaier. 1992. Risk perceptions and pleasure travel: an exploratory analysis. *Journal of Travel Research*, 30 (4): 17–26.

Rogers, E. M. 1983. *Diffusion of innovations.* The Free Press, New York.

Rogers, E. M. 1995. *Diffusion of innovations.* The Free Press, New York.

Rogers, E. M. 2003. *Diffusion of innovations.* The Free Press, New York.

Rogers, E. M., and F. F. Shoemaker. 1971. *Communication of innovations.* The Free Press, New York.

Ronteltap, A., van Trijp, J. C., Renes, R. J., and J. J. Frewer. 2007. Consumer acceptance of technology-based food innovations: Lessons for the future of nutrigenomics. *Appetite* 49, 1-7.

Rook, D. W. 1987. The Buying Impulse. *Journal of Consumer Research* 14, 189-199.

Roselius, T. 1971. Consumer rankings of risk reduction methods. *Journal of Marketing* 35, 56–61.

Rosenberg, M. 1979. *Conceiving the self*. New York: Basic Books.

Ross, I. 1971. Self-concept and brand preference. *Journal of Business* 44, 38-50.

Rowe, K. 2002. *Royal Melbourne institute of technology statistics seminar series. Melbourne October 11, 2002. The measurement of latent and composite variables from multiple items or indicators: Applications in performance indicator systems.*

Ruth, J. A., F. F. Brunel, and C. C. Otnes. 2002. Linking thoughts to feelings: Investigating cognitive appraisals and consumption emotions in a mixed-emotions context. *Journal of the Academy of Marketing Science* 30 (1): 44-58.

Rutherford, D. 1992. Dictionary of Economics. London: Routledge.

Ruvio, A., Shoham, A., and M. M. Brencic. 2008. Consumers' need for uniqueness: short-form scale development and cross-cultural validation. *International Marketing Review* 8 (25): 33–53.

Ryan, B., and N. C. Gross. 1943. The diffusion of hybrid seed corn in two Iowa communities. *Rural Sociology* 8, 15–24.

Samuelson, W., and R. Zeckhauser. 1988. Status quo bias in decision making. *Journal of Risk and Uncertainty* 1, 7-59.

Sahin, I. 2006. Detailed theory of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology 5 (2): 14-23.*

Salancik, G. R., and J. Pfeffer. 1978. A social information processing approach to job attitudes and task design. *Administrative Science Quarterly* 23, 224–253.

San Martín, H., and A. Herrero. 2012. Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism Management 33* (2): 341-350.

Sanford, C., and H. Oh. 2010. The role of user resistance in the adoption of a mobile data service. C*yberpsychology, Behavior and Social Networking* 13 (6): 663-672.

Scarpa, R., K. Willis, and M. Acutt. 2007. Valuing externalities from water supply: Status quo, choice complexity and individual random effects in Panel Kernel logit analysis of choice experiments. *Journal of Environmental Planning and Management* 50 (4): 449-66.

Scarpa, R., S. Ferrini, and K. Willis. 2005. *Applications of simulation methods in environmental and resource economics.* Dordrecht: Springer.

Schepers, J. J., and M. Wetzels. 2007. A meta-analysis of the technology acceptance model: investigating subjective norm and moderation effects. *Information & Management* 44 (1): 90–103.

Schierz, P. G., O. Schilke, and B. W. Wirtz. 2010. Understanding consumer acceptance of mobile payment services: An empirical analysis. *Electronic Commerce Research and Applications* 9, 209–216.

Schmid Jr., J. and J. M. Leiman. 1957. The development of hierarchical factor solutions. *Psychometrika* 22, 83-90.

Schmitt, N., and D. M. Stults. 1986. Methodology review: Analysis of multitrait–multimethod matrices. *Applied Psychological Measurement* 10, 1–22.

Schmitz, J., and J. Fulk. 1991. Organizational colleagues, media richness, and electronic mail: a test of the social influence model of technology use. *Communication Research* 18 (4): 487–523.

Schultz, S. E., R. E. Kleine III, and J. B. Kernan. 1989. These are a few of my favorite things': Toward an explication of attachment as a consumer behavior construct. *Advances in Consumer Research* 16, 359–366.

Schwab, D. P. 1980. Construct validity in organizational behavior. *Research in Organizational Behavior* 2, 3–43.

