Demystifying the Link between Emotional Loneliness and Brand Loyalty:

Mediating Roles of Nostalgia, Materialism and Self-brand Connections

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ABSTRACT

This paper explores the mechanism by which consumers use their self-brand connections and emotional attachment with brands to cope with the emotional loneliness that may be caused by the absence of intimate relationships with close others. The authors also examine the mediating roles played by nostalgia and materialism on the reinforcement of brand loyalty in this process using a multi-stage model. An online survey with 456 Malaysians working adults supports all the hypotheses. Specifically, emotional loneliness has positive associations with nostalgia and materialism, both of which mediate the positive associations between emotional loneliness and self-brand connections. Self-brand connections also mediate the positive associations of nostalgia and materialism with emotional brand attachment, which in turn mediates the positive association between self-brand connections and brand loyalty. The authors discuss the theoretical contribution and managerial implications of these findings.

Keywords: brand loyalty; consumer-brand relationship; emotional brand attachment; emotional loneliness; materialism; nostalgia

INTRODUCTION

The understanding of loneliness is based on the *need to belong* theory, which suggests that people have a basic need to belong (Baumeister & Leary, 1995) and an absence of intimate or social relationships may lead to loneliness (Weiss, 1973). A lack of perceived attachment with close others or social support and low self-esteem are the main predictors of loneliness (e.g., Ernst & Cacioppo, 1999; Jones, Freemon, & Goswick, 1981; Peplau & Perlman, 1982). However, most studies on loneliness have been conducted in psychology (e.g., Cacioppo & Patrick, 2008; Cacioppo et al., 2015; Peplau & Perlman, 1982) and sociology (e.g., Baumeister & Leary, 1995; Bowlby, 1969; Weiss, 1973) fields, with little attention from consumer researchers. As a result, there is no clear knowledge about the ability of consumers to use their psychological connections with their favorite brands to cope with their loneliness, especially when they are deprived from having satisfactory intimate relationships with their significant others. This study aims to address this important research gap.

A growing body of literature indicates that consumers develop a close relationship with brands (e.g., Fournier, 1998; Fournier & Alvarez, 2012; Grisaffe & Nguyen, 2011; Tan et al., 2018; Thomson, MacInnis, & Park, 2005). For example, consumers develop an emotional connection with brands and build long-term relationships with these brands similar to their relationships with other human beings (e.g., Escalas & Bettman, 2003, Malar et al., 2011, Park et al., 2010; Thomson et al., 2005). However, the exact mechanism by which consumers develop emotional bonding with brands is still unclear. Moreover, there is little research on how lonely consumers could develop emotional connections with brands as substitutes for humans to deal with their loneliness. As a result, brand managers may not have sufficient knowledge about how to help these lonely consumers use their brands to overcome their loneliness and avoid its potential negative outcomes for their subjective well-being.

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Specifically, this study aims to investigate how consumers may cope with emotional loneliness through compensatory consumption by developing close relationship with brands in a similar manner to interpersonal relationships. In this process, brands that carry symbolic meanings can become a part of consumers' extended selves (Belk, 1988) and used to define their actual and ideal selves (Sirgy, 1982). At the same time, lonely consumers could further expand their sense of self through a formation of close brand relationship to include brands as part of self (e.g., Reimann & Aaron, 2009; Reimann et al. 2012) to help them cope with loneliness. Thus, by building close relationships with brands, lonely consumers may be able to compensate for the lack of perceived emotional connectedness with significant others. Overall, this paper aims to make extend the current literature on the link between loneliness and compensatory consumption.

First, this paper is among the few efforts to examine the possibility that brands can provide transformational benefits to consumers overcome their loneliness by engaging in compensatory consumption and building close relationship with brands. Specifically, this study confirms that lonely consumers are more likely to engage in compensatory brand consumption (Mandel et al., 2017) as a means to cope with their loneliness. These lonely consumers are also likely to use brands symbolically to perceive brands as part of their extended selves (Reimann & Aaron, 2009) through self-brand connections (Escalas & Bettman, 2003) to represent who they are or want to become. Further, the authors hypothesize that when lonely consumers build strong emotional bonding with brands (Thomson et al., 2005), it could fulfill their lack of affiliation and affection needs, in a similar manner to human interactions, and this may bring a positive transformation to their lives.

Second, according to consumer-brand relationship theory (Fournier, 1998), consumers build relationships with brands in a similar manner to interpersonal human relationships. However, despite extensive literature on consumer-brand relationships and their impact on

brand loyalty (e.g., Japutra, Ekinci, & Simkin, 2018; Thomson et al., 2005), the process by which consumers build these close relationships with brands is still unclear, in particular with lonely consumers. In this paper, the authors posit and validate a multi-stage model to show that building a close relationship with brands is likely to occur in a sequential process of connection, attachment and commitment stages, which mirrors the development of interpersonal relationship (Fournier, 1998). These three stages are represented in the model with self-brand connection, emotional brand attachment and brand loyalty, respectively. In other words, the authors argue that emotionally lonely consumers may form self-brand connection in the short-term but this pattern is likely to be repeated again and again as they are likely to again feel lonely after some time, making them seek solace in the company of brands again. This repetition of self-brand associations over time may lead to the consumers being emotionally attached to the brands, which could eventually make them become loyal to the brands even when they are not lonely. This is consistent with consumer-brand relationship theory, which suggests that consumers can build relationships with brands similar to a social context (Fournier, 1998).

Third, extant literature examines the relationship between social isolation or loneliness and consumption. However, this study is among the first efforts to examine the topic of emotional loneliness in relation to compensatory consumption by excluding social loneliness from its conceptual model. The authors focus on emotional (and not social) loneliness in this study based on the role of brand relationships as the means to cope with the feeling of deprivation of intimacy relationships with significant others (e.g., family, friends and loved ones) in the case of emotional loneliness. Thus, emotional loneliness may lead to the development of a close relationship between the consumers and the brands.

To summarize, this paper develops a multi-stage conceptual model to explore the psychological mechanism by which consumers overcome their emotional loneliness and

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reinforce their brand loyalty through the mediating roles of nostalgia, materialism, and self-brand connections. The authors test all the hypothesized relationships in this multi-stage conceptual model using an online survey of 456 working adults in Malaysia and find support for all the hypotheses. Finally, the authors discuss all the findings and their implications along with some limitations of this study and directions for future research.

THEORETICAL BACKGROUND AND HYPOTHESES

Loneliness and Compensatory Consumption

Loneliness is defined as the discrepancy experienced between the desired and actual social relationships (Peplau & Perlman, 1982). According to Weiss (1973), there are two types of loneliness: emotional loneliness and social loneliness. Emotional loneliness is experienced when there is a lack of intimate relationship with the close others such as family, close friends and loved ones. In contrast, social loneliness is experienced when one has a lack of social networks in their social relationships. Loneliness can also be explained using the self-discrepancy theory (Higgins, 1987), which proposes that psychological discomfort or threat is experienced when an individual's actual self does not match with his or her ideal self. The activation of self-discrepancy produces an aversive feeling of sadness, disappointment, discouragement and loneliness (Mandel et al., 2017).

