

**Doctor of Philosophy - Information Systems
School of Management and Marketing**

**Electronic Government in Saudi Arabia: Influence of Culture and
Impact on Compliance**

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**This thesis is presented for the Degree of
Doctor of Philosophy
of
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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.

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 HRE2019-0699 (15 October 2019) and HRE2020-0481 (28 August 2020).

Abdullah Aldarazi

28 January 2022

Dedication

This dissertation is dedicated to my mother, Masoumah Alshamlawe, wife, Zainab Alfulful, and children, Fatima, Mohammed, and Ali, for their continued support, encouragement, warmth, and love.

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In the name of Allah, the Most Gracious, the Most Merciful

“So, verily, with the hardship, there is relief. Verily, with the hardship, there is relief”
(94:5-6).

After thanking the Almighty Allah for all the blessings and guidance to finish this thesis, I would like to express my gratitude to several people, without whom I would not be able to complete my thesis.

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Abstract

Governments worldwide continue to roll out a wide array of e-government systems, which are becoming central to government employees' daily work. This project aims to propose and test a theoretical model of the influence of organisational culture on the use of such systems, and the impact of their use on transparency, accountability and compliance in public organisations. The study is situated in Saudi Arabia.

Whatever employees do within e-government systems is potentially recorded and visible to management within their organisations. Researchers and scholars have long considered the consequences of surveillance through data, and concerns have been raised about the implications of surveillance state. Such concerns have led to warnings about the panopticon society, which centre on the fact that e-government systems collect information about citizens that can subsequently be used for the purposes of surveillance and social control. Nonetheless, while considerable attention has been given to the consequences of e-government for citizens, much less has been paid to the implications for government employees, about whom information is also collected; government employees' awareness that their actions are monitored in such granular detail could influence their behaviour. Similarly, employees' knowledge that their use of the system is monitored alters their behaviour in other contexts, which may lead to more accountability and compliance. Furthermore, enterprise systems are culturally shaped, as are employees' attitudes to expectations of organisational monitoring of their conduct. It has been suggested that culture can affect employees' acceptance of surveillance, and the degree to which surveillance effects changes in employee behaviour in corporate contexts.

To achieve the research objective set out above, this project employed explanatory sequential mixed methods. In the first phase, and guided by two theoretical perspectives, Hofstede Theory and Panopticon Theory, a theoretical model was developed based on the results of a systematic literature review, leading to the formulation of testable hypotheses. Survey data was collected from 425 government employees, which was then analysed using Structural Equation Modelling (SEM). The results obtained show that various cultural aspects do indeed have an influence on organisations' use of e-government systems, and the use of such systems does have a positive impact on government workers' levels of transparency, accountability and compliance.

In the second phase, qualitative data was collected from 17 Saudi government employees to investigate the results from the first phase in further depth. The interview data was analysed using thematic analysis method; in addition to confirming the findings from the first phase and illustrating each of the confirmed hypotheses in details, interviews also revealed new insights that users' perceptions of transparency and their accountability and compliance behaviours are also influenced by their personal values and individual personalities, and by e-government system design.

Finally, the implications of the research findings for theory and practice are discussed, along with the research limitations and future research directions.

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Acronyms and abbreviations

CAO	Chief Administrative Officer
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CIO	Chief Information Officer
D&M IS Success Model	DeLone and McLean Information Systems Success Model
DDA	Disability Discrimination Act
DGCP	Digital Government Collaborative Platform
DGUs	Digital Government Units
DoI	Diffusion of Innovations
DV	Dependent Variable
EFA	Exploratory Factor Analysis
EGDI	E-government Development Index
EgU/E-gov. Use	Electronic Government Use
EMS	Electronic Monitoring Systems
EU	European Union
FFM	Five Factor Model
FM	Femininity/Masculinity
G2G	Government-to-Government
GAM	E-government Adoption Model
GDT	General Deterrence Theory
GIFs	Government Interoperability Frameworks
GLOBE	Global Leadership & Organizational Behavior Effectiveness
GoF	Goodness of Fit
HR	Human Resources
HTMT	Heterotrait-Monotrait ratio
IC	Individualism/Collectivism
ICT	Information and Communication Technology
IPA	Institute of Public Administration
IR	Indulgent/Restraint
IS	Information Systems
IT	Information Technology
IV	Independent Variable

KSA	Kingdom of Saudi Arabia
LSO	Long/Short Term Orientation
MCIT	Ministry of Communication and Information Technology
MIS	Management Information Systems
NA	Not Applicable
NCITP	National Communications and Information Technology Plan
OECD	Organisation for Economic Cooperation and Development
OG	Open Government
Org.	Organisation
PA	Perceived Accountability
PD	Power Distance
PEOU	Perceived Ease of Use
PLS	Partial Least Squares
PT	Perceived Transparency
PU	Perceived Usefulness
QDAS	Qualitative Data Analysis Software
SEM	Structure Equation Modelling
SLR	Systematic Literature Review
SOA	Service-oriented Architecture
SRC	Self-Reported Compliance
SRMR	Standardized Root Mean Square Residual
TADR	Transitional Action Design Research
TAM	Technology Acceptance Model
TOE	Technological, organizational and environmental framework
UA	Uncertainty Avoidance
UAE	United Arab Emirates
UK	The United Kingdom
UMEGA	Unified Model for E-Government Acceptance
UN	United Nations
USA	United States of America
UTAUT	The Unified Theory of Acceptance and Use of Technology
VFT	Value-focused Thinking
VSD	Value Sensitive Design
WCAG	Web Content Accessibility Guidelines

XBRL	eXtensible Business Reporting Language
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Chapter One: Introduction

1.1. Research objectives

Researchers and scholars have long considered the consequences of surveillance using data, and various terms such as “dataveillance” (Clarke, 1988) and “surveillance capitalism” (Zuboff, 2019) have been coined to describe the phenomenon. Research on e-government is part of a wider interest in the field, and has a particular focus on the surveillance of citizens, regarding it as a threat to the privacy of citizens and to the cherished values of modern society (Ogura, 2006). Concerns have been raised about the implications of a surveillance state in which the government knows everything (Ronzhyn & Wimmer, 2019), and unsurprisingly, there have been calls to limit “the government’s awesome power of electronic surveillance” (Reitz, 2006, p. 734) to ensure a balance between an individual’s privacy and the need for security (Bannister, 2005; Dutton et al., 2005), and the benefits of e-government more broadly (Basu, 2004).

Such concerns have led to warnings about the panopticon society (Bannister, 2005; Layne & Lee, 2001), which centre on the fact that e-government systems collect information about citizens which can subsequently be used for the purposes of surveillance and social control. Nevertheless, while considerable attention has been given to the consequences of e-government for citizens, much less has been paid to the implications for government employees, about whom information is also collected. E-government systems routinely keep data in the form of detailed system logs that record in rich detail the employees’ interactions with and uses of the system, such as when and for how long they used the system and which records they created, read, updated, or deleted. In cases where the system includes communication and collaboration features, system logs can record with whom an employee communicates and collaborates, and probably even the details of the communication itself. To sum up, everything a government employee does within the system is potentially recorded and accessible by the organisation.

Further, government employees’ awareness that their actions are monitored in such granular detail could influence their behaviour. Similarly, employees’ knowledge that their use of the system is monitored alters their behaviour in other contexts, which may lead to more accountability and compliance (Agrawal et al., 2018; Kayas et al., 2008; Vieira da Cunha et al., 2015).

Finally, it is worth noting that enterprise systems are culturally shaped (Kayas et al., 2008), as are employees' attitudes to expectations of organisational monitoring of their conduct, particularly their attitudes to privacy (Chang et al., 2015). It has been suggested that culture can affect employees' acceptance of surveillance, and also the degree to which it effects changes in employee behaviour in corporate contexts (Panina & Aiello, 2005).

Motivated by the intention to determine if organisational culture was also an important factor in the surveillance of e-government employees, especially in Saudi Arabia, this project aims to develop a theoretical model: to explore the influence of organisational culture on the use of e-government systems, and to examine the impact of the use of such systems on transparency, accountability and, compliance in public organisations. To reach this aim, this study:

- Identifies whether organisational culture influences the use of e-government systems within government organisations and explores the nature of the influence.
- Identifies whether the use of e-government systems impacts the levels of transparency within government organisations and explores the nature of the impact.
- Identifies whether the use of e-government systems impacts the levels of accountability within government organisations and explores the nature of the impact.
- Identifies whether the use of e-government systems impacts the levels of compliance within government organisations and explores the nature of the impact.

While it is important to explore these issues for both theory and practice (as they show how culture plays a significant role in the use of e-government and in turn how e-government use leads to more transparency, resulting in more accountable and compliant behaviours), very few studies have investigated these issues from the viewpoint of government employees. These gaps in the literature are identified in Chapter Two.

1.2. The research context

Before talking about the location of the research, Saudi Arabia, and the e-government within this location, it is important to talk about e-government in generic terms as it is the focus of the study.

1.2.1. The evolving concept of e-government

Electronic government (e-government) is a commonly used term in the literature to refer to the use of Information and Communication Technologies (ICTs) when providing government services. E-government is defined as the use of the Internet in order to foster accessibility and delivery of services and information provided by government to citizens, employees, and other beneficiaries (Layne & Lee, 2001). Similarly, Carter and Bélanger (2005) state that e-government uses Information Technology (IT) to enhance not only the services provided to citizens and employees, but also to improve efficiency as well. In addition, this study categorises the relationship between government and beneficiaries into four categories: government to citizens, government to employees, government to companies, and government to other governmental agencies.