Segars, A. H., and V. Grover. 1993. Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *MIS Quarterly* 17, 517–525.

Sheppard, B., J. Hartwick, and P. Warshaw. 1988. The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research* 15 (4): 325–344.

Sherry, L. 1997. The boulder valley internet project: Lessons learned. *THE (Technological Horizons in Education) Journal* 25 (2): 68-73.

Sheth, J. N. 1981. Psychology of innovation resistance: The less developed concept in diffusion research. *Research in Marketing* 4, 273–282.

Sheth, J. N., B. I. Newman, and B. L. Gross. 1991a. *Consumption values and market choice.* Cincinnati, Ohio: South Western Publishing

Sheth, J. N., B. I. Newman, and B. L. Gross. 1991b. Why we buy what we buy: a theory of consumption values. *Journal of Business Research* 22 (2): 159-170.

Shih, Y-Y., and K. Fang. 2004. The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research* 14 (3): 213-223.

Shin, D. 2009. Towards an understanding of the consumer acceptance of mobile wallet. *Computers in Human Behavior* 25 (6): 1343–1354.

Siemsen, E., A, Roth, and P. Oliveira. 2010. Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methodologies* 13 (3): 456–476

Sirgy, M. J. 1985. Using self-congruity and ideal congruity to predict purchase motivation. *Journal of Business Research* 13 (3):195–206.

Sirgy, M. J., D. Grewal, T. F. Mangleburg, J. Park, K. Chon, C. B. Claiborne, J. S. Johar, and H. Berkman. 1997. Assessing the predictive validity of two methods of measuring self-image congruence. *Journal of the Academy of Marketing Science* 25 (3): 229-241.

Snyder, C. R., and H. L. Fromkin. 1977. Abnormality as a positive characteristic: the development and validation of a scale measuring NFU. *Journal of Abnormal Psychology* 86, 518–527.

Souder, W. E., D. J. Sherman, and R. Davies-Cooper. 1998. Environmental uncertainty, organizational integration, and new product development effectiveness: A test of contingency theory. *Journal of Product Innovation Management* 15, 520–533.

Spector, P. E. 1992. *A consideration of the validity and meaning of self-report measures of job conditions. International review of industrial and organizational psychology.* New York: Wiley.

Srinivasan, S., K. Pauwels, J. Silva-Risso, and D. M. Hanssens. 2009. Product innovations, advertising, and stock returns. *Journal of Marketing* 73, 24–43.

Stafford, T. F., M. R. Stafford, and L. L. Schkade. 2004. Determining uses and gratifications for the internet. *Decision Sciences* 35 (2): 259–288.

Stayman, D. M., and R. Batra. 1991. Encoding and retrieval of ad affect in memory. *Journal of Marketing Research* 28 (2): 232–239.

Steenkamp, J-B. E. M., H. Baumgartner, and E. Van der Wulp. 1996. The relationships among arousal potential, arousal and stimulus evaluation, and the moderating role of need for stimulation. *International Journal of Research in Marketing* 13 (4): 319-329.

Steenkamp, J-B. E. M., F. Hofstede, and M. Wedel. 1999. A cross-national investigation into the individual and national cultural antecedents of consumer innovativeness. *Journal of Marketing* 63 (2): 55−69.

Steenkamp J-B. E. M., and K, Gielens. 2003. Consumer and market drivers of the trial probability of new consumer packaged goods. *Journal of Consumer Research* 30, 368–384.

Stevens, J. P. 2002. *Applied multivariate statistics for the social sciences.* Hillsdale, NJ: Erlbaum.

Straub, D., M. C. Boudreau, and D. Gefen. 2004. Validation guidelines for IS positivist research. *Communications of the Association for Information Systems* 14, 380-426.

Sujan, M. 1985. Consumer knowledge: Effects on evaluation strategies mediating consumer judgments. *Journal of Consumer Research* 12, 31-46.

Surendra, S. S. 2001. Acceptance of Web technology-based education by professors and administrators of a college of applied arts and technology in Ontario. PhD diss. University of Toronto. ProQuest Digital Dissertations.

Sweeney, J. C., and G. N. Soutar. 2001. Consumers perceived value: the development of a multiple item scale. *Journal of Retailing 77*, 203–220.