Past research suggests that lonely people may increase their social interactions with others to cope with loneliness (e.g., Masi et al., 2011). Ironically, some lonely people are found to be shy, introvert and lacking in social skills to develop meaningful social relationships with others (e.g., Jones, Hobbs, & Hockenbury, 1982). To overcome these issues, some lonely consumers may engage in self-regulatory efforts such as shopping for consumption and recreation (e.g., Kim, Kang, & Kim, 2005; Pettigrew, 2007) and interacting with the retail sales person (e.g., Rippé et al., 2018), which could help them cope with their loneliness.

Consumers can also use compensatory consumption to cope with and manage their self-discrepancy by enhancing self-esteem (e.g., Mandel et al., 2017; Woodruffe, 1997). Compensatory consumption is defined as "the desire for, acquisition, or use of products to respond to a psychological need or deficit" (Rucker & Galinsky, 2008, p. 207). Lonely consumers consume products to compensate for deficits in their self-esteem (Wang, Zhu, & Shiv, 2012) and to fulfil their lack of attachment and affiliation (e.g., Lastovicka & Anderson, 2014; Mead et al., 2011) through material consumption. However, the use of compensatory consumption with brands to alleviate loneliness has captured little attention from researchers.

Humanizing Brands as Relationship Partners

As humans are social beings, we cannot survive alone without the need to interact with others (Rokach, 2011). The 'need to belong' theory developed by Baumeister and Leary (1995) states that humans need to develop a lasting and significant interpersonal relationship to avoid the feeling of alienation and loneliness but social interaction with others may not be fulfilled easily. In this context, branding researchers argue that emotional connections with non-human entities, such as brands, can be achieved through the process known as brand anthropomorphism (e.g., Aggarwal & McGill, 2007; MacInnis & Folkes, 2017). According to MacInnis and Folkes (2017), the engagement of brand anthropomorphism can be achieved through different approaches based on three different perspectives: human-focused perspective, self-focused perspective and relationship-based perspective. Human-focused perspective suggests that brands can be humanized with human-like features, personalities and minds. Self-focused perspective indicates that there is a perceived congruity between the brand and the self. As a result, brand-self connection is formed. Finally, relationship-based perspective posits that humans develop brand relationships similar in a social context.

Fournier (1998) uses the concept of consumer-brand relationship to argue that consumers

form close relationships with brands similar to human relationships; they form emotional bonds with the brands, and regard brands as relationship partners. Thus, constructs such as, brand love (Carroll & Ahuvia, 2006), emotional brand attachment (Thomson et al., 2005), brand passion (Albert, Merunka, & Valette-Florence, 2013), self-brand connections (Escalas & Bettman, 2003) have been developed to reflect the intensity and strength of brand relationships. Brand love and emotional brand attachment are also used as predictors of brand loyalty (e.g., Ahuvia, 2005; Batra et al., 2012; Thomson et al., 2005).

The concept of humanizing brands as relationship partners could be explained using interpersonal theories such as *self-expansion* theory (Aron & Aron, 1986) , *attachment* theory (Bowlby, 1969) and *need to belong* theory (Baumeister & Leary, 1995). Self-expansion theory posits that close relationship is developed by including others into self to enhance their ability to accomplish their goals (Aron & Aron, 1986). In contrast, drawing on the attachment and need to belong theories, the lack of intimate relationship with close others could motivate the need for humanizing brands as relationship partners. Past research demonstrates that self-expansion theory could be extended to relate consumers' relationships with brands (e.g., Reimann & Aron, 2009; Reimann et al., 2012). Yet, there is hardly any research on the application of 'relationship partners' analogy in examining the close consumer relationships with brands to cope with loneliness.

Emotional Loneliness and Nostalgia

The need to belong is a fundamental need for human survival (Baumeister & Leary, 1995). As a result, the deprivation of having any intimate or social interaction with others will result in the feeling of loneliness. This study examines the lack of intimate relationship with close others such as friends, family and loved ones that give rises to the feeling of emotional loneliness (Weiss, 1973). Nostalgia is defined as the sentimental longing for the past and it is

often referred to as a positive emotion (Wildschut et al., 2006). Interestingly, past research has demonstrated that nostalgia is triggered when loneliness is experienced (e.g., Loveland, Smeesters, & Mandel, 2010; Wildschut et al., 2010; Zhou et al., 2008). Lonely people are more likely to engage in nostalgia to overcome their loneliness due to its psychological benefits, such as perceived social connectedness when the sense of belongingness and attachment with others is unmet (Wildschut et al., 2010; Zhou et al., 2008).

According to Sedikides et al. (2008), nostalgic reverie about close others such as friends, family and partners as the most common nostalgia object, while others include momentous events such as holiday, gatherings and anniversaries. For example, Zhou et al. (2008) demonstrate that the lonelier the consumers are, the more they engage in nostalgia reverie involving close others to increase perceived social support. Further, nostalgia makes it possible to bring positive past experiences to the surface, favoring a reconnection with positive emotions and contributing to one's feelings about the meaning of life (Routledge et al., 2008). Zhou et al. (2008) state that nostalgia is a sentimental longing for a personally experienced and valued past, referring to close others in the context of momentous life events. Nostalgia recreates meaningful emotional bonds with close others and, in the process, builds a renewed sense of emotional connectedness of affiliation and secure attachment (Zhou et al., 2012). Hence, the authors hypothesize as follows:

H1: Emotional loneliness relates positively to nostalgia.

Emotional Loneliness and Materialism

Richins and Dawson (1992) conceptualize materialism as the extent to which acquisition of material goods becomes the central activity in life and possession of material goods signals an individual's success and happiness. Shrum et al. (2014) argue that materialism may lead to a compensatory consumption mechanism wherein goods could be used as alternative means

to construct self-concepts to manage self-threats such as low self-esteem, high uncertainty and lack of personal control in life. Recent research also suggests lonely consumers are likely to engage in materialism to cope with loneliness (Gentina, Shrum, & Lowrey, 2018; Lastovicka & Sirianni, 2011; Pieters, 2013).

Past research shows that lonely consumers prefer minority endorsed products, whereas non-lonely consumers prefer majority-endorsed products (Wang et al., 2012). However, the product preference of lonely consumers shifts to majority-endorsed product when the consumption is in public because they may be afraid to be evaluated negatively by others when subject to public scrutiny (Wang et al., 2012). Moreover, lonely consumers prefer minority-endorsed product when the consumption is in private as it fits better with their feelings of loneliness (Wang et al., 2012). Based on the above, it seems that lonely consumers may relate to two selves (i.e., actual versus ideal self) to form self-brand connections. Thus, lonely consumers would generally select brands that are congruent with their actual self-identity. However, they may also select brands that are congruent with their ideal self for social approval, which suggests that loneliness may also trigger materialistic tendencies among consumers. Hence, as follows:

H2: Emotional loneliness relates positively to materialism.

Mediating Role of Nostalgia

An individual's identity construction comes from one life's experiences and those past experiences shared with other group members (Sedikides & Wildschut, 2018; Sedikides et al., 2008). Past research demonstrates that consumers who are deprived of relational needs are likely to have greater preferences for nostalgic products because nostalgia provides a reconnection with their past and shared consumption experiences (Loveland et al., 2010). Consumers use possessions and brands to communicate about their self-concepts to

themselves and others (e.g., Belk, 1988; Escalas, 2013; Ferraro, Escalas, & Bettman, 2011; Mittal, 2006). When the brands are incorporated into the consumers' self-concepts, self-brand connections are formed (Escalas & Bettman, 2003). Self-brand connections reflect the degree of which the brands may represent the consumers' self-concepts (Escalas & Bettman, 2003).