With the acceleration of technology in the information age, e-government has evolved. It has become government 2.0, Government 2.0, or web 2.0, meaning it has all the features of e-government plus being open in communicating between the government and its users (Bonsón et al., 2012). In order for governments to fulfil their missions, an upgraded version of government 2.0 has come into sight, government 3.0. Valle-Cruz and Sandoval-Almazán (2014) define government 3.0 as an advanced version that supports Mobile Technology (MT) for service delivery and for interactions between government and its beneficiaries including citizens, business, and government employees. Whereas the definition by Valle-Cruz and Sandoval-Almazán (2014) is limited to MT, Bruwer and Rudman (2015) give a wider definition of government 3.0 or web 3.0 by providing more characteristics: introducing new programming languages, creating and sharing all data types, getting wider and bigger in terms of resources, and getting contextual information when searching the web.

The implementation of government 3.0 will allow governments to not only establish, strengthen, and maintain the relationships with their beneficiaries, citizens, and employees, but also to service themselves (Jun & Chung, 2016; Myeong et al.,

2014). It has also been said that government 3.0 is a new paradigm for government operations that is designed to creatively provide customised services to users (including citizens and government employees) that are open, sharable, and collaborative (Nam, 2015; Song, 2014).

Since the whole world has been shifting towards e-government, e-government's definition and its evolving concepts have not only gotten the attention of Information Systems (IS) scholars but also several recognised international organisations (see Table 1).

Table 1. E-government definitions by international organisations

Organisation	Definition of e-government
European Union (EU)	"The use of ICT combined with organisational change and new skills in order to improve public services, democratic processes and public policies." (European Commission, 2003)
Organisation for Economic Cooperation and Development (OECD)	"E-government is equated to the use of ICTs in government. While the focus is generally on the delivery of services and processing, the broadest definition encompasses all aspects of government activity." (OECD, 2003, p. 23)
United Nations (UN)	"E-government can be referred to as the use and application of information technologies in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery, as well as expand communication channels for engagement and empowerment of people." (United Nations, 2014, p. 2)
World Bank	"E-Government" refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government." (World Bank, 2015)

Even though these definitions seem different, they all share the same concept of using ICTs and what is expected from this technology – to bring benefits to all including the governments themselves. That said, this study defines e-government use as the use of electronic systems or Internet applications in order to foster accessibility and delivery of service and information provided by government to employees, and the extent to which the use of these applications is mandatory for them to do their job. More details about this definition can be found in Section 4.2.1 of Chapter Four.

1.2.2. E-government in Saudi Arabia

Since the location of this study is in the Kingdom of Saudi Arabia (KSA), it is important to provide a brief overview about the country and its history and current level of e-government.

KSA has a unique position in the world: it is the birthplace of Islam so that Muslims all around the world visit KSA in order to make a pilgrimage to Mecca, the holy capital of KSA (Salamé, 1987). Saudi Arabia is also considered the leading producer



of oil – and its derived "energy and chemicals" – which drive world commerce (Saudi Aramco, 2021). Lastly, KSA is the largest country in Arabia Peninsula. Referring to Figure 1, KSA occupies approximately 2,150,000 km², with a total population of 35,013,414 (both citizens and non-citizens) as of mid-2020 (Saudi General Authority for Statistics, 2021).

Figure 1. KSA on world map, adapted from (Canuckguy, 2006)

In order to have a competitive advantage in the accelerated era of technology, the National Communications and Information Technology Plan (NCITP) was proposed in 2004 to increase productivity and deliver telecommunications and information technology services to all sectors of the kingdom (MCIT, 2005). Additionally, to foster the adoption of e-government, laws were enacted, through royal decrees, whereby the Ministry of Communication and Information Technology (MCIT) was authorised to implement the plan. In 2005, MCIT in collaboration with the Ministry of Finance established the Saudi eGovernment Program *Yesser*, an Arabic word that means making things easier. This program was launched with several objectives: raising productivity and efficiency of the public sector, providing better services that

are easy to use, and providing accurate information in a timely manner (Saudi eGovernment Program, 2005).

A Digital Excellence Award was given by Digital Excellence Group to certain Saudi government web sites (Eidaros et al., 2009). Further, to enhance services of e-government, since 2011 a faster fibre-optic internet infrastructure has been installed (Yamin & Mattar, 2016). *Yesser* has received international awards from the United Nations, such as the “E-Government FutureGov Awards” (United Nations, 2015), for its on-going e-government development. Furthermore, according to UN E-government Survey, KSA has been ranked as highly developed in this area (United Nations, 2010, 2012, 2014, 2016, 2018, 2020). Additionally, in terms of ICT international rankings, Saudi Arabia has been competing well and gaining into good places. For instance, in terms of global rankings in 2020, KSA was rated 27th in Telecommunication Infrastructure Index, 34th in Digital Competitiveness Index, 41st in Network Readiness Index, and 43rd in the E-Government Development Index. Most recently, in 2021, KSA was ranked 5th in Mobile Internet Speed Index (Saudi Press Agency, 2021).

In early 2021, *Yesser* retired and a new entity was created, the Digital Government Authority (Bureau of Experts at the Council of Ministers, 2021), with eight functions:

- 1) Participating in the preparation of the national digital government strategy,
- 2) Setting technical standards for government’s digital transformation models,
- 3) Governing the digital government cloud and the clouds that are related to the digital government,
- 4) Building national capacity specialized in digital government,
- 5) Providing advisory and services with regard to digital government to the government and private agencies,
- 6) Conducting studies and research on digital government,
- 7) Backstopping the government agencies in respect of the digital government services to adopt and empower the modern technologies,
- 8) Establishing policies on the DGA’s activities and preparing the plans and projects required for their implementation. (Digital Government Authority, 2021)

By launching the Digital Government Authority, the number of e-government services reached more than 2000 (TREND, 2021), and these incorporate the latest technologies and are provided under the Unified National Platform so as to give all users a convenient experience (Unified National Platform, 2021).

Finally, in terms of why Saudi Arabia was chosen as the location of the study, the proposed theoretical model (see Section 4.2.2 in Chapter Four) has yet to be tested. Since the researcher is from KSA, where he has access to the data collection, Saudi Arabia was the natural choice. Other studies situated in Saudi Arabia have identified that culture has a significant impact on a wide variety of variables. For example, Bjerke and Al-Meer (1993), Al-Gahtani et al. (2007), and Alamri et al. (2014) indicate that there is sufficient cultural variability within Saudi Arabia to identify significant effects. Therefore, the researcher considered Saudi Arabia to be a reasonable location in which to situate the current research.

1.3. Significance and contributions

Two benefits can be drawn from this project. Regarding its theoretical significance, there is little existing theoretical research on the impact of organisational culture on the use of e-government systems, or on the impact of the use of such systems on transparency, accountability, and compliance, especially from the viewpoint of government employees. This research investigates this theoretical gap by developing a causal model of the influence of organisational culture on e-government use, and in turn how e-government use impacts on perceptions of transparency and accountability and degrees of compliant behaviour.

Concerning practical significance, an awareness will be raised amongst public figures in Saudi government organisations about the importance of the cultural effect on the use of e-government systems, and the impact of the use of such systems on transparency, accountability, and compliance of the government employees, which helps e-government managers inform their strategies to improve accountability and compliance. Contributions for practice are discussed in detail in Section 6.3.2.

In doing so, this study makes a theoretical contribution in terms of both theory building and theory testing. A study with a high theoretical contribution is one that either builds new theory by examining previously unexplored processes or relationships, or tests existing theory by grounding the research model with existing theory or models, or both (Colquitt & Zapata-Phelan, 2007). This study investigates previously unexplored processes between organisational culture and use of e-government's effect on transparency, accountability, and compliance, and is based on existing theoretical frameworks, Hofstede Theory (Hofstede et al., 2010) and Panopticon Theory (Foucault, 1995), so this project is considered as a high

theoretical piece of research. Additionally, there are five types of theory in IS – Analysis, Explanation, Prediction, Explanation and prediction, and Design and Action (Gregor, 2006). This project can be considered the fourth type of IS theory – Explanation and Prediction. Finally, yet importantly, the findings of this study will form a novel addition to the field of knowledge.

To begin, the contributions that emerge from the first phase of this project, a quantitative study, can be sketched as follows: First, a theoretical model is developed and tested which bridges the gaps identified in the literature in Chapter Two. Specifically, this study quantitatively examines the influence of organisational culture on e-government use, adopting the cultural framework of Hofstede et al. (2010), and utilising all of the proposed six dimensions. Further, it quantitatively examines the impacts of the use of e-government systems, on transparency, accountability, and compliance, adopting Panopticon Theory of Foucault (1995) from the supply side, meaning from the viewpoint of government employees.

Second, the contributions deriving from the second phase of this project, a qualitative study, are validated and explanations put forward for the relationships found in phase one. By conducting explanatory in-depth semi-structured interviews with government employees, this phase assists in validating and explaining how different types of organisational culture affect the use of e-government systems. Further, it helps to validate and explain how employees' awareness of system monitoring alters their behaviour, leading to accountability and compliance – the essence of Panopticon Theory. Lastly, the semi-structured interviews not only help in validating and explaining the results of the quantitative phase, but also provide more room for participants to bring new insights into what makes them act differently or sometimes change their behaviour.

1.4. Structure of the thesis

To reach the objectives of this project and address the research questions, this thesis is organised into six chapters, as set out in Figure 2 below. The current chapter starts by demonstrating the objectives of the study. Then, an illustration of the study location is provided in which the e-government concept is clarified both in generic terms and in Saudi Arabia. Finally, the significance and contributions of the study are discussed.