Sweeney, J. C., G. N. Soutar, and W. Johnson. 1999. The role of perceived risk in the quality–value relationship: a study in a retail environment. *Journal of Retailing* 75, 77–105.

Szmigin, I., and G. Foxall. 1998. Three forms of innovation resistance: The case of retail payment methods. *Technovation* 18 (6-7): 459–468.

Tabachnick, B. G., and L. S. Fidell. 2007. *Using multivariate statistics*. Boston: Allyn and Bacon.

Tariq, B. 2007. Exploring factors influencing the adoption of mobile. *Journal of Internet Banking and Commerce*, 12 (3): 32–42.

Taylor, S., and P. Todd. 1995a. Understanding information technology usage: A test of competing models. *Information Systems Research* 6 (2): 144-176.

Taylor, S., and P. Todd. 1995b. Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International Journal of Research in Marketing* 12 (2): 137–155.

Thaler, R. H. 1980. Towards a positive theory of consumer choice. *Journal of Economic Behavior and Organization* 1, 39–60.

Thaler, R. H. 1985. Mental accounting and consumer choice. *Marketing Science* 4, 199–214.

Thøgersen, J. 2007. Consumer decision-making with regard to organic food products. In Traditional food production facing sustainability: A European challenge, eds. M. A. Vaz, N. Vaz, P. Nijkamp, and J. L. Rastoin, 166–186. London, UK: Economic Geography Series.

Tian, K. T., W. O. Bearden, and G. L. Hunter. 2001. Consumers' need for uniqueness: scale development and validation. *Journal of Consumer Research* 28, 50–66.

Tornatzky, L. G., and K. J. Klein. 1982. Innovation characteristics and innovation adoption-implementation: A meta-analysis of findings. *IEEE Transactions on Engineering Management,* 28–45.

Triandis, H. 1971. *Attitude and Attitude Change*. New York, NY: Wiley.

Triandis, H. C. 1979. Values, attitudes, and interpersonal behavior. *Nebraska Symposium on Motivation* 27, 195-259.

Tse, D., R. W. Belk, and N. Zhou. 1989. Becoming a consumer society: a longitudinal and cross-cultural content analysis of print ads from Hong Kong, the People's Republic of China, and Taiwan. *Journal of Consumer Research* 15, 457–472.

Tulu, B., R. Burkhard, and T. A. Horan. 2007. Continuing use of medical information systems by medical professionals: empirical evaluation of a work system model. *Communications of the AIS* 18 (31): 641–656.

Turel, O., A. Serenko and N. Bontis. 2007. User acceptance of wireless short messaging services: Deconstructing perceived value. *Information & Management 44*, 63–73.

Turel, O., and A. Serenko. 2006. Satisfaction with mobile services in Canada: an empirical investigation. *Telecommunications Policy* 30 (5): 314–331.

Tversky, A., and A. I. Simonson. 1993. Context-dependent preferences. *Management Science* 39 (10): 1179–1189.

Urbina, S. 2004. *Essentials of psychological testing*, Hoboken, NJ: John Wiley & Sons.

Venkatesh, V, M. G. Morris, G. B. Davis, and F. D. Davis. 2003. User acceptance of information technology: toward a unified view. *MIS Quarterly* 27 (3): 425–478.

van der Heijden, H. 2004. User acceptance of hedonic information systems. *MIS Quarterly* 28 (4): 695-704.

van de Venn, A. H., and D. I. Ferry. 1980. *Measuring and assessing organizations*. New York: Wiley.

Vandecasteele, B., and M. Geuens. 2010. Motivated consumer innovativeness: Concept, measurement, and validation. *International Journal of Research in Marketing* 27, 308-318.

Venkatesh, V. 1999. Creation of favorable user perceptions: exploring the role of intrinsic motivation. *MIS Quarterly*, 239-260.

Venkatesh, V., and F. D. Davis. 2000. A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science 46* (2): 186-204.

Venkatesh, V., J. Y. Thong, and X. Xu. 2012. Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly* 36 (1): 157-178.

Verbeke, W. 2008. Impact of communication on consumers' food choices. *Proceedings of the Nutrition Society* 67 (3): 281–288.

Visser, P. S., J. A. Krosnick, and P. Lavrakas. 2000. *Handbook of research methods in social psychology*. New York: Cambridge University Press.