Fournier (1994) highlights the link between nostalgic connections and the self, in her seminal work on consumer-brand relationship theory. Specifically, Fournier (1994) defines nostalgic connections as "the connections forged between the brand and an earlier concept of self that have been stored in the person's memory" (p.137). In consumer research, nostalgia refers to the preference of objects from when one was younger (Schindler & Holbrook, 2003). Past research shows that nostalgia is a resource of the self (Vess et al., 2012) and it may be used to signal and reinforce consumer's self-identity through possessions (Richins, 1994a), consumption intentions for nostalgia-themed restaurants (Chen, Yeh, & Huan, 2014), effects of advertising evoked-vicarious nostalgia on brand heritage (Merchant & Rose, 2013) and nostalgic brands (Kessous, Roux, & Chandon, 2015).

According to Sedikides et al. (2008), nostalgia is an enabler of self-continuity. They argue that lonely people are motivated to engage in nostalgia reverie that link their past self to their present self to form self-continuity as a form of identity continuity. This is because identity discontinuity is considered as psychological threat and can cause negative emotional responses such as "fears, discontents, anxieties, or uncertainties" (Davis, 1979, p. 34). The maintenance of identity continuity to protect the integrity of self though nostalgia reverie (Sedikides et al., 2008) can be driven by self-verification motive. Self-verification theory (Swann, 1983) posits that individuals value their consistent sense of self, as they value stability and coherence in their lives (Swann, Rentfrow, & Guinn, 2003). Specifically, when self-threats are challenged, individuals would trigger the need for compensatory actions and desire for coherence that motivates self-verification (Swann & Brooks, 2012).

Based on the above discussion, it seems that when self-identity is evoked through nostalgia, lonely consumers may recreate their past by using symbolic representations of selves in the form of brands to construct their current self-identity drawn from past self-identity. Further, self-verification theory (Swann, 1983; Swann & Brooks, 2012) suggests that lonely consumers may be motivated to engage in compensatory consumption and likely to consume products that can give affirmation to their consistent sense of self when faced with the self-threat of loneliness. Therefore, lonely consumers may be influenced by a self-verification motive to develop self-brand connections with the brands that represent their actual self-identity, which is consistent with their past self-identity through nostalgia to maintain identity consistency as a means to cope with the self-threat of loneliness. As a result, they will be likely to have a positive evaluation of self to manage the self-threat of emotional loneliness by linking the past to the present life through nostalgia reverie. Hence,

H3: Nostalgia positively mediates the positive association between emotional loneliness on self-brand connections.

Mediating Role of Materialism

Materialism consists of a set of human values and goals that signal possessions, image, wealth and status (Kasser, 2016). In other words, people high in materialism place their value in acquisitions and possessions of materials objects as their life value (e.g., Kasser, 2016; Richins & Dawson, 1992). According to Burroughs and Rindfleisch (2002), materialism consists of self-enhancing values that signal the extrinsic goals of financial success, image and popularity. Drawing on the self-enhancement theory (Alice & Sedikides, 2009), materialistic people are motivated to approach their aspirations by constructing their ideal-self to represent who they want to become by engaging in materialistic consumption (Shrum et al. 2013). Materialism is also related to compensatory consumption (Shrum et al., 2014).

Compensatory consumption is motivated when self is threatened (Mandel et al., 2017). Self-discrepancy theory (Higgins, 1987) posits that self-threats such as deprivation of need to belong, lack of power or self-esteem could lead to discrepancy of self-concepts that affect self-worth. When individuals experience self-threats, they will purchase products to maintain or enhance their self-concepts. Therefore, people high in materialism engage in materialistic consumption to signal their self-concepts to manage their lack of relatedness, power or self-esteem (Shrum et al., 2014).

Materialism is also related to the social context of consumption (Fitzmaurice & Comegys, 2006). According to social identity theory (Turner, 2010), materialistic consumers construct their social identities by consuming products that are congruent to social approval (Shrum et al., 2013) because they may feel emotionally insecure and suffer from low self-worth (Chaplin & John, 2007). Thus, these consumers may seek material goods to compensate for their deficiencies of insecurities and self-doubt, which in turn could enhance their low self-worth (e.g., Chang & Arkin, 2002; Rindfleisch, Burroughs, & Wong, 2007). In this context, the authors combine the social identity theory (Turner, 2010), self-discrepancy theory (Higgins, 1987) and self-enhancement theory (Alice & Sedikides, 2009), to argue that people high in materialism would be more likely to use acquisition of brands as compensatory means to form self-brand connections to signal extrinsic goals (e.g., enhancing group affiliation through brand consumption) to enhance their ideal self in order to manage their self-threat when they experience emotional loneliness. Hence, as follows:

H4: Materialism positively mediates the positive association between emotional loneliness on self-brand connections.

Mediating Role of Self-brand Connections

In branding literature, early researchers argued that brands can be used to construct self-

identities and used as symbols to represent who the individual is (e.g., Belk, 1988; Elliott & Wattanasuwan, 1998). In this context, the construct of 'self-brand connections' represents the extent to which brands are connected to the consumers' self-identity (Escalas & Bettman, 2003). Hence, lonely consumers are likely to be motivated to resolve this self-discrepancy by self-regulating their loneliness through compensatory consumption (e.g., Mandel et al. 2017). As a result, when the lonely consumer's self-congruence (i.e., actual and ideal) is threatened, they may be motivated to have self-expansion by forming close relationship with brands that have symbolic attributes that relates to their sense of self. Drawing on the self-expansion theory (Aaron & Aaron, 1986), lonely consumers may expand their self by including the brands as part of self by forming a close relationship with them. Using the relationship partner metaphor (Fournier, 1998), even though brands can be humanized as relationship partners, not all brands are suitable as relationship partners. Hence, the formation of emotional brand attachment in a close brand relationship can only take place when consumers select brands as partners that fit with their self-identity. Accordingly, the authors argue that self-brand connections play an important mediating role in managing their self-identities with nostalgia and materialism respectively to form close brand relationships.

Nostalgia, Self-brand Connections and Emotional Brand Attachment

Nostalgia provides psychological benefits to manage the negative evaluations of self, such as having low self-esteem and feeling sense of insecurity by restoring their intrinsic self-identity to reflect who they truly are (e.g., Baldwin, Biernat, & Landau, 2015). Psychologists show that nostalgia allows people to create a sense of perceived self-continuity in which their current self-concept is linked to their past self-identity as a form of identity continuity (Sedikides et al., 2008; Sedikides et al., 2015). In consumer behavior literature, Ju et al. (2016) demonstrate that perceived self-continuity mediates the relationship between nostalgia advertisement and positive customer intent to purchase. Hence, nostalgia may enable lonely

consumers to alleviate the temporary feeling of loneliness as well as their negative self-evaluation by restoring their actual self-identity from the past as a form of perceived self-continuity. Moreover, lonely consumers may be able to overcome their loneliness by reconnecting with the brands used by them in the past to form self-brand connections. Subsequently, consumers may integrate brands into their self-concepts to foster a deep emotional bonding with the brand in the development of a close brand relationship to maintain proximity, emotional security and to avoid separation distress (Thomson et al., 2005). Therefore, as follows:

H5: Self-brand connections mediate the positive association between nostalgia on emotional brand attachment.