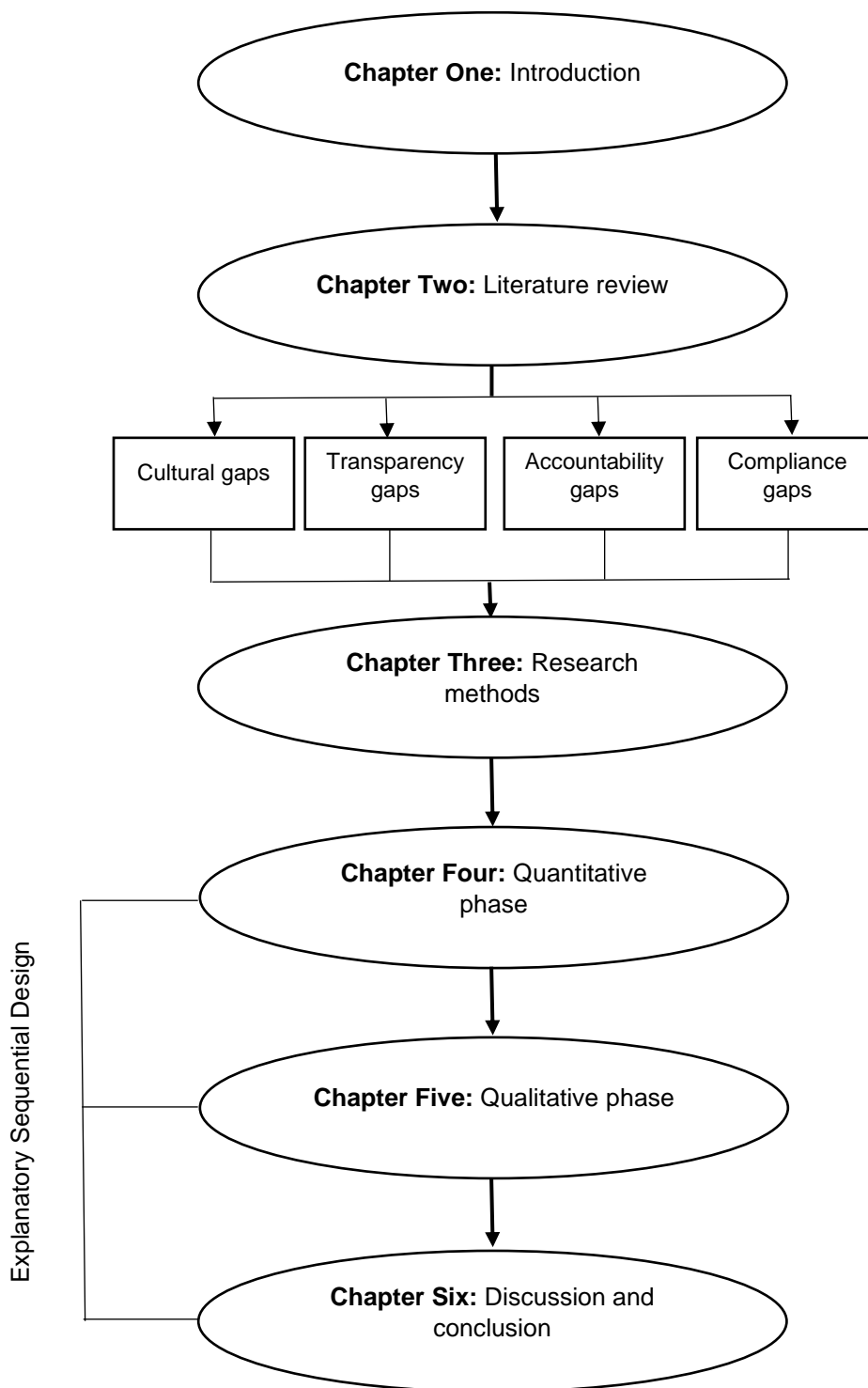


Figure 2. Structure of the thesis

Chapter Two provides a comprehensive review of the literature by conducting a Systematic Literature Review (SLR) that presents, synthesises, and discusses the literature related to the effect of culture on e-government, and the effect of e-government on transparency, accountability, and compliance; it then identifies research gaps, whereas Chapter Four as illustrated below discusses the theory development

Chapter Three sets out the research objectives and the questions emerging from them. Then, the research approach is described, in which the rationale of adopting mixed methods research is discussed, specifically the explanatory sequential mixed methods design. This is followed by a brief description of how the quantitative phase was carried out. Next, the process of how the qualitative phase was performed is illustrated. Chapter Three then describes how ethical considerations were addressed, including how consent forms were obtained and how the anonymity and privacy of the participants were respected in both study phases.

Chapter Four starts with the development of theory; here, definitions of the study constructs along with a discussion of some of these constructs are provided. Next, the proposed research model is presented. Subsequently, the development of hypotheses is discussed. The development of questionnaire covering items of the ten constructs of the study is then described. Details of the procedures followed in the translation and back-translation of the survey are then given. Subsequently, a pilot study that was carried out to check if there were any clarity issues with the items of the survey and examine the response rate for both versions of the survey is described. After that, details of sample selection and data collection are provided. Then, the procedure of data screening is illustrated, followed by several statistical tests to ensure reliability and validity of the constructs. The chapter concludes by reporting the structure model, along with statistical data such as path coefficients and *t*-values. The results of the hypotheses testing are also presented. Finally, a discussion of the results is provided in which several points for further research are suggested.

Chapter Five starts by providing a background of the (Five Factor Model: FFM) personality traits and its association with cultural dimensions and the use of technologies, since the FFM personality traits was introduced in the discussion of the results of the quantitative phase. The environment of how interviews were held, including the interview process, is described. This is followed by a demonstration of sampling techniques, which include recruitment challenges and data collection. Subsequently, a detailed description of the thematic analysis method used is given. Finally, the chapter presents and discusses the findings, followed by the new insights gained.

Chapter Six begins by revisiting the research questions, adding discussion of the findings. This is then followed by presenting the overall research contributions

derived from the study, including its limitations and possible future research directions. The chapter concludes by providing a summary of the whole thesis.

The next chapter sets out a comprehensive and systematic literature review.

Chapter Two: Literature review

2.1. Introduction

This chapter provides a comprehensive Systematic Literature Review (SLR) of the relevant literature. This SLR seeks to answer the two questions below, and in doing so identifies research gaps for subsequent study. This chapter starts by demonstrating the methodology employed to undertake the SLR. Next, papers related to the first and second questions – involving culture, transparency, accountability, and compliance – are presented and synthesised. They are then discussed in separate sections in which research gaps are identified (Webster & Watson, 2002).

2.2. Methodology of systematic literature review

Two questions were developed to conduct a systematic literature review as follows:

- *What is the current body of knowledge about the effect of organisational culture on e-government?*
- *What is the current body of knowledge about the effect of e-government on transparency, accountability, and compliance?*

In order to perform the SLR, the methodological guidelines provided by Kitchenham (2004) were followed. This SLR focuses on the relative impact of organisational culture on e-government, and the impact of e-government on transparency, accountability, and compliance. The process of this SLR consists of three main stages: *planning*, *conducting*, and *reporting* the review. The planning stage has two sub-stages, identifying the need of the review and developing a review protocol. In the conducting stage, searches of the databases are done in which a selection of primary and relevant studies is made. The studies are then analysed and synthesised. Finally, the report stage documents the findings.

The purpose of an SLR is to provide a rigorous and comprehensive review of existing literature from which common themes can be drawn. This leads to identifying research gaps in the current research that provides a solid ground for future study (Brereton et al., 2007; Kitchenham, 2004; Wirtz & Daiser, 2018). In the development of the review protocol sub-stage, the method used to identify notable sources was as follows. First, in order to cover the most relevant studies from the

literature, key words from the existing literature were extracted and used search queries in Google Scholar (“e-government”, “digital government” “e-government use”, “electronic government”, “transparency”, “monitoring awareness”, “monitoring”, “accountability”, “compliance”, “culture”). This was done as a step towards developing a search string. Next, a well-established database to conduct SLRs within the topic was selected (ProQuest). Then, a full-text search on this database was performed using *ab(e-government) AND ab(digital government) AND ab(culture) and ab(e-government) AND (ab(transparency) OR ab(monitoring) OR ab(accountability) OR ab(compliance))*.

In conducting stage, to narrow down the number of hits, a date restriction was used since the initial number of hits in ProQuest of *ab(e-government) AND ab(digital government) AND ab(culture) and ab(e-government) AND (ab(transparency) OR ab(monitoring) OR ab(accountability) OR ab(compliance))* was 2100. The date restriction was also used as a scoping method, so that only studies from the last 10 years (starting from the middle of 2009) were used. The choice of 10 years back was made because the appearance of e-government studies only started in the late 1990s (Grönlund & Horan, 2005); subsequently, e-government has developed enormously (OECD, 2008). In this way, the study aimed to focus on current knowledge and identify gaps for further research.

Although the researcher is conscious of concerns about language bias in literature reviews (Grégoire et al., 1995), it was also necessary to limit the scope to peer reviewed papers from scholarly journals published in English, which is the language of the project. This search process resulted in 530 hits. SCImago Journal Rank (SJR) was used to assess the quality of journals in which the studies were published, and only studies published in higher quality journals (Q1 and Q2) were included.