Vogt, D. S., D. W. King, and L. A. King. 2004. Focus groups in psychological assessment: Enhancing content validity by consulting members of the target population. *Psychological Assessment* 16 (3): 231-243.

von der Heidt, T. and D. R. Scott. 2007. *21st Australian and New Zealand academy of managers conference, Sydney, Australia. 4-7 December. Partial aggregation for complex structural equation modelling (SEM) and small sample sizes: An illustration using a multi-stakeholder model of cooperative interorganisational relationships (IORs) in product innovation.*

Wang, Y., D. Meister, and Y. Wang. 2008. Relative advantage and perceived usefulness: The adoption of competing ICTs. *DIGIT* 2008 Proceedings, 1-21.

Wang, C. L., and P. K. Ahmed. 2004. The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management* 7 (4): 303-313.

Warshaw, P. R. 1980. A new model for predicting behavioral intentions: An alternative to Fishbein. *Journal of Marketing Research* 17, 153–172.

Wegener, D. T., J. Downing, J. A. Krosnick, and R. E. Petty. 1995. *Attitude strength: Antecedents and consequences.* Mahwah, NJ: Lawrence Erlbaum Associates.

Westbrook, R.A. 1987. Product/consumption-based affective responses and post-purchase processes. *Journal of Marketing Research* 24, 258–270.

Westland, J. C. 2010. Lower bounds on sample size in structural equation modelling. *Electronic Commerce Research and Applications* 9, 476–487.

Winer, S, 1986. A reference price model of brand choice for frequently purchased products. *Journal of Consumer Research* 13, 250–266.

Wolfinbarger, M., M. Gilly. 2001. Shopping online for freedom, control and fun. *California Management Review* 43 (2): 34–55.

Wood, S. C., and C. P. Moreau. 2006. From fear to loathing? How emotion influences the evaluation and early use of innovations. *Journal of Marketing* 70, 44-57.

Wunker, S. 2015. Five innovation lessons from Kickstarter's most successful campaigns of 2014. http://www.forbes.com/sites/stephenwunker/2015/01/14/5-innovation-lessons-from-kickstarters-most-successful-campaigns-of-2014/ (accessed April 6, 2015).

Wood S, L., and C. P. Moreau. 2006. From fear to loathing? How emotion influence the evaluation and early use of innovations. *Journal of Marketing* 70 (3): 44–57.

Woodruff, R. B. 1997. Customer Value: The next source for competitive advantage. *Journal of the Academy of Marketing Science* 25 (2): 139–153.

Woodside, A. G., and W. G. Biemans. 2005. Modeling innovation, manufacturing, diffusion and adoption/rejection processes. *Journal of Business & Industrial Marketing* 20 (7): 380–393.

Wiles, J. A., and T. B. Cornwell. 1990. A review of methods utilized in measuring affect, feelings, and emotion in advertising. *Current Issues and Research in Advertising* 13 (2): 241–275.

Wu, J. H., and S. C. Wang. 2005. What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & Management* 42 (5): 719–729.

Wu, J. H., Y. C. Chen, and L. M. Lin. 2007. Empirical evaluation of the revised end user computing acceptance model. *Computers in Human Behavior* 23 (1): 162–174.

Wynd, C. A., B. Schmidt, and M. A. Schaefer. 2003. Two quantitative approaches for estimating content validity. *Western Journal of Nursing Research* 25 (5): 508-518.

Xie, Y. H. 2008. Consumer innovativeness and consumer acceptance of brand extensions. *Journal of Product & Brand Management* 17, 235–243.

Yang, S., Y. Lu, S. Gupta, Y. Cao, and R. Zhang. 2012. Mobile payment services adoption across time: An empirical study of the effects of behavioral beliefs, social influences, and personal traits. *Computers in Human Behavior* 28, 129-142.

Yavas, U. 1994. Research note: Students as subjects in advertising and marketing research. *International Marketing Review* 11 (4): 35-43.

Yi, M. Y., K. D. Fiedler, and J. S. Park. 2006. Understanding the role of individual innovativeness in the acceptance of IT-based innovations: Comparative analyses of models and measures. *Decision Sciences* 37 (4): 393-426.

Zaltman, G., and R. Duncan. 1977. *Strategies for planned change*. New York, NY: John Wiley & Sons,

Zeithaml, V. A. 1988. Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence. *Journal of Marketing* 52, 2–22.