Materialism, Self-brand Connections and Emotional Brand Attachment

Consumers with higher scores on materialism use material possessions as symbolic goods to portray their self-image to others around them because their self-evaluations and appraisal of others are often based on external appearances (Shrum et al., 2013). Thus, material possessions become the basis of self-evaluation for people with higher scores on materialism to impress others and signal affiliation and success (Browne & Kaldenberg, 1997; Chaplin & John, 2007). In other words, lonely consumers may have a desire to represent their ideal self through materialistic consumption by purchasing popular brands that signal social status and affiliation because it may help them enhance their self-esteem in the absence of meaningful interpersonal relationships with significant others. Accordingly, a materialistic consumer may form an emotional attachment to a brand that could lead to a close relationship over time, which may even result in the consumer incorporating the brand as a part of his/her self in order to maintain the relationship. Therefore, self-brand connections could be an important mediating variable between materialism and emotional brand attachment for lonely consumers because purchasing brands congruent with their ideal self-concept may help them

establish strong self-brand connections. The authors hypothesize that such a process could lead to the formation of stronger emotional brand attachment, as follows:

H6: Self-brand connections mediate the positive association between materialism on emotional brand attachment.

Mediating Role of Emotional Brand Attachment

According to consumer-brand relationship theory (Fournier, 1998), consumers develop relationships with brands in a manner similar to social relationships. The emotional ties and connections found between consumers and brands lead to the development of emotional attachment towards brands (e.g., Grisaffe & Nguyen. 2011; Thomson et al., 2005). When strong emotional attachment towards the brands is developed, consumers show desire to maintain promixity, emotional security and safety (Thomson et al., 2005). Thus, strong emotional brand attachment is likely to foster a long-term brand relationship which may be reflected in the behavioral consequences of brand loyalty (Thomson et al., 2005). Hence, emotional brand attachment is an important driver of strong brand relationships (e.g., Fournier, 1998; Thomson et al., 2005). On the flip side, separation from the brands may lead to experiencing separation distress (Thomson et al., 2005).

The development process of a close relationship can be explained by self-congruity theory (Sirgy, 1982), attachment theory (Bowlby, 1969), and self-expansion theory (Aron & Aron, 1986). Drawing on the self-congruity theory (Sirgy, 1982), consumers form self-brand connections by choosing brands that are congruent with their past self-concept or ideal self-concept through nostalgia connection or materialistic consumption. Next, the motivation for the development of emotional attachment to brands can be drawn from self-expansion theory (Aron & Aron, 1986; Reimann & Aron, 2009), which explains that consumers expand to include others (e.g., brands) into the self in the development of close relationships.

Subsequently, after connections with the brands, it is important to foster a strong brand relationship with consumers (Fournier, 1998). Attachment theory (Bowlby, 1969), consumer-brand relationship theory (Fournier, 1998) and self-expansion theory (Aron & Aron, 1986) describe the importance of forming emotional attachment bonds between consumers and brands in building a strong brand relationship, which in turn is a predictor of brand loyalty (Thomson et al., 2005). Hence, as follows:

H7: Emotional brand attachment mediates the positive association between self-brand connections on brand loyalty.

Figure 1 summarizes all the hypotheses in a multi-stage conceptual model.

< Insert Figure 1 about here >

METHODOLOGY

Sample and Data Collection

This study used an online survey to collect 500 responses from a sample of working adults in Malaysia as they are more likely to face life events and experiences such as divorce, empty nest, death, and job changes, which in turn could trigger emotional loneliness. Additionally, they are more likely to indulge in nostalgia and have higher purchasing power to engage in materialistic behavior. Out of these 44 responses were incomplete, which resulted in 456 complete responses. Table 1 summarizes the sample profile. Participants were asked to choose one of four product categories (car, breakfast beverage, watch and jeans) and think of their favorite brand in that category when answering all the questions. All the four product categories have both public and private brand meanings, which may trigger either nostalgia or materialism, as expected in this study. Specifically, private meanings are subjective meanings which relates to the owner's personal experience, whereas public brand meanings carry social

meanings that are shared by the society in general (Richins, 1994b). For example, products such as breakfast beverage and car could denote family consumption and their emotional connections to close others or as socially acceptable products that signal group affiliations, status or pleasure depending on the importance of the brand meanings to the participants. Similarly, a watch or jeans may help consumers make a statement about their own personal fashion preferences and also signify their need to comply with social norms of their peer groups. Therefore, using these four product categories allowed the elicitation of a broad range of motivations for self-brand connections and emotional brand attachment in this study.

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Measures

All the scales were adopted from the existing literature. Loneliness was measured with ten-item emotional loneliness subscale of Revised UCLA (Version 3) by Russell (1996); nostalgia with seven-item Southampton Nostalgia Scale (SNS) by Barrett et al. (2010); materialism with nine items from Richins (2004); self-brand connections with seven-item scale by Escalas and Bettman (2003); emotional brand attachment with a ten-item scale by Thomson et al. (2005); and brand loyalty with six items adapted from Brakus, Schmitt, and Zarantonello (2009). Likert scales were used for self-brand connections, emotional brand attachment and brand loyalty (1 = strongly disagree to 7 = strongly agree), and multiple response scales for emotional loneliness (1 = never to 7= very often) and nostalgia (first four items: 1 = not at all and 7 = very much, and the remaining three items: 1 = never and 7= very often). Demographic characteristics such as age, gender, marital status, ethnicity, education and income level were also collected.

DATA ANALYSIS AND RESULTS

The authors use Partial Least Square Structural Equation Modelling (PLS-SEM) with

SmartPLS version 3.3.2 software (Ringle, Wende, & Becker, 2015) for data analysis because this study uses well-established scales to measure all the constructs and its main aim is to predict the variance explained in the key outcome variable (brand loyalty) rather than to focus on the covariance among the various constructs in the model.

< Insert Table 2 about here >

Measurement Model

Table 2 shows the descriptive properties of all the scale items. All factor loadings are higher than .70. Composite reliability of all the constructs is higher than the threshold value of .70 (Hair et al., 2017), as shown in Table 3. Average variance extracted (AVE) values for all the constructs are higher than the recommended cut-off value of .5, indicating high convergent validity (Hair et al., 2017). Discriminant validity was measured using two criteria recommended by Fornell and Larcker (1981) and the Hetero-trait Mono-trait ratio (HTMT) by Henseler et al. (2015). First, as per Fornell and Larcker (1981) criterion, discriminant validity was confirmed because the correlations between each construct were lower than the square root of the AVE for each construct as shown in Table 3. All HTMT values are below the threshold value of .85 (Henseler et al., 2015), further confirming discriminant validity. To address common method bias (CMB), the authors use the full collinearity VIF approach (Kock, 2015). As shown in Table 3, all the full collinearity VIF values (1.10 - 2.91) are less than the prescribed threshold of 3.3, hence this study is free of CMB (Kock, 2015).