In terms of filtering for relevance, the first step was to look at the title of the study. If it was relevant, going over the abstract, introduction, and conclusion of the studies was the second step. Then, these relevant studies were downloaded to be fully utilised in this review (Brereton et al., 2007). In total, this yielded 83 sources as of June 2019. Since the literature review is an ongoing task while undertaking the project, the literature was updated using the search queries mentioned above from June 2019 until June 2021, which resulted in a further 18 relevant papers, giving a total of in 101 papers included in this SLR. It is worth noting that these subsequent papers did not make any fundamental change to the conclusions of the review.

2.3. Drivers and influences of e-government

2.3.1. Culture

The cultural context of a nation cannot be ignored, particularly when investigating people's behaviour. As stated above, this study strives to answer the question related to the current body of knowledge of the effect of culture on e-government. Out of the 101 sources that were found relevant to this study, 27 of them were related to culture. Almost all studies found that culture has an influence on, correlates with, or makes a difference in various aspects of e-government such as development, diffusion, implementation, adoption, innovation, intention to use, and use.

Impact on e-government

There were 14 of these 27 studies which found that culture influences e-government.

First, a study was done to investigate the enablers and barriers of culture that facilitated the initiatives of e-government implemented in Malaysia. The study identified four cultural cosmologies – namely hierarchism, egalitarianism, individualism, and fatalism which enable and constrain successful implementation and operation of e-government services (Seng et al., 2010). A second study, which took place in India, examined the impact of organisational culture on the success of e-government initiatives, and here it was found that culture affects e-government performance in both positive and negative ways (Kanungo & Jain, 2011).

A third paper explored the case of transferring e-government systems from the United States of America (USA) to Pakistan looking at the implementation of these systems in different cultural settings, and it found that political objectives and cultural differences influence the transfer of e-government systems (Ahmed et al., 2012). Fourth, a global study of 55 countries investigated how e-government diffusion is affected by national culture. It used two sets of international indexes: the indexes of five of the societal cultural practices of the Global Leadership & Organizational Behaviour Effectiveness (GLOBE) project, and the United Nations E-government Survey, and it found that culture has an impact on the diffusion of e-government, so that economic development moderates the link between culture and e-government diffusion (Zhao, Shen, et al., 2014).

Fifth was a study on the success factors underlying implementation of e-government in Saudi Arabia, based on the analysis of data collected from non-Saudi subject experts and secondary data. It found that even though the political, organisational, social, and technological factors are vital, cultural and demographic factors are substantial in influencing the successful implementation of e-government (Franke et al., 2015). Sixth was a study conducted to investigate factors affecting e-government adoption in Zambia, and here the results revealed that besides Perceived Ease of Use (PEOU) and Perceived Usefulness (PU), culture, cost, and trust are factors that influence the adoption of e-government (Joseph & Du Plessis, 2015).

The seventh study within this category was done to explore the determinants of decision-making on the adoption of cloud computing in e-government in China. After collecting and analysing 277 responses from Chief Information Officers (CIOs), business executives, and Human Resources (HR) managers, the results showed that besides other determinants (such as management and technical factors), Chinese culture has a significant impact on decision-making and the adoption of cloud computing in e-government (Wu et al., 2016). Eighth, a study adopted Grid and Group Cultural Theory to explain the social relations affecting the implementation of e-government services using a case study approach in one of government council in Malaysia. It found that culture is an obvious influencer of e-government implementation. The paper concluded by stating that in order for scholars to understand how culture affects e-government, they need to focus not only on the organisational level but also on the nature of culture at group and individual levels (Jackson & Wong, 2017).

Another study that employed a case study method was done to explore the factors influencing the sustainability of innovation in e-government. After analysing 22 local government web sites in China in the period 2006 - 2015, it was found that, besides other key findings, organisational culture has an impact on sustainable innovation in e-government. (Schlæger & Stepan, 2017). A tenth study, done in the USA, examined the influence of organisational culture, personal and organisational use of social media, technological capacity, and digital threats on the perception of government managers of social media use. The findings showed that, in local government agencies, all these factors influence the use of social media tools in the workplace – except for digital threats, which were found not to have a significant influence (Fusi & Feeney, 2018).

The eleventh study was done to explore the relationships between culture orientations, social networks and adoption behaviour of e-government. After collecting and analysing data from 749 citizens and residents living in Fiji, the results showed that both cultural orientations and social networks have an influence on the adoption of e-government (Zhao et al., 2018). A twelfth study conducted a general review of the end-user adoption of e-government – based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and other theoretical perspectives – and found that national culture and other factors presented in their conceptual model have an effect on the behavioural intention to use e-government is (Jacob et al., 2019).

The following paper was a study conducted to explore the willingness of African students in China to adopt and use services of e-government employing UTAUT as a theoretical framework. After analysing 326 responses, it was found that culture and other determinants significantly influence the willingness to use e-government services (Mensah, 2019). Last but not least, a study was done to explore the factors that determine the success of e-government projects. The study collected data from government employees in eight Southeast Asian nations and the findings showed that sufficient ICT infrastructure is not the only factor that determines the success of government programs. The study found cultural values are also key factors that have an influence on the success of e-government projects (Apriliyanti et al., 2021).

While 14 of the 27 cultural papers found that culture has an influence on e-government, only one study explored the factors affecting the intention to use e-government services, among Malaysian citizens, found that one of Hofstede's cultural dimensions, uncertainty avoidance, has no significant effect, as a moderator, on the relation between innovation factors and intention to use e-government services (Lean et al., 2009).

A further study in Jamaica highlighted the barriers to implementation of initiatives fostering the efficiency, effectiveness, and the delivery of services through e-government. It proposed that culture might be a barrier to e-government implementation, but, the results showed no support for this proposition (Waller & Genius, 2015). In a similar vein, A review paper based on organisational theories and the literature of e-government found a link between organisational culture and the barriers to adopting and implementing e-government (Nurdin et al., 2011).

Correlation between culture and e-government

Besides the studies set out above exploring the causal relationship between culture and e-government, three studies found that there is a correlation between culture and e-government. While causation means that X causes the outcome Y, correlation means that there is a relation between X and Y, but does not necessarily mean that X causes the event Y to happen (Altman & Krzywinski, 2015; Madhavan, 2019). In this case, X is the culture and Y is e-government.

First, a study was conducted to investigate the relationship between values of national culture and e-government readiness utilising data of 56 countries from the UN E-government Survey and (House et al.) Index found that national culture correlates positively and negatively with e-government readiness (Khalil, 2011). Second, an empirical study investigated the influence of national culture on the development of e-government in 84 countries. This study used two sources of data, the UN E-government Survey and the Hofstede's cultural dimensions Index. The results showed that a strong correlation exists between national culture and e-government development (Zhao, 2011). Lastly, somewhat later, a similar study utilising the same sources of data arrived at the same conclusion – national culture is significantly correlated with e-government development (Zhao, 2013).

Cultural differences across nations

Seven of the 27 cultural studies found that there are differences in a cross-cultural setting between the countries these papers studied in terms of e-government. This means that culture makes a difference. First, a study investigated challenges and approaches to implement e-government projects employing an action research approach in which data from 22 countries was involved together with in-depth interviews. The study concluded that the failure or challenges of implementing large e-government projects are due to differences in stakeholders' culture, interests, and mandates. The study therefore proposed as a solution that technology should be integrated with professional practices of project management (Furlong & Al-Karaghoul, 2010). Second, a cross-cultural study between the United Kingdom (UK) and Kuwait was conducted to understand the relationship between national culture and perceptions of users in terms of e-government interface quality. The findings revealed that there are differences in a cross-cultural setting between UK and Kuwaiti users of e-government systems in terms of interface quality, so that from a

national culture perspective, high power distance, collectivism, and uncertainty avoidance have a significant influence on the design choices of the web sites (Aladwani, 2013).

The third study was done to explore and understand the determinants influencing behavioural intention to use e-government services, and the results showed that the behavioural intention to use e-government services in the United Arab Emirates (UAE) are different from those in the USA, which might be affected by cultural contexts (Zhao & Khan, 2013). Fourth, a cross-cultural comparative study was conducted to assess the essentials of the adoption of e-government in USA and Spain. Analysis of data from both countries indicated that there are significant differences in terms of compatibility, trust, and perceived ease of use and intention to use e-government (Rufín et al., 2014).

The last three studies in this category concern transparency, which is the next topic that this SLR covers, and these papers show how e-government is shaped by different cultural contexts. They are therefore used in both the culture and transparency sections of this review as the papers cover both. First, a study was conducted to analyse if governments were using the latest technologies to improve accountability and democracy, making their budget numbers transparent to all partners. Using data from Organisation for Economic Co-Operation and Development (OECD) member countries, the study found that the use of e-government is different across countries depending on administrative culture (Rodríguez Bolívar et al., 2015). Second, a study was done to identify beneficial political actions for improving transparency practices and their effect on a sustainable economy, environment, and society. The work was done in local governments of 10 European countries, categorised into three cultural contexts, and found that there are significant differences in local government transparency in terms of cultural contexts (Navarro-Galera et al., 2017). Lastly, a similar study published a year later shared the same objectives of the previous study, and came to the same conclusion – except that the latter paper studied local governments in nine European countries (Navarro-Galera et al., 2018).