Ziamou, P., and S. Ratneshwar. 2002. Promoting consumer adoption of high-technology products: Is more information always better? *Journal of Consumer Psychology* 12 (4): 341–351.

Appendices:

Appendix 1: Sample research instrument

Dear Participants,

The following questionnaire will take approximately 5 - 10 minutes of your time. To ensure confidentiality of individual participants, responses will be published in aggregate form only. You can discontinue the survey at any time.

If you have any questions regarding this survey, please contact the undersigned, or the University Ethics Committee on 9266 2784 or by email hrec@curtin.edu.au .

Thank you for your participation, Luke Butcher luke.butcher@cbs.curtin.edu.au

Q1a) What does the product appear to be made of? *SAMPLE ATTENTION TEST*

Metal	Wood	Rubber	Plastic	Corn Flakes

Q1b) What is it's name? *SAMPLE ATTENTION TEST*

Goodnight Home	Wood Light	Goodnight Lamp	Goodbye Friend	House Light

PLEASE NOTE: a score of "0" indicates that you **DO NOT** feel that emotion towards the product **at all.** *It is perfectly fine to not experience an emotion.*

Please indicate to what extent you feel the following emotions TOWARDS THE PRODUCT shown in the stimulus.

Q2)	*Not At All*	Very Weakly		< - - - - - - - - - - - - - - - >			Very Strongly
Sceptical	0	1	2	3	4	5	6	7
Thankful	0	1	2	3	4	5	6	7
Nervous	0	1	2	3	4	5	6	7
Amazed	0	1	2	3	4	5	6	7
Surprised	0	1	2	3	4	5	6	7
Depressed	0	1	2	3	4	5	6	7
Bored	0	1	2	3	4	5	6	7
Suspicious	0	1	2	3	4	5	6	7
Happy	0	1	2	3	4	5	6	7
Unexcited	0	1	2	3	4	5	6	7
Miserable	0	1	2	3	4	5	6	7
Tense	0	1	2	3	4	5	6	7
Disbelief	0	1	2	3	4	5	6	7
Unimpressed	0	1	2	3	4	5	6	7
Panicky	0	1	2	3	4	5	6	7
Pleased	0	1	2	3	4	5	6	7
Astonished	0	1	2	3	4	5	6	7
Sad	0	1	2	3	4	5	6	7

Please read the following definitions and answer the subsequent questions:

'Innovativeness' is a measure of the degree of 'newness' of a product or service, AT THIS POINT IN TIME, compared to EXISTING and COMPETING products.

Innovation is the creation of better or more effective products, processes, technologies or ideas that possess a sharp difference of characteristics to those prior.

420

Q3) How INNOVATIVE do you consider the product shown?

Not Innovative at all				< - >					Very Innovative	
0	1	2	3	4	5	6	7	8	9	10

A HEDONIC product is one that:

·   Allows you to experience personal gratification or enjoyment
·   Is emotionally satisfying

Q4) To what extent do you agree with the following statement:

Use of this product would serve a **HEDONIC** purpose	Strongly Disagree		< - - - - - - - - - - - - - - >			Strongly Agree	
	1	2	3	4	5	6	7

A UTILITARIAN product is one that:

·   Focuses on problem solving and accomplishing tasks
·   Is reason-based and goal oriented

Q5) To what extent do you agree with the following statement:

Use of this product would serve a **UTILITARIAN** purpose	Strongly Disagree		< - - - - - - - - - - - - - - >			Strongly Agree	
	1	2	3	4	5	6	7

Q6) Do you consider this product UTILITARIAN or HEDONIC?

UTILITARIAN		< - >				**HEDONIC**
1	2	3	4	5	6	7

Q7) Have you ever PURCHASED this specific product shown (i.e. this exact model and make)?	**NO**	**YES**	**Q8) Have you ever USED this specific product shown?** (i.e. this exact model and make)?	**NO**	**YES**

* * * BASED UPON YOUR PERCEPTIONS OF THE PRODUCT, WHAT YOU KNEW OF IT BEFORE, AND WHAT YOU KNOW OF OTHER PRODUCTS: * * *

Q9) To what extent do you agree with the following statements?	**Strongly Disagree**		< - - - (neutral) - - - >			**Strongly Agree**	
I would appreciate using this product instead of alternative products	1	2	3	4	5	6	7
I feel a need to use this product	1	2	3	4	5	6	7
Using this product would fit well with my lifestyle and habits	1	2	3	4	5	6	7
This product is something I would use	1	2	3	4	5	6	7