< Insert Table 3 about here >

Structural model

The goodness of fit for the model is tested using SRMR (standardized root mean square residual) as advised by Henseler et al. (2015) because it estimates the discrepancy between the observed and model-implied correlations (Hair et al., 2017). A value of .054 for SRMR

indicates a good fit of the model as it is lower than the recommended cut-off value of .08 by Hu and Bentler (1999). Next, the predictive power of the model is analyzed using R^2 values; wherein, emotional loneliness explains 3% variance in nostalgia and 8% in materialism respectively, whereas, nostalgia and materialism explain 15.2% variance in self-brand connections. These three constructs together explain 56.9% variance in emotional brand attachment, which together with self-brand connections explains 47.9% variance in brand loyalty. The f^2 statistic show that the effect of self-brand connections is the strongest on emotional brand attachment (1.32), followed by the effect of emotional brand attachment on brand loyalty (.28) and materialism on self-brand connections (.11).

Next, the authors use blindfolding technique to confirm the predictive relevance of the proposed model with the Stone–Geisser Q^2 values for all the endogenous latent constructs being greater than the threshold value of zero (Hair et al., 2017). Finally, the authors use the PLS Predict feature of SmartPLS 3 software by looking at the RMSE (root mean squared error), LM (linear regression model) and $Q^2_{predict}$ (predicted quality) values as recommended by Shmueli et al. (2019). As shown in Table 2, the RMSE values for all the indicators are lower than their respective LM values and all the $Q^2_{predict}$ values are higher than zero. All these results suggest high predictive power of the model (Shmueli et al., 2019).

Based on the above results, the model seems to provide a good fit to the data and is suitable for further analysis. Hence, the authors test the hypothesized relationships in the proposed multi-stage model using a bootstrapping procedure with 5000 samples. Table 4 shows all the results including the variance inflation factor (VIF), which are all well below the threshold value of 5; hence, multi-collinearity is not a concern in this study (Hair et al., 2017). All the mediation effects are tested by the absence of a zero value between the lower level bootstrapped confidence interval (LLCI) and the upper level bootstrapped confidence interval (ULCI), as recommended (Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010).

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All the demographic characteristics are included in the model as control variables, including age, education and income as continuous variables and gender (male vs. female), ethnicity (Chinese vs. Non-Chinese) and marital status (Single vs. Married) as dummy variables.

< Insert Table 4 about here >

First, emotional loneliness has a significant positive relation to both nostalgia (H1: β = .18, p < .01, CI [.06, .29]) and materialism (H2: β = .28, p < .001, CI [.19, .38]). Next, the indirect links from emotional loneliness to self-brand connections via nostalgia (H3: β = .03, p < .05; CI [.01, .06]) and materialism are statistically significant (H4: β = .09, p < .001; CI [.05, .14]). Similarly, the indirect links from nostalgia (H5: β = .13, p < .01; CI [.06, .20]) and materialism (H6: β = .23, p < .001; CI [.16, .31]) to emotional brand attachment via self-brand connections are statistically significant. Finally, the indirect link between self-brand connections and brand loyalty via emotional brand attachment is also statistically significant (H7: β = .42, p < .001; CI [.36, .52]). All these results provide initial evidence of support for all the hypotheses (H1-H7).

Next, the authors also tested the indirect paths from emotional loneliness to brand loyalty via nostalgia and materialism, self-brand connections and emotional brand attachment, and found these sequential links to be statistically significant. Therefore, nostalgia, self-brand connections and emotional brand attachment sequentially mediate the relationship between emotional loneliness and brand loyalty (β = .01, p < .05; CI [.00, .03]). Similarly, materialism, self-brand connections and emotional brand attachment sequentially mediate the relationship between emotional loneliness and brand loyalty (β = .04, p < .001; CI [.02, .06]). These results further support the multi-stage conceptual model proposed in this paper.

Finally, none of the control variables (age, gender, ethnicity, marital status, education and income) have any significant effect on the final outcome variable (brand loyalty) as shown in

Table 4. To further investigate their impact on all the relationships in the model, the authors use multi-group analysis by creating sub-groups using all the demographic characteristics. Table 5 presents all the results from the multi-group analysis.

< Insert Table 5 about here>

The results show no significant (p > .05) differences across the sub-groups for age (below 50 years vs. 50 years and above), ethnicity (Chinese vs. Non-Chinese) and monthly income (less than RM 7,000 vs. more than RM 7,000). However, gender shows significant differences for the links between emotional loneliness and self-brand connections via nostalgia ($\Delta\beta$ = .08, p < .05), nostalgia and emotional brand attachment via self-brand connections ($\Delta\beta$ = .24, p < .01) as well as the full link from emotional loneliness to brand loyalty ($\Delta\beta$ = .37, p < .05). Similarly, marital status shows significant differences for the links between nostalgia and emotional brand attachment via self-brand connections ($\Delta\beta$ = .16, p < .05) as well as self-brand connections and brand loyalty via emotional brand attachment ($\Delta\beta$ = .20, p < .05). Finally, education level shows a significant difference in the link between emotional loneliness and materialism ($\Delta\beta$ = .25, p < .05). Next, the authors drawn upon relevant literature and their understanding of Malaysia culture to interpret these results.

First, female (vs. male) participants show stronger links for the path from emotional loneliness to brand loyalty via nostalgia, self-brand connections and emotional brand attachment. The results could be due to the conventional gender roles in the conservative Malaysian society in which women generally face more pressures than men due to their multiple roles (e.g., caring mother, wife, housekeeper etc.). Hence, they spend more time at home and are likely to experience more emotional loneliness and nostalgia. In contrast, men mainly play the role of bread-winner and spend more time outside home socializing with their friends and colleagues, hence, they are less likely to experience loneliness or engage in

nostalgia. Moreover, being a collective society with a higher power distance and status consumption, women are also under a lot of pressure to conform to the social rules and norms. Hence, women are more likely to use brands to compensate for the lack of their social connections in order to live up to the standards and duties of a complete woman in the traditional Malaysian society, resulting in strong self-brand connections and brand loyalty.

Second, married (vs. single) participants show stronger links from nostalgia to brand loyalty via self-brand connections and emotional brand attachment. The authors speculate that it may be because many married couples may suffer from unsatisfying relationships with their partners and a lack of connections with friends outside their families, whereas singles are likely to have more active social lives and the freedom to choose their friends and partners with no long-term commitment. Hence, married people may be more likely to experience emotional loneliness that could in turn trigger nostalgia and the likelihood to form strong psychological connections with brands to compensate for their lack of close connection with significant others. This is consistent with past literature that links the feelings of deprivation in relationships to the quality rather than quantity of relationships as depicted by the 'alone in the crowd' phenomenon (e.g., Cacioppo, Fowler, & Christakis, 2009).

Finally, non-postgraduates (vs. postgraduates) show a stronger connection between emotional loneliness and materialism. This could be due to the non-postgraduates having a lower social status and hence, a higher need to meet materialistic values goals (e.g., social approval and self-esteem) for them to construct their self-concepts to define who they are compared to post-graduates. Accordingly, when these non-postgraduates find a brand congruent with their self-concepts, they may form a strong emotional connection with this brand and develop brand loyalty as it may become a part of their extended selves (Aron et al., 2013; Reimann & Aron, 2009).

General Discussion

This study examines how emotionally lonely consumers may engage in compensatory brand consumption by forming close relationships with brands. Specifically, the authors hypothesize that consumers who suffer from loneliness would engage in nostalgia or materialism to form self-brand connections through compensatory consumption. Further, they would develop a close relationship with brands similar to human relationship. A multi-stage model was developed to study the mediating roles of nostalgia, materialism, self-brand connections, and emotional brand attachment in the process by which emotional loneliness may lead to brand loyalty. To the best of authors' knowledge, this is one of the first studies to explore a dual pathway through nostalgia and materialism to delineate the process by which emotionally lonely consumers develop close relationships with brands.