To conclude, notwithstanding that there is quite a few studies such as (Aladwani, 2013; Franke et al., 2015; Lean et al., 2009; Rufín et al., 2014) investigated the relationship between culture and e-government, most of them explored this relationship from the perception of citizens or subject experts. Additionally, the

majority of the rest of the studies such as (Fusi & Feeney, 2018; Khalil, 2011; Navarro-Galera et al., 2018; Rodríguez Bolívar et al., 2015; Schlæger & Stepan, 2017; Zhao, Shen, et al., 2014) examined the relationship between culture and e-government used either web sites analysis or the UN E-government Survey (secondary data). None of the five studies (Ahmed et al., 2012; Apriliyanti et al., 2021; Jackson & Wong, 2017; Kanungo & Jain, 2011; Seng et al., 2010) that investigated this relationship from the perception of government employees employed Hofstede's cultural dimensions.

The studies such as (Rufin et al., 2014; Waller & Genius, 2015; Zhao & Khan, 2013), which investigated the effect of culture using Hofstede's cultural dimensions on e-government, explored the relationship using either secondary data from the UN E-government Survey or other sources, as well as the Hofstede Index or from the viewpoint of citizens. Furthermore, none of the studies employing Hofstede's cultural framework used all of the six dimensions proposed by Hofstede et al. (2010). With regard to the first question stated in Section 2.2 of this chapter, (relating to investigating the current body of knowledge on the effect of organisational culture on e-government), one can see that there is a paucity of research that examines the relationship between culture using all of Hofstede's cultural dimensions and e-government use from the perception of government employees. This study aims to bridge those gaps.

Analysis of the SLR of culture-related studies (Appendix 1) found that many studies did explicitly identify a theoretical framework as mentioned above. Furthermore, while most sources that identified the study location were situated in western countries (particularly the USA and Europe), a number of studies were situated in Asia. The unit of analysis of majority of studies was web analysis and secondary data.

Lastly, as one of the theories adopted in this study is Hofstede cultural theory (Hofstede et al., 2010), it is important to provide a brief historical background of the six cultural dimensions used in this study. During the period of the 1960s and the 1970s, Hofstede identified four cultural dimensions from his empirical study of IBM employees which was in 40 countries. The dimensions that were identified are: power distance, uncertainty avoidance, individualism vs collectivism, and

masculinity vs femininity. Then, long-term vs short-term orientation, the fifth dimension, was added based on a study by Michael Bond and others on students in 1991 in 23 countries (Hofstede, 2001). Indulgent vs restraint was the most recent and entirely new dimension that was added, which was based on 2008 version of the Minkov's Values Survey Module in 93 countries (Hofstede et al., 2010; Hofstede & Milosevic, 2018).

It is worth noting that even though Hofstede is usually used for cross-national studies, this does not mean that the theory cannot be used at organisational level since Hofstede's first work was on an organisation, IBM (Hofstede, 2001). In fact, literature shows that Hofstede theory has been used at organisational level (Hofstede, 1998; Hofstede, 2000; Sun, 2008; Tabibi et al., 2015).

2.4. Consequences and impacts of e-government

Transparency

The dominant number of studies found relevant to this study using the search queries mentioned in section 2.2 related to transparency. Out of the 101 studies, 55 discussed the relationship between e-government and transparency. 40 of them were mainly about transparency, 10 studies mentioned accountability as well as transparency, and five studies discussed reducing corruption as a result of system monitoring or transparency. This outcome was consistent with the findings of a literature review study related to e-government. Based on the analysis of 139 research articles, the study found that transparency is one of the most frequent themes used within this area of research (Alryalat et al., 2017). In a similar vein, another paper reviewed 77 papers in this area and found that one of the most of the dominant constructs used in e-government studies is transparency (Singh et al., 2020).

Impact on transparency

There is a general agreement in the literature that e-government has an influence on government transparency. Most of the studies reviewed concluded that e-government enhances transparency of government. First, a study explored the role of ICTs in government, surveying 200 participants from Oshimili North, Nigeria, found that the use of ICTs in government enhances transparency and citizens' participation (Ogbomo, 2009). Second, a study was conducted to explore the

potential influence of e-government and social media on attitudes related to transparency, and it concluded by setting out several key lessons in regard to the use of ICTs “e-government” to create an approach to transparency in a country (Bertot et al., 2010).

Third, a study was done to describe and explain the perceived effects of ICTs on transparency and other factors. By collecting more than 1500 responses from public servants in Norway, the study, besides describing how the use of ICTs increased transparency, concluded that there is a positive effect of ICTs “e-government” on transparency (Christensen & Lægreid, 2010). The fourth study within this category was conducted to assess 601 governmental web sites and portals in India, which could be accessed through a single window. The study found that one of the benefits resulting from e-government is an increase in transparency of government (Hirwade, 2010). Fifth, a study, which was done in Netherlands, explored what visualization means in e-government. One of the key findings was that visualization can make sophisticated things transparent, meaning that visualizing information on government web sites helps improve transparency in terms of government–citizen interactions (Bekkers & Moody, 2011).

Further, a study was conducted to present, validate, and update an e-government evaluation model utilising data from 18 cities in China, based on the assessment of e-government systems, concluded that e-government leads to transparency of government affairs (Shan et al., 2011). Seventh, a study looked at an e-procurement system in one Saudi Arabian municipality in terms of the stages of system’s implementation, status, and future plans. The paper concluded that as the municipality adds more information to their web site and makes it more collaborative, these improve the transparency of the portal to beneficiaries, businesses, other government agencies, citizens, and contractors (Al-Aama, 2012). Eighth, a study evaluated social media in terms of e-government transparency. It used three case studies of transportation projects in the USA, and the study concluded that clear communication between government and beneficiaries can ultimately increase transparency with government (Camay et al., 2012).

Ninth, a study was conducted to investigate to what extent open e-government initiatives were adopted by the USA government using a survey approach to collect data from 24 CIOs. This study concluded that by adopting open e-government initiatives a high degree of transparency is attained (Ganapati & Reddick, 2012). A

study explored the benefits and current status of e-government in Nigeria, collecting data collection from web sites, surveys, and interviews. Besides other benefits of e-government, analysis showed that e-government enhances transparency in government ministries (Asogwa, 2013). The eleventh study within this category was done to analyse the stages of e-government in 102 Spanish municipalities, looking at the e-government use in regard to engagement of citizens and their ability to exchange information online and obtain public services. The results showed that Spanish municipalities demonstrate high transparency in terms of information related to the economy, environment, and social matters (García-Sánchez et al., 2013).

Another study within this category was conducted to help in understanding information transparency and sustainability practices within government institutions in Spain. The study analysed data from regional government web sites, and the findings revealed that access to the internet, along with other factors, may promote the transparency of regional government regarding environmental sustainability (Alcaraz-Quiles et al., 2014). Thirteenth, a study was done to explore to what extent open e-government initiatives were adopted by municipal governments in the USA. The study collected data from 107 Chief Administrative Officers (CAOs) and the concluded that transparency, participation, and collaboration are achieved by adopting e-government (Ganapati & Reddick, 2014). Fourteenth, a study examined whether there is an improvement in citizens' perceptions of local government due to the use of e-government. The study analysed data from 949 respondents and found that the use of e-government web sites improves citizens' satisfaction with government transparency (Jun et al., 2014).

The fifteenth study within this category used a mixed methods approach to examine the influence of similarities communication styles of system users on their perceptions of services provided by virtual advisory. The findings showed that the intelligent advisory system "communication style similarity" is positively associated with perceived transparency (Li & Mao, 2015). Further, a study investigated the association between the use of social media in government and the perception of government transparency, utilising data from a 2009 national e-government survey in the USA. Among other findings, the results showed that there is a positive association between citizens' use of social media as an e-government service and perceptions of government transparency (Song & Lee, 2016). Seventeenth, a study

was done in Oman to determine the privacy concerns' challenges arising from integration of big data within e-Oman (e-government). While it found that e-government increases transparency of government, and concluded that as e-government evolves in Oman to promote government transparency, privacy concerns remain an issue that needs to be tackled (Saxena, 2017).

Two similar studies were carried with similar objectives and findings in which one used data from nine European countries, whereas the other used data from 10. The main objectives were to identify beneficial political actions among local governments for improving transparency (information disclosure) practices and their effect on sustainable economy, environment, and society. The findings of the first study showed that the Anglo-Saxon local government web sites are the most transparent among Southern European and Nordic governments, while the findings of the later one showed that Nordic and Anglo-Saxon local government web sites are similar in terms of transparency (Navarro-Galera et al., 2018; Navarro-Galera et al., 2017).

Another study in this category explored the relationships between e-government in local governments in Spain, transparency, and their reputation. The data was collected from 78 municipalities' web sites, and the results showed that e-government development positively influences transparency (López-López et al., 2018). Another study found that digital government positively relates to fiscal transparency (Chen et al., 2019). The fourth to the last study was conducted on e-government implementation in Spain by reviewing and analysing related literature. The study proposed an empirical model indicating that e-transparency is one the important factors in e-government implementation (Dias, 2020). Another study investigated the relationship between political and social conditions and the level of transparency in government municipalities of Portugal. Using secondary data from the Transparency Index and other sources, the results showed that citizens' access to the Internet has a positive effect on transparency level in municipalities (Tejedo-Romero & Araujo, 2020). Last but not least, a study was done to understand how Spanish municipalities perceive Open Government (OG) setting out two main research questions. The analysis of 67 responses showed that transparency is one of the highly perceived concepts, and is seen as the main reason for implementing OG in municipalities by Mexican public servants (Sandoval-Almazán et al., 2021).

While the previous studies showed that e-government influences transparency, one study did not find a clear difference before and after passing of the 2016 Charity

Law, which supports e-government initiatives. Based on the analysis of health charity credibility in China, it was found that the implementation of the 2016 Charity Law did not make a significant change of the transparency scores for charities in China (Xu et al., 2021).