Q10) Based on the price given ($*PRICE*):	**Strongly Disagree**		< - - - (neutral) - - - >			**Strongly Agree**	
The product is economical	1	2	3	4	5	6	7
The quality of the product is good relative to the price	1	2	3	4	5	6	7
The product offers value for money	1	2	3	4	5	6	7

The product is reasonably priced	1	2	3	4	5	6	7

Q11) I perceive this product:	**Strongly Disagree**		**< - - - (neutral) - - - >**			**Strongly Agree**	
Would make the task I wanted to accomplish easy to get done	1	2	3	4	5	6	7
Would help me be effective	1	2	3	4	5	6	7
Would save me time in using it	1	2	3	4	5	6	7
Would help me be productive	1	2	3	4	5	6	7

Q12) In comparison to COMPETING / SUBSTITUTE products, I believe this product:	**Strongly Disagree**		**< - - - (neutral) - - - >**			**Strongly Agree**	
Would offer an IMPROVED level of quality compared to other products	1	2	3	4	5	6	7
Would increase my productivity MORE than other products do	1	2	3	4	5	6	7
Is MORE USEFUL than other products	1	2	3	4	5	6	7
Would enable me to accomplish tasks MORE QUICKLY than using other products	1	2	3	4	5	6	7

Q13) Please state how strongly you agree with the following statements:	**Strongly Disagree**		**< - - - (neutral) - - - >**			**Strongly Agree**	
I am familiar with most types of *INSERT PRODUCT CATEGORY*	1	2	3	4	5	6	7
Compared to most other people, I know more about *INSERT PRODUCT CATEGORY*	1	2	3	4	5	6	7
I know how to judge the quality and price of *INSERT PRODUCT CATEGORY*	1	2	3	4	5	6	7
I know alot about *INSERT PRODUCT CATEGORY*	1	2	3	4	5	6	7

Q14) Consuming this product:	**Strongly Disagree**		**< - - - (neutral) - - - >**			**Strongly Agree**	
Would reflect an image consistent with how I see myself	1	2	3	4	5	6	7
Would make others envy me	1	2	3	4	5	6	7
Would signal to other people I am of high status	1	2	3	4	5	6	7
Would signal to other people my personal uniqueness	1	2	3	4	5	6	7

Q15) Please state how strongly you agree with the following statements:	**Strongly Disagree**		**< - - - (neutral) - - - >**			**Strongly Agree**	
I often seek out information about new *INSERT PRODUCT CATEGORY*	1	2	3	4	5	6	7
When I see new *INSERT PRODUCT CATEGORY*, I am likely to trial it	1	2	3	4	5	6	7
Amongst my peers, I am usually the first to explore new *INSERT PRODUCT CATEGORY*	1	2	3	4	5	6	7
If I hear about new *INSERT PRODUCT CATEGORY*, I look for ways to experiment with it	1	2	3	4	5	6	7

Q16) To what extent do you agree with the following statements?	**Strongly Disagree**		**< - - - (neutral) - - - >**			**Strongly Agree**	
I could get help from others when using the product	1	2	3	4	5	6	7

I have the resources necessary to use the product	1	2	3	4	5	6	7
I have the knowledge and ability to use the product	1	2	3	4	5	6	7
Using the product is entirely within my control	1	2	3	4	5	6	7

Q17) How strongly do you agree with the following statements about the product?

	Strongly Disagree		< - - - (neutral) - - - >			Strongly Agree	
Switching to this product from another would create difficulties for me	1	2	3	4	5	6	7
Interacting with it would require a lot of effort	1	2	3	4	5	6	7
I would find it difficult to use	1	2	3	4	5	6	7
Learning to operate it would be difficult for me	1	2	3	4	5	6	7

Q18) How strongly do you agree with the following statements about the product?