This study confirms that emotional loneliness may trigger nostalgia and materialism that in turn could prompt lonely consumers to develop self-brand connections and emotional attachment with their favorite brands in order to compensate for their lack of close human relationships. These findings extend the ideas presented by the *need to belong* theory (Baumeister & Leary, 1995) that human survival depends upon having satisfying intimate relationships with significant others and broader social relationships. Specifically, this study finds the self-brand connections and emotional brand attachment as possible psychological benefits of nostalgia and materialism, thereby supporting the results reported in the extant literature about the enhancement of perceived emotional connectedness with significant others through nostalgia reverie (e.g., Zhou et al., 2008), and the role of materialism in enhancing the materialistic values and goals of meeting one's aspirations towards success in life (e.g., Shrum et al., 2013) in the context of loneliness.

This study also highlights the possible role of brands as agents of emotion regulation,

which has been underexplored in the extant literature. First, consistent with the compensatory consumption literature (e.g., Mandel et al., 2017), the results provides useful insights about the role of brands as compensatory means to manage a self-threat like emotional loneliness. Specifically, besides the direct effects of loneliness on nostalgia and materialism, this study also extends branding literature by showing that consumers may form connections with and develop attachment with the brands they feel close to, and use the symbolic meanings attached to those brands as an indirect route to express themselves. Second, despite extensive research on consumer-brand relationships (e.g. Japutra et al., 2014; Thomson et al., 2005), the exact mechanism used by lonely consumers to build close relationships and emotional attachment with brands and brand loyalty is still not clear. This study addresses this research gap with a multi-stage conceptual model to show how lonely consumers can build close relationships with brands and develop emotional attachment with these brands using a process similar to forming human relationships.

Finally, this research extends the theoretical understanding that the congruency of brand meanings and the self-identities values in materialism could transform people's lives. While many studies suggest that materialism may lead to negative well-being (e.g., Burroughs & Rindfleisch, 2002; Kasser, 2016; Kasser & Ahuvia, 2002), this study shows that materialism can be used by consumers as a means to manage self-threats such as loneliness. The findings support Shrum et al. (2014)'s argument that the good qualities of materialism have not been recognized and that materialism can be used as a means to construct self-concepts to manage self-threats through compensatory consumption. Specifically, this research provides useful insights into the process by which emotionally lonely consumers may develop relationships with brands as a mechanism to cope with their loneliness through brand consumption.

Theoretical Contributions

This study makes three specific theoretical contributions. First, this study provides useful insights into the process by which emotional loneliness influences consumers' connections, attachment and loyalty towards brands, and using a theoretical framework to explain how lonely consumers may build close relationships with brands in a manner similar to forming interpersonal relationships. Specifically, this study clarifies a three-stage mechanism used by lonely consumers to build close relationships with brands by regarding them as relationship partners, namely a) build self-brand connections, b) emotional brand attachment, and c) brand loyalty. Consequently, emotionally lonely consumers may use nostalgia and materialism to form close self-brand connections in response to emotional pains caused by loneliness, which in turn may lead to strong emotional brand attachment and brand loyalty over time.

In the first stage (connection), consumers develop an emotional connection with brands to construct their actual or ideal selves. In this stage, self-brand connections is formed to construct self-identity that is congruent with the brand. In the second stage (attachment), consumers begin to develop an intense emotional bond with the brand, resulting in a strong emotional attachment with the brand. Finally, in the third stage (commitment), the strong emotional attachment to the brand leads to a long-term brand relationship, which may result in brand loyalty. All these relationships in the brand relationship building process were validated by testing the proposed multi-stage model in the empirical study.

In this study, the psychological functions of nostalgia and materialism were investigated. It was postulated that emotional loneliness is positively related to nostalgia and materialism. As hypothesized, results reveal that emotional loneliness triggers both nostalgia and materialism. The results are consistent with prior loneliness research on nostalgia (Wildschut et al., 2010; Zhou et al., 2008) and materialism (Gentina et al., 2018; Lastovicka & Anderson,

2014; Pieters, 2013). Past research shows that nostalgia fosters social connectedness and retrieve the connections with significant others through nostalgia reverie (Zhou et al., 2008). Empirical evidence also confirms the association between materialism and compensatory consumption where consumption is used as an alternative means to overcome uncertainty and bolster self-esteem among lonely consumers (Gentina et al., 2018; Lastovicka & Anderson, 2014). Thus, the notion that nostalgia and materialism could be used as self-regulatory psychological means to cope with loneliness, which subsequently leads to enhanced perceived intimate emotional connectedness were further validated in this study.

Additionally, this research focuses on the role of nostalgia and materialism for lonely consumers. Based on the past literature of nostalgia and materialism (Sedikides et al. 2008; Shrum et al., 2013), the findings suggest that the mechanisms to construct actual self-concept through nostalgia and ideal self-concepts through materialism may help lonely consumers form self-brand connections. As hypothesized, significant relationships were found between the interrelationships between loneliness, nostalgia and the mediating brand relationship variables such as self-brand connections and emotional brand attachment on brand loyalty.

It is also noteworthy that the indirect effect of loneliness on loyalty was found significant through self-brand connections. This supports the rationale that nostalgia could help lonely consumers develop their actual self-concept that may be congruent with their past self. The connection of the past to present for lonely consumers was first formed through self-brand connections as a means of perceived self-continuity prior to establishing a strong emotional attachment to brands, which in turn, leads to brand loyalty. This research suggests that brand loyalty denotes the commitment of a long-term relationship similar to human relationship and it was formed over time through the emotional attachment to brands which are congruent to self-concept among lonely consumers.

Managerial implications

This research provides several managerial implications. First, this research provides useful guidance for brand managers to construct symbolic meanings of brands for lonely people to connect to their actual and ideal selves. The findings reveal the psychological needs of the lonely consumers that involves intrinsic needs of intimacy relatedness and extrinsic need of aspirations. The results revealed that nostalgia is triggered to form self-brand connections as a means to enhance perceived emotional connectedness with significant others to cope with emotional loneliness. Thus, the findings may imply that the brand managers could introduce nostalgia brands (Kessous et al., 2015) as a means to rekindle momentary moments with close others to enhance perceived emotional connectedness with lonely people.

The findings suggest that in order to enhance their desire to have a consistent self, emotional lonely consumers could consume nostalgia brands as a representation to self-verify that their actual self is consistent with their past self. On the other hand, the findings of the study may imply that emotional lonely people have the desire to enhance their ideal self, thus, they would engage in materialism to form self-brand connections. Thus, the findings may draw implications to brand managers could look into the possibility of developing emotional branding strategy that focuses on building emotional connections with significant others or relating brand aspirations to various materialism values goals such as signaling social approval, success and group affiliation as brand meanings for newly launched products to serve the psychological needs of the lonely people.