Conditions for an impact on transparency

Other studies set out several conditions for e-government to have an impact on government transparency. One study explored the challenges of Obama administration's approach in using e-government and social media services to enhance transparency. The study expressed the view that governments need to focus not only on technology but on citizens as well, with the study concluding that governments should be citizen-centric when developing and implementing e-government systems (Jaeger & Bertot, 2010). In terms of transparency, participation, and collaboration, another study concluded that the efforts of OG may have an impact when creating more valuable outcomes for stakeholders (Harrison et al., 2012). Furthermore, a study investigated the state of information culture of a municipality in Belgium found that in order for e-government to develop, an information culture is essential. Information management needs to be effective and efficient in order to be transparent. That is, archiving is essential in order for e-government to be transparent (Svärd, 2014).

Similarly, based on a review of the literature on e-government utilisation by government and citizens, one study concluded that efforts to improve e-government services (e-services and e-Democracy) in terms of transparency, openness, and engagement has started but need time to be completed (Van der Meer et al., 2014). Lastly, by presenting a proposed benchmark for open government in which data from USA open government portal was utilised, another study concluded that open government needs government transparency and data transparency, so that to achieve data transparency more work is needed (Veljković et al., 2014).

Corruption reduction as a result of transparency

Five studies discussed reducing corruption as a result of transparency and monitoring of system use. The first study was conducted in India to explore the role of design values role enhancing transparency and reducing corruption via e-governance program. It concluded that in order for e-government systems to have an impact on transparency and reduce corruption, system designers should balance

ideals with realistic values (Johri & Nair, 2011). Second, a study was done to explore the effectiveness of Information Technology (IT) to reduce corruption in China by using Electronic Monitoring Systems (EMS). Based on data from 387 government employees, it found that the use of EMS positively impacts corruption reduction. While use of the systems reduces corruption, the organisations and employees also play a great role in doing so (Xinli, 2015).

Based on a review of the literature and data from 80 countries about e-government and corruption, the study found that there is a positive relationship between e-government readiness and perceived levels of corruption, meaning that when e-government readiness is high, the cleanness and transparency are also high within a country. Cleanness here means that the country is less corrupt as all transactions are visible and there is no place for bribery or extortion (Zhao & Xu, 2015). In a similar vein, one study explored the relationship between e-government transparency and corruption reduction in the EU countries. It concluded that citizens' participation in government actions through e-government increases transparency and decreases corruption (Faura-Martínez & Cifuentes-Faura, 2020).

Lastly, a comparative study was conducted to explore whether e-government innovation is an efficient solution to corruption by interviewing 44 mid- and senior-level public officials in both China and India. The findings showed that Chinese and Indian public servants believe that e-government plays a positive role in terms of transparency and hence corruption reduction. In detail, the responses of the Chinese officials were more positive towards the role of transparency, whereas the responses of the India officials were more positive towards the role of technology. Transparency here refers to its traditional version such as the Right to Information Act and the Regulations of the People's Republic of China on Open Government Information. That is, both countries believe that e-government reduces corruption, but the main reason for the Indian officials is the use of e-government and for the Chinese officials is the transparency. Lastly, the study concluded by stating that this positive role depends on the willingness of politicians and other factors (Wu et al., 2020).

Impact of transparency

Although most studies discuss e-government affecting or enhancing transparency of government, a number of studies have investigated the inverse relationship,

meaning that these studies have examined the impact of transparency on e-government. First, a study was conducted to develop and test an e-government diffusion model utilising data from a United Nations e-government report and a World Bank Ethics Index of 60 countries; it found that the transparency of corporate governance has an effect on e-government development (Azad et al., 2010). Second, a study was done to examine the quality of e-government services from the perception of citizens in India, and it found that, along with other factors, transaction transparency positively influences service quality of government portals (Bhattacharya et al., 2012)

Further, a cross-nation study was conducted to explore to what extent national governments use e-government applications to enhance transparency and citizens' engagement in the process of decision making. It used data of 82 countries from the World Bank and other sources. However, the study did not find support for the hypothesis, stating that countries with high levels of transparency have high levels of e-participation and information access (Katz & Halpern, 2013).

The fourth study within this category was done to tackle one issue related to information dissemination – transparency – which is an enabler for e-government, and privacy. The study concluded by stating that when it comes to preserving privacy, transparency as a factor of e-government seems to be a wicked problem (Bargh et al., 2017). Fifth, a study was conducted to investigate the factors that enable the adoption of e-government services by citizens in India; it employed a qualitative method of collecting data from 49 participants, and found that, along with other factors, transparency strengthens e-government adoption (Kumar et al., 2018). Sixth, a study explored the factors generating public value in e-government services from the perception of Mexican citizens. The findings showed that transparency and access to public information is correlated with public value in e-government (Valle-Cruz, 2019).

Moreover, a study was done to explore the factors that might affect the acceptance of systems of government-to-government (G2G) in Nepal; it utilised data collected from government officials. The study found that transparency has a significant influence on the behavioural intention to use G2G systems (Kirat Rai et al., 2020). Lastly, in terms of citizens' perceptions, a study was carried out to explore the influence of transparency on e-government adoption in Indonesia by extending and validating UTAUT. Analysis of 314 responses showed that transparency is the

strongest influencer for e-government adoption by Indonesian citizens (Sabani, 2021).

In spite of the fact that these studies explored the inverse relationship, it may mean the same as the other studies that examined and discussed the effect of e-government on transparency. One can say that without e-government, transparency would not be achieved. The relationship between e-government and transparency seems to be an infinite circle.

[The relationship between transparency and accountability](#)

10 studies identified e-government as an antecedent to both accountability and transparency, but do not identify a path from e-government, via transparency, to accountability. The first of these was done to illustrate how the norms, procedures, and practices of institutions in the European Union involving transparency and accountability mirror the legal and political values and commitments to sustain them in open and visible ways. The paper concluded that while e-government enhances transparency and accountability, the issue is that those who are in power using technology to put other values such as liberty and security at risk (Lodge, 2009). Second, a study was conducted to explore how governments build ICTs and social media into e-government transparency in order to enhance collaboration with members of the public so as to be able to monitor government activities through social media. By employing an iterative strategy in collecting and analysing data, the study concluded that social media, through efforts of members of the public, not only enhance transparency and accountability but also reduce corruption (Bertot et al., 2012)

The third study within this category investigated the role of e-government in enhancing the transparency and accountability of a regulated system in the USA. Based on the review of the literature, the paper concluded that the implementation of the eXtensible Business Reporting Language (XBRL) in e-government promotes not only transparency but accountability, as it allows stakeholders to monitor the government sector's finances (Chen, 2013). Fourth, a study was conducted to explore the issues facing e-government to enhance transparency and accountability; it concluded that the use of ICTs increases government transparency and accountability. However, the openness of government might not be favourable,

as it may decrease the operational capacity of the government, and so this challenge needs to be balanced (Halachmi & Greiling, 2013)

Another study explored how the framework of information policy failed to tackle the challenges of such policy. Based on an American policy and literature review, the study concluded that although open government partnerships (through big data initiatives) seek to promote government transparency and accountability, there are nine challenges regarding to open policy that need to be addressed: privacy, data reuse, data accuracy, archiving and preservation, data curation, support of libraries, development of sustainable data platforms and architecture, development of data standards, and encouragement of data sharing policies across sectors (Bertot et al., 2014). In a similar vein, a study was conducted to analyse whether governments use new technologies to promote accountability and democracy, so as to make their budget numbers transparent to all partners. By utilising data from OECD member countries, the paper concluded that even though the disclosure of budgetary information via e-government promotes transparency and government accountability, the selected countries show no disclosure of all information produced (Rodríguez Bolívar et al., 2015).

Seventh, a study was done to propose a framework related to the implementation of e-government 2.0. Based on the data of four countries in UN E-government Survey, the study proposed a framework for e-government 2.0 that would uphold transparency and accountability (Sun et al., 2015). Eighth, a study was conducted to outline and systematically explore the concept of OG systematically in post-soviet countries. The results showed that besides other ideologies, the main emphasis of OG within post-soviet countries is on transparency and accountability (Hansson et al., 2016). Another study explored the logical bases for e-government procurement in trade agreements between the EU countries and Vietnam, highlighting the benefits of using e-government are highlighted. The study concluded that e-government procurements through institutional reform can be a tool to promote transparency and accountability, both in EU countries and in Vietnam (Kerr & Khorana, 2021). Lastly, in order to enhance collaboration between citizens and government officers in Sri Lanka, one study set out to design a Digital Government Collaborative Platform (DGCP) based on essential human values. The data collected from 30 citizens revealed that transparency, accountability, and others factors are crucial in designing a DGCP (Sapraz & Han, 2021).

Regarding to the second question stated in Section 2.2, (relating to investigating the current body of knowledge on the effect of e-government on transparency), the literature as mentioned above seems to have an agreement on the effect of e-government adoption, implementation, or use on transparency. It is worth noting that most literature discusses different types of transparency such as open government, public access to government data, documents, whereas this study investigates transparency as government workers' actions being logged and visible to others within the organisation. The literature is heavily weighted with studies investigating the effect of e-government on transparency from citizens' perception, meaning how governments are transparent to citizens, whereas there is very little research examining this relationship from public servants' perception. This project aims to fill those gaps.