	Strongly Disagree		< - - - (neutral) - - - >			Strongly Agree	
Using this product would make a good impression on those important to me	1	2	3	4	5	6	7
People I look up to would expect me to use this product	1	2	3	4	5	6	7
It is expected that people like me would use this product	1	2	3	4	5	6	7
People important to me would think that I should use this product	1	2	3	4	5	6	7

* * * Based on what you know about the product, your thoughts about it, and the product's price ($25.95): * * *

Q19a) What is the likelihood that this product:	Very Unlikely		< - - - (neutral) - - - >			Very Likely	
Would allow you to <u>save a lot of time and effort</u> when having your needs satisfied?	-3	-2	-1	0	1	2	3
Q19b)	Very Uncertain		< - - (neutral) - - >			Very Certain	
How **certain** are you of this?	1	2	3	4	5	6	7
Q20a) What is the likelihood that this product:	Very Unlikely		< - - - (neutral) - - - >			Very Likely	
Would make important others <u>think more highly</u> of you?	-3	-2	-1	0	1	2	3
Q20b)	Very Uncertain		< - - (neutral) - - >			Very Certain	
How **certain** are you of this?	1	2	3	4	5	6	7

Q21a) What is the likelihood that this product:	Very Unlikely		< - - - (neutral) - - - >			Very Likely	
Would <u>psychologically fit well</u> with your <u>self-image</u> or how you perceive yourself?	-3	-2	-1	0	1	2	3
Q21b)	Very Uncertain		< - - (neutral) - - >			Very Certain	
How **certain** are you of this?	1	2	3	4	5	6	7

Q22a) What is the likelihood that this product:	Very Unlikely		< - - - (neutral) - - - >			Very Likely	
Would be <u>physically safe</u>, and would NOT become unsafe, dangerous, or harmful?	-3	-2	-1	0	1	2	3
Q22b)	Very Uncertain		< - - (neutral) - - >			Very Certain	
How **certain** are you of this?	1	2	3	4	5	6	7

Q23a) What is the likelihood that this product:	Very Unlikely		< - - - (neutral) - - - >			Very Likely	
Would meet your needs, desires, or expectations in regards to <u>performance</u>?	-3	-2	-1	0	1	2	3
Q23b)	Very Uncertain		< - - (neutral) - - >			Very Certain	
How **certain** are you of this?	1	2	3	4	5	6	7
Q24a) What is the likelihood that this product:	Very Unlikely		< - - - (neutral) - - - >			Very Likely	
Would meet your expectations based on the amount of <u>money</u> you are required <u>to pay</u> for it?	-3	-2	-1	0	1	2	3
Q24b)	Very Uncertain		< - - (neutral) - - >			Very Certain	
How **certain** are you of this?	1	2	3	4	5	6	7

Q25) Please indicate your overall attitude towards the product: (Please circle the most appropriate answer)

Bad	1	2	3	4	5	6	7	**Good**
Negative	1	2	3	4	5	6	7	**Positive**
Unfavourable	1	2	3	4	5	6	7	**Favourable**

Q26) How <u>strongly</u> do you hold this <u>attitude</u>?

Very Weakly		< - >				Very Strongly
1	2	3	4	5	6	7

Q27) Which of the follow best describes your current BEHAVIOURAL INTENTIONS for this product *(please circle one):*

O	**RESISTANCE -** You DO NOT wish to purchase or further trial the product
O	**TRIAL -** You wish to have further opportunity to interact with, research or use the product before deciding to purchase or not
O	**PURCHASE -** You wish to buy the product in the future

The following section contains DEMOGRAPHIC items to help classify your responses.

Q28) What is your age? _____	Prefer to not say	**Q29) What is your gender?** (please circle)		MALE	FEMALE

Q30) What is the highest level of Education you have completed? (please circle)

High School Yr. 10	High School Yr. 12	Tafe / Polytechnic	Trade / Professional	University Undergraduate (not complete)	University Undergraduate (complete)	University Honours or Masters	Greater

Q31) What is your Annual Income (before tax)? (please circle)

Less than $15 000	$15 001 - $30 000	$30 001 - $45 000	$45 001 - $60 000	$61 000 - $75 000	$75 001 - $90 000	More than $90 001	Prefer to not say

Q32) What is your primary occupation? (please circle)

Student	Self Employed	Professional	Unemployed	Retired	Skilled Worker	Home Maker	Other_____

Q33) In which country were you born: _____	**Q34) In which country do you currently reside?**_____

Thank you for your contribution to this research, it is greatly appreciated!!!