Second, this finding further identifies an emerging and neglected sizable segment, namely the lonely customers as loyal customers. Thus, organizations and brand managers should place importance on devising loyalty program that focuses on building relationship marketing through rewards points, gifts or special treatment such as personalization through one to one

marketing strategy to retain lonely customers to ensure their long-term profitability. Third, results may help organizations to implement social marketing campaigns with creative communication message through nostalgia to reach out to lonely consumers to cater to their emotional and social well-being needs. Fourth, this study also explains how some lonely people may combat loneliness using a personal and convenient approach by regulating the negative emotion of loneliness as well as enhancing personal aspirations and self-esteem through brand consumption. Lastly, policy makers could offer incentives to organizations to take priority in promoting brands as a means to cope with loneliness in their marketing campaigns targeting lonely consumers.

Limitations and Future Research

This paper has a few limitations that future research may address. First, this study did not find any significant influence of ethnicity on all the constructs and their relationships with each other. However, it could be because this study used mainly Chinese participants (87%) in a single country (Malaysia), thus it may not have captured the impact of culture in a significant manner. Hence, more studies with consumers from diverse cultural and socio-economic backgrounds would help test the generalizability of results reported in this paper. Second, this study used a cross-sectional design, hence it cannot help establish causality of the hypothesized relationships in the multi-stage conceptual model. Future research may address this limitation by using longitudinal or experimental designs. Future research may also extend the conceptual model by adding other variables, such as self-gifting (Weisfeld-Spolte, Rippé, & Gould, 2015) or brand anthropomorphism (Golossenko, Pillai, & Aroean, 2020) as mediators and consumer well-being (Ahuvia, Scott, & Bilgin, 2010) as an outcome.

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Figure 1. Conceptual Model
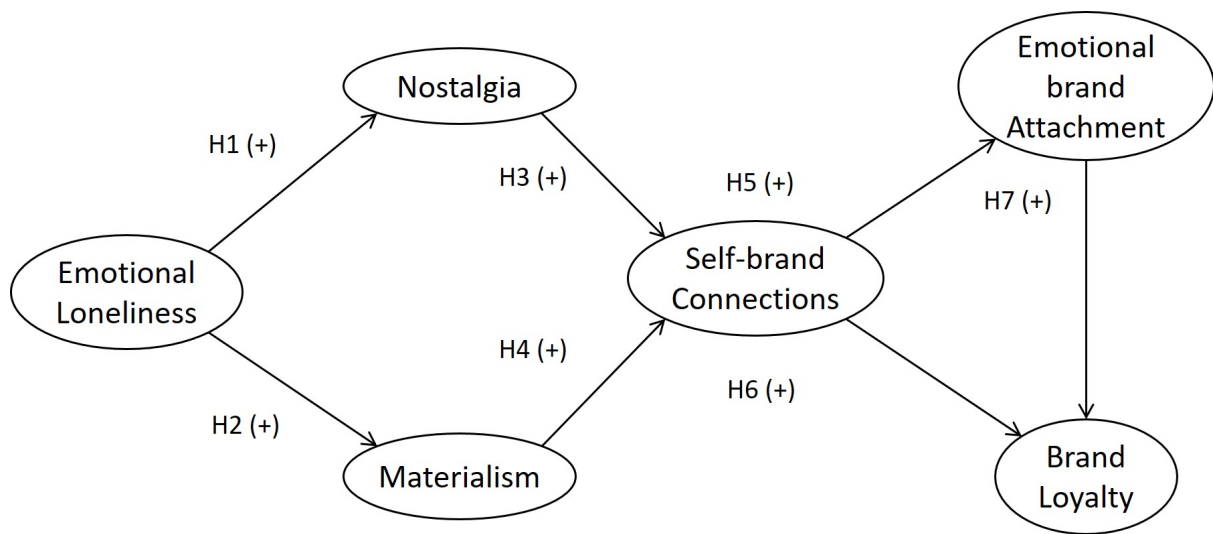
Table 1. Sample Profile

Characteristics	Frequency	Percentage (%)
Age Group (years)		
20 - 29	77	16.9
30 - 39	115	25.2
40 - 49	148	32.5
50 - 59	83	18.2
60 - 69	27	5.9
70 - 79	6	1.3
Gender		
Male	199	43.6
Female	257	56.4
Ethnicity		
Malay	39	8.6
Chinese	396	86.8
Indian	12	2.6
Others	9	2.0
Marital Status		
Single	213	46.7
Married	243	53.3
Highest Education Level		
Primary School	1	0.3
High School	33	7.2
Bachelor	64	14.0
Postgraduate	231	50.6
Professional Certification	127	27.9
Monthly Household Income		
Less than RM3,000	83	18.2
RM3,000 - RM6,999	117	25.7
RM7,000 - RM15,999	160	35.1
RM16,000 - RM24,999	53	11.6
RM25,000 and above	43	9.4

Table 2. Scale items

Item Code	Scale Item	M	SD	λ	RMSE	LM	Q²
	Emotional loneliness						
EL1	How often you feel that you lack companionship?	3.61	1.50	.79	-	-	-
EL2	How often do you feel that there is no one you could turn to?	3.45	1.60	.80	-	-	-
EL3	How often do you feel alone?	3.41	1.63	.84	-	-	-
EL4	How often do you feel that you are no longer close to anyone?	3.42	1.51	.81	-	-	-
EL5	How often do you feel that your interests and ideas are not shared by those around you?	3.78	1.40	.73	-	-	-
EL6	How often do you feel left out?	3.49	1.44	.81	-	-	-
EL7	How often do you feel that your relationships with others are not meaningful?	3.26	1.36	.77	-	-	-
EL8	How often do you feel no one really knows you well?	3.74	1.55	.76	-	-	-
EL9	How often do you feel isolated from others?	3.36	1.55	.85	-	-	-
EL10	How often do you feel that people are around you but not with you?	3.84	1.38	.76	-	-	-
	Nostalgia						
NOS1	How valuable is nostalgia to you?	4.96	1.36	.88	1.36	1.37	0.01
NOS2	How important is it for you to mind the nostalgia experience?	4.81	1.35	.91	1.34	1.36	0.01
NOS3	How significant is it for you to feel nostalgia?	4.67	1.37	.92	1.36	1.39	0.01
NOS4	How prone are you to feel nostalgia?	4.53	1.38	.93	1.37	1.38	0.02
NOS5	How often do you experience nostalgia?	4.35	1.34	.88	1.32	1.33	0.03
NOS6	Generally speaking, how often do you bring to mind nostalgia experience?	4.37	1.35	.89	1.34	1.37	0.02
	Materialism						
MAT1	I like a lot of luxury in my life	3.60	1.72	.73	1.68	1.70	0.04
MAT2	Buying things gives me a lot of pleasure	4.01	1.66	.71	1.65	1.67	0.01
MAT3	My life would be happier if I owned certain things I don't have	4.49	1.68	.77	1.65	1.67	0.04
MAT4	I would be happier if I could afford to buy more things	4.88	1.67	.79	1.63	1.68	0.04
MAT5	It bothers me that I can't afford to buy things I like	3.82	1.76	.73	1.71	1.73	0.06
MAT6	The things I own say a lot about how well I'm doing	4.00	1.72	.81	1.69	1.73	0.04