Analysis of the SLR of transparency-related studies (Appendix 2) found that many studies did not explicitly identify a theoretical framework. Furthermore, while most sources that identified the study location were situated in western countries (particularly the USA), a considerable number of studies do not specify where the research was situated. The unit of analysis is also not made clear in the majority of studies; nor were dependent and independent variables.

Accountability

There are few studies in the literature that discuss accountability as a result of the use, implementation, or adoption of e-government. Besides the 10 studies mentioned above that describe accountability (besides transparency) as a consequence of e-government, there were only 11 of the 101 papers which were found relevant to the current study, one of which is a literature review. These 11 studies mainly discuss accountability within an e-government context. Almost all studies that describe accountability as a result of e-government besides transparency concluded that the use of ICTs enhances accountability of government. However, there are few studies that highlight some issues that may come along with using e-government to promote accountability.

The comprehensive literature review study analysed the literature related to open data and accountability to provide a better understanding of the open data-driven public accountability concept. The study found that of 290 articles related to open data and accountability, only 12 papers addressed open data and accountability

theory at the same time. Additionally, of 155 papers related to public accountability, only 25 discussed the process of accountability, and seven set out the stages of the accountability process. Lastly, only one paper that focused on the complete accountability process (Lourenço et al., 2017). Another study found that accountability is one of the highlights that scholars should address when assessing Digital Government Units (DGUs) (Clarke, 2020).

Impact on accountability

One study was done to assess if e-government enhances accountability in EU local governments, proposing and examining several hypotheses related to Internet financial reporting practices. It concluded that, even though the level of e-government in the evaluated countries varies, accountability would not be improved without public organisation reform (Pina et al., 2010a). Secondly, a study explored how the implementation of ICTs to make the public sector more automated impacts accountability. By analysing documents related to the implementation of e-government, the study concluded that ICTs impacts accountability in many ways. It was also mentioned that as technology makes the process more automated (and more heavily involved in the processes of decision making), to avoid sanctions people may blame the technology, so there needs to be a suitable adjustment to accountability in order to avoid such dysfunctions (Smith et al., 2010).

Another study was done to propose a framework enabling accountability with the use of ICTs by strengthening the relationships by all policy maker, citizens, and service provider. It employed a case study method in which there was an analysis of a complaint redress system in the public sector of India, a system that investigates complaints by the general public. Using data from different sources, the study identified six ICTs factors that enhance accountability (Ray, 2012). In a similar vein, a study was conducted on e-government procurement in Thailand, an online system that streamlines the procurement process, looking at factors that can result in good governance. After analysing 169 responses from e-government procurement professionals, the results showed that, among other factors, transparent electronic procurement has a positive impact on accountability (Rotchanakitumnuai, 2013).

Further, a study was conducted to clarify how the accountability of public agencies in Jordan is enhanced by e-government, identifying aspects of e-government that minimise dysfunction and bad accountability relationships between the stakeholders

such as government authorities, traders, and citizens. By using a case study method in which the study drew on customs data from several sources, it was found that the aspects of e-government that minimise the dysfunctions and disorders of accountability relationships are categorised into three aspects: organisational, technological, and environmental (Al-Shbail & Aman, 2018). Moreover, another study was done to investigate the implications of e-government and its effects on the location of accountability. Based on a review of the literature related to e-government and accountability, the study concluded that e-government make the relationship between officials and citizens horizontal, so that officials can be held accountable unlike in the past where the relationship was hierarchical. However, the technology does not make accountability better or worse; it only shifts the location of accountability and places it on the public sector side (Pettrakaki, 2018).

Last but not least, a study explored how to increase government accountability so as to engage citizens in ICT-based health risk communication. After analysing 700 responses from Korean citizens, the study concluded by stating that accountability can be fulfilled through engagement of both sides – the government and the citizens – so that the two sides are complementary to each other (Lee et al., 2019).

No impact on accountability

Unlike the mainstream literature related to e-government and accountability, two of the 10 papers that discuss accountability within an e-government context found that e-government does not enhance accountability. The first study examined the relationship between monitoring performance using technology and accountability by analysing data from different levels of government employees in Greece. The findings showed that e-government does not always lead to accountability, indeed the study argues that performance technology may in fact lead to a narrowing of accountability (Pettrakaki et al., 2009).

Another study conducted in Spain sought to identify determinants that promote the implementation of e-government with regard to its advantages such as transparency, interaction with citizens, and accountability. After analysing municipal web sites, the study concluded that although ICTs lead to accountability of government in cases where citizens participate in the process of decision-making, e-government by itself does not lead to accountability. In fact, the government web

sites seem to be used for disseminating information relating to their political agenda (Ruano de la Fuente, 2014).

Concerning the second question stated in the methodology section of this chapter, (relating to investigating the current body of knowledge on the effect of e-government on accountability), as mentioned in the introductory part of this section, there is a paucity of research investigating the impact of e-government adoption, use, or implementation on accountability, especially from the standpoint of public servants. Many studies discussed above are based on either literature reviews, web site analysis, citizens, or secondary data. There are only three papers (Al-Shbail & Aman, 2018; Petrakaki et al., 2009; Rotchanakitumnuai, 2013) that involve government employees. Even though that these papers involve government employees, their focus is a discussion of the relationship between e-government and accountability in various other contexts, as illustrated above. As it were, the majority of the discussion in these papers is related to different types of accountability, such as government agencies being accountable to citizens.

Analysis of the SLR of accountability-related studies (Appendix 3) found that many studies did not explicitly identify a theoretical framework. Furthermore, while most sources that identified the study location were situated in Europe, other studies do not specify where the research was situated. The unit of analysis is also not applicable in the majority of studies; nor were dependent and independent variables.

The accountability that this current study investigates is perceived accountability; that is, to what degree government employees expect to be asked to justify their actions to other staff (mostly superiors). The current study aims to address this gap.

Compliance

There has been little investigation on compliance within an e-government context. In total, there are only 11 studies that have been found relevant to the current study. Eight of them discussed compliance within an e-government context and two incorporated transparency and accountability within their studies. However, most studies were based on web site analysis, citizens' perception, and literature reviews.

Impact on compliance

One study built a model of the acceptance of e-government compliance services. After analysing data from American citizens and non-citizens, the study constructed

a model of e-government compliance service acceptance by applying technology acceptance and trust approaches (Lee & Rao, 2009). A second study investigated the compliance level of 130 UK sites with UK disability law and Web Content Accessibility Guidelines (WCAG). The findings showed that the majority of e-government web sites related to UK members of Parliament do not comply with the UK's Disability Discrimination Act (DDA) or WCAG (Kuzma, 2010).

Another study was done to investigate the relationships between three factors – improved inspection technology, bribery, and compliance – using a Principal-Supervisor-Agent model. The results showed that along with the presence of non-corrupt supervisors, technology increases compliance. The study illustrated that by stating the technology increases compliance when the technology is “effort-inducing” or “effort-neutral”. That is, technology increases the payoff of supervisors from effort spent. This decreases supervisors' willingness to accept bribes, resulting in increased compliance (Samuel & Lowen, 2010). Fourth, another study compared Government Interoperability Frameworks (GIFs) among 21 countries. Besides other criteria, the study found that the compliance policy of UK electronic GIFs is very comprehensive, while the electronic GIFs compliance policy of Malaysia, South Africa, and Sri Lanka are superficial (Ray et al., 2011).

Further, a study provided a framework for documenting the influence of e-government by focusing on two main stakeholders, the government and its citizens. Based on the literature, the study presented a model for the effect of e-government in three government areas: compliance, policy making, and program administration (Srivastava, 2011). On the other hand, a study examined the impact of the use of the internet on trust in government and compliance in Korea. Based on the data collected from Korean citizens, the study found that the higher the use of the internet by citizens, the lower the degree of trust and the lower the level of compliance with government (Im et al., 2014).

The other study within this category was done to provide a framework for defining compliance between lower and higher levels institutions. The study concluded by proposing a computerised e-government framework to make lower level institutions comply with higher level institutions (King et al., 2017). On the other hand, a study found that the use of government applications cannot directly impact citizens' compliance (Wang et al., 2020). Last but not least, a study explored the determinants that influence electronic invoice adoption, a process that ultimately

affects efficiency of tax compliance by companies. Based on the analysis of 276 users' responses, the results showed that the adoption of electronic invoices positively associates with process efficiency of tax compliance (Qi & Azmi, 2021).

[Linking transparency and accountability with compliance](#)

The last two studies that discussed transparency and accountability along with compliance within an e-government context were based on the literature as well as interviews with knowledgeable and experts. First, a study was conducted to investigate the effect of implementing XBRL into e-government on increased transparency and accountability. The study looked at four countries where governments comply with regulatory reporting, the Netherlands, Australia, United States, and Singapore. The findings of this comparative study showed that there are differences related to the outcome of implementing XBRL in these four countries in terms of promoting information transparency and accountability in which entities are to comply with regulatory reporting. It was also found that Singapore is the only country among the four that has a mandatory reporting policy (Chen, 2012). Lastly, a study put forward a conceptual model of the impact of technology on the socio-political aspects of e-government in Iran. The study found that access to information has an effect on transparency and responsiveness (answerability) in government (Saghafi et al., 2016).

With regard to the second question stated in Section 2.2, (relating to investigating the current body of knowledge on the effect of e-government on compliance), it can be seen that there is only a limited amount of literature on the effect of e-government on compliance in general, especially from the viewpoint of the demand side, government employees. Additionally, the literature lacks empirical studies examining this relationship.