		M	SD	λ	RMSE	LM	Q²predict
MAT7	I like to own things that impress people	3.23	1.73	.77	1.71	1.71	0.03
MAT8	I admire people who own expensive homes, cars, clothes	3.42	1.72	.77	1.74	1.74	0.06
Self-brand connections							
SBC1	The brand reflects who I am	4.77	1.55	.88	1.55	1.58	0.01
SBC2	I can identify myself with the brand	4.77	1.58	.87	1.59	1.62	0.00
SBC3	I feel a personal connection to this brand	4.82	1.56	.86	1.56	1.61	0.01
SBC4	I use this brand to communicate who I am to other people	4.11	1.74	.87	1.74	1.78	0.01
SBC5	I think this brand helps me become the type of person I want to be	4.24	1.71	.86	1.70	1.72	0.02
SBC6	I consider this brand to be "me" (it reflects who I consider myself to be or the way that I want to present myself to others)	4.31	1.71	.90	1.71	1.75	0.01
SBC7	The brand suits me well	5.32	1.36	.76	1.35	1.39	0.01
Emotional brand attachment							
EBA1	My feeling towards this brand is "affectionate"	4.92	1.40	.84	1.40	1.44	0.01
EBA2	My feeling towards this brand is "loved"	4.75	1.51	.87	1.51	1.56	0.01
EBA3	My feeling towards this brand is "peaceful"	4.47	1.54	.80	1.54	1.57	0.01
EBA4	My feeling towards this brand is "friendly"	4.88	1.41	.77	1.42	1.45	0.01
EBA5	My feeling towards this brand is "attached"	4.77	1.54	.87	1.54	1.58	0.01
EBA6	My feeling towards this brand is "bonded"	4.46	1.61	.90	1.60	1.65	0.01
EBA7	My feeling towards this brand is "connected"	4.73	1.58	.84	1.57	1.61	0.02
EBA8	My feeling towards this brand is "passionate"	4.71	1.59	.85	1.59	1.62	0.01
EBA9	My feeling towards this brand is "delighted"	5.08	1.35	.80	1.35	1.39	0.01
EBA10	My feeling towards this brand is "captivated"	4.69	1.47	.82	1.47	1.52	0.01
Brand loyalty							
BL1	I consider myself loyal to this brand	5.61	1.39	.88	1.61	1.65	0.01
BL2	I am committed to this brand	5.18	1.49	.74	1.67	1.72	0.01
BL3	I would be willing to pay a higher price for this brand over other brands	5.22	1.46	.76	1.22	1.25	0.01
BL4	I will buy this brand as my first choice	4.64	1.61	.83	1.31	1.34	0.01
BL5	I intend to keep purchasing this brand	4.58	1.67	.90	1.50	1.52	0.01
BL6	I will recommend this brand to others	5.51	1.22	.88	1.61	1.65	0.01

Note: M = Mean; SD = Standard deviation; λ = Factor loading; RMSE = Root Mean Squared Error; LM = Linear Regression Model; Q²predict = Predicted Quality

Table 3. Correlation Matrix

	BL	EBA	EL	MAT	NOS	SBC
Brand loyalty (BL)	**.83**					
Emotional brand attachment (EBA)	.68	**.84**				
Emotional loneliness (EL)	.09	.10	**.79**			
Materialism (MAT)	.26	.34	.28	**.76**		
Nostalgia (NOS)	.20	.24	.18	.26	**.90**	
Self-brand connections (SBC)	.58	.75	.11	.36	.25	**.86**
Mean	5.12	4.75	3.54	3.92	4.62	4.62
Standard deviation	1.21	1.26	1.19	1.31	1.22	1.38
Average Variance Extracted	.69	.73	.71	.81	.58	.63
Composite Reliability	.93	.95	.96	.96	.92	.94
Full Collinearity VIF Values	1.90	2.91	1.10	1.27	1.13	2.41

Note: *Figures in diagonal are the square roots of average variance extracted (AVE)*

Table 4. Multi-stage Mediation Model Results

H#	Relationship	β	p-value	Confidence interval		Results	VIF
				LLCI (5%)	ULCI (95%)		
H1	EL → NOS	.18	.002	.06	.29	Supported	1.00
H2	EL → MAT	.28	.000	.19	.38	Supported	1.00
H3	EL → NOS → SBC	.03	.024	.01	.06	Supported	--
H4	EL → MAT → SBC	.09	.000	.05	.14	Supported	--
H5	NOS → SBC → EBA	.13	.001	.06	.20	Supported	--
H6	MAT → SBC → EBA	.23	.000	.16	.31	Supported	--
H7	SBC → EBA → BL	.42	.000	.36	.52	Supported	--
	EL → NOS → SBC → EBA → BL	.01	.034	.00	.03	--	--
	EL → MAT → SBC → EBA → BL	.04	.000	.02	.06	--	--
C1	Age → BL	.02	.615	--	--	--	1.27
C2	Gender → BL	.04	.217	--	--	--	1.07
C3	Ethnicity → BL	.03	.501	--	--	--	1.01
C4	Marital status → BL	.02	.638	--	--	--	1.32
C5	Education → BL	.03	.413	--	--	--	1.04
C6	Income → BL	-.06	.098	--	--	--	1.14

Note: β (Standardized Path Coefficient); EL (Emotional loneliness); NOS (Nostalgia); MAT (Materialism); SBC (Self-brand connections); EBA (Emotional brand attachment)

Table 5. Control Variables: Multi-group Analysis

H#	Relationship	Age		Gender		Ethnicity		Marital Status		Education level		Monthly income	
		Δβ	p-value	Δβ	p-value	Δβ	p-value	Δβ	p-value	Δβ	p-value	Δβ	p-value
1	EL → NOS	.16	.16	.10	.40	.17	.29	.01	.96	.08	.45	.00	.99
2	EL → MAT	.03	.76	.13	.18	.04	.69	.05	.59	.25	.01	-.09	.34
3	EL → NOS → SBC	.03	.27	.08	.01	.33	.60	.38	.16	.20	.49	-.00	.85
4	EL → MAT → SBC	-.05	.32	.02	.60	.60	.35	.02	.75	-.04	.41	-.04	.65
5	NOS → SBC → EBA	.00	.99	.24	.00	.18	.89	.16	.03	-.12	.13	-.02	.78
6	MAT → SBC → EBA	-.17	.20	-.04	.59	.14	.18	-.00	.97	.13	.65	.00	.62
7	SBC → EBA → BL	-.04	.74	.71	.48	.00	.95	.20	.05	-.07	.48	.02	.89
	EL → NOS → SBC → EBA → BL	.01	.33	.37	.01	-.01	.63	.02	.85	-.01	.42	.00	.82
	EL → MAT → SBC → EBA → BL	.02	.31	.02	.44	-.02	.60	.24	.23	-.02	.30	.02	.40
CI	Age → BL	-	-	.00	.97	.02	.85	-.11	.15	.07	.37	.17	.03
C2	Gender → BL	.04	.53	-	-	-.03	.77	-.03	.70	.09	.23	.06	.39
C3	Ethnicity → BL	-.03	.67	-.03	.75	-	-	.77	.38	-.09	.21	-.09	.29
C4	Marital status → BL	-.14	.53	.13	.88	.07	.59	-	-	-.01	.87	-.10	.21
C5	Education → BL	.00	.97	.06	.45	-.28	.82	-.01	.92	-	-	-.03	.64
C6	Income → BL	-.02	.02	.89	.24	-.12	.34	.03	.73	-.09	.21	-	-

Note: Δβ = Difference in standardized beta coefficients; EL (Emotional loneliness); NOS (Nostalgia); MAT (Materialism); SBC (Self-brand connections); EBA (Emotional brand attachment); BL (Brand Loyalty)