Analysis of the SLR of compliance-related studies (Appendix 4) found that many studies did not explicitly identify a theoretical framework. Additionally, while majority of sources that identified the study location were situated in the US, other studies do not specify where the research was situated. The unit of analysis is also not applicable in the majority of studies; nor were dependent and independent variables.

Most theoretical and empirical studies are concerned either with compliance in providing information or compliance of citizens and businesses with government rules and regulations. Even though these studies share the same concepts as the

current study, the sort of compliance that this study explores is different. Studies that investigate the impact of e-government on self-reported compliance from the employees' viewpoint (either via an effect of perceived transparency or otherwise) are rarely discussed. Therefore, this current study aims to address these gaps.

2.5. Chapter summary

This literature review chapter started by illustrating the methodology used to perform a Systematic Literature Review (SLR) by posing two main questions. This SLR identified 101 relevant studies of which 27 papers related to culture, 55 papers related to transparency, 11 papers related to accountability, and 11 papers related to compliance. As illustrated in the section related to culture, there were three studies that were used in both culture and transparency sections. These 101 papers were then presented, synthesised, and discussed in each relevant section, from which research gaps were identified.

The research on culture has largely focused on citizens and not employees. Much of the cultural e-government research has employed unit of analysis at the country level rather than the organisational and has used secondary data sources such as the UN E-Government Index. Similarly, the literature on accountability and transparency largely focuses on citizen perspectives rather than that of employees. There is very little research on workers' compliance. Hence, there are a number of research gaps which the current study addresses, and in this way, it makes a novel contribution to knowledge.

The current study aims to bridge these gaps by developing and validating a theoretical model of the influence of organisational culture on e-government use, and the impact of use of such systems on perceived transparency, perceived accountability, and self-reported compliance, all from the perception of government employees.

The next chapter demonstrates the research methods employed to achieve the aim of this study.

Chapter Three: Research methods

3.1. Introduction

This chapter begins by stating the research objectives and the questions arising from them, followed by the rationale for using an explanatory sequential mixed methods design. This is followed by a brief description of the first, quantitative stage, including data collection and analysis. There is then a discussion of the second, qualitative stage, including sample selection, discussion of the interviews, and data analysis techniques. The chapter concludes with a discussion of the ethical considerations in both phases.

3.2. Research objectives and questions

As discussed in Chapter One, the aim of this study is to develop a theoretical model of the influence of organisational culture on the use of e-government systems, and the impact of such systems on transparency, accountability, and compliance in public organisations in a the developing country, Saudi Arabia. In doing so, this study poses the following specific research questions:

RQ1: Does organisational culture influence the use of e-government systems within government organisations? And if so, what is the nature of the influence?

RQ2: Does the use of e-government systems have an impact on levels of perceived transparency within government organisations? And if so, what is the nature of the impact?

RQ3: Does the use of e-government systems have an impact on levels of perceived accountability within government organisations? And if so, what is the nature of the impact?

RQ4: Does the use of e-government systems have an impact on levels of self-reported compliance within government organisations? And if so, what is the nature of the impact?

3.3. Research approach

3.3.1. Mixed methods research

There are several factors that have been identified by scholars in the field of Information Systems (IS) that should be taken into consideration when choosing a

research approach. According to Benbasat et al. (1987) and (Galliers, 1992), these factors are: the study's nature, context, and objectives. A mixed methods approach was chosen after evaluating the available research approaches. An illustration is provided later in this section.

The mixed methods approach has grown noticeably since the 1980s when the approach was first recognized as an alternative to the existing quantitative and qualitative approaches (Denzin, 2010; Johnson et al., 2007; Tashakkori & Creswell, 2007; Teddlie & Tashakkori, 2009).

Over recent years, a definition of the mixed methods approach has emerged, distinguishing it from several other methods, objectives, processes, and philosophies of research (Creswell & Clark, 2018). Greene et al. (1989) came up with an early definition in the 1980s, emphasising the mixing of methods and separation of the link between methods and philosophy. The mixed methods approach has been gaining researchers' attention in the past few years, and a number of scholars have attempted to provide a clear definition. Johnson et al. (2007) collected 19 definitions of mixed methods provided by 21 leading researchers of the mixed methods approach. Their comprehensive definition was that:

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the purposes of breadth and depth of understanding and corroboration. (Johnson et al., 2007, p. 123).

Others like Tashakkori and Creswell (2007) defined mixed methods research by focusing on the process of an approach in which data is collected and analysed in a way whereby integration of the findings – drawing of a conclusion – comes after using quantitative and qualitative methods in a single study. A while later, Creswell (2014) stated that in order for researchers to have the best understanding of a research issue, they need to employ both quantitative and qualitative approaches.

Investigators who use the mixed methods approach encounter a number of challenges (Fetters & Freshwater, 2015) as it needs more work, time, and financial resources (Niglas, 2004). This means that researchers have to develop a variety of skills (Bryman, 2007). Notwithstanding these challenges, the essence of mixed methods research is to bridge the gap between the quantitative and qualitative

approaches (Johnson & Onwuegbuzie, 2004), recognising that the gap cannot be closed using a single approach.

The mixed methods approach, and in particular its explanatory sequential design, is an approach where an initial quantitative phase is followed by a qualitative phase that seeks to explain the results of the first phase (see Figure 3). The approach was chosen here for several reasons. One of which is to close the gap between the numerical results – the quantitative relationships between the factors of phase one – and understanding what the relationships mean (the qualitative phase).

Because this study is based on a theoretical model of the influence of organisational culture on the use of e-government systems (and the impact of the use of such systems on transparency, accountability, and compliance), there was a need to explain the results found in the quantitative phase. This was done by involving participants in a qualitative phase so as to better understand the relationships between the variables. In this way, they could share their experience and explain how these relationships worked in real life (Creswell & Clark, 2018). In other words, the quantitative phase indicates that a relationship exists, but it does not reveal the different ways it can be manifested. Further, it does not give insight into things that might influence it. A hypothesis test does not tell anything about such things as whether people are aware of “being monitored”, whether they are troubled by something or have no problem, or whether the relationship has other consequences for people which go beyond the model. These are all the sort of questions that a qualitative stage is able to investigate.

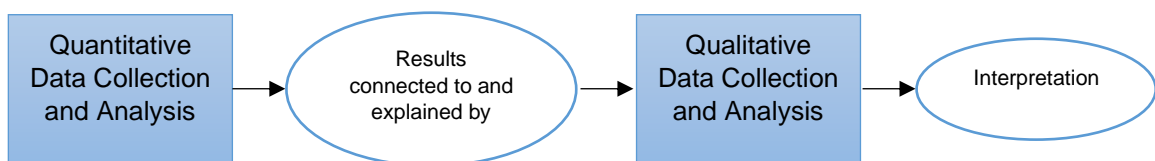


Figure 3. The explanatory sequential design (Creswell & Clark, 2018, p. 66)

Another reason is that the use of mixed methods helped in improving the validity of the project by validating the findings using a variety of sources of information (Creswell & Clark, 2018; Venkatesh et al., 2013). The model was based on two theoretical frameworks, Hofstede’s Cultural Theory (Hofstede et al., 2010) and Panopticon Theory (Foucault, 1995). It was assumed that different types of cultures drive the use of e-government systems. The work of government employees is

perceived to be more transparent when using these e-government systems. In such a situation, employees perceive that there is a likelihood that they would not only be held accountable when something goes wrong but also are more inclined to comply with rules and regulations established by their organisations, as their work is perceived to be seen by others within the organisation. The results of the first phase showed that most of the numerical relationships were significant, and some effect sizes were large. This might mean that the theories adopted were the reasons the findings, or it could mean something else. There was therefore a need to tie relationships to theories by using a variety of sources of information, and this was the qualitative phase.

This leads to the use of a triangulation approach. Triangulation means using multiple methods in one single piece of research, benefiting the project in terms of reliability and validity (Denzin, 1978). The main purpose of triangulation is to not only help confirm the validity of some research but also to help in capturing different perspectives. Denzin and Lincoln (2011, p. 5) define triangulation: “The use of multiple methods, or triangulation, reflects an attempt to secure an in-depth understanding of the phenomenon in question.”

Further, as mentioned above, the model of this project starts with two theories based of relationships which already exist in the literature (as can be seen in the development of hypotheses in Section 4.2.3). That is, several studies have already examined the relationship between certain cultural dimensions and the use of technologies (or e-government adoption, development, or use). At the same time, there are other studies that have investigated the relationship between the use of technologies of e-government and transparency. The literature also contains studies examining the relationship between transparency and accountability or compliance. However, most of these studies examine these relationships from the point of view of citizens (involving different types of transparency, accountability, and compliance). This study, on the other hand, explores these relationships from the viewpoint of government employees. No study has been found exploring these relationships holistically and integrating the theories.

Since there was no study investigating the suggested theoretical model [see Figure 5 in Section 4.2.2 indicating the instruments which were already available (Creswell & Clark, 2018)], there was a need to first test the whole model quantitatively, as this was the essential base for the project. Subsequently, the role of the qualitative

phase is to explain the significant (or non-significant) relationships found in the first phase.

Since both the quantitative and qualitative approaches have their own strengths and weaknesses, the mixed methods research makes up the weakness of one approach by the strength of the other. That is, in terms of the quantitative approach, it might be argued that it is weak in understanding or explaining the context or the place in which an individual lives. Also, participants in the quantitative approach are restricted in their choices; for example, in the questionnaire, which was true in this case, their voice was not heard. In other words, the quantitative stage doesn't seek to understand the context or give individual participants a voice, but to collect data from a large, generalisable sample. This comes at the expense of understanding context. Therefore, following it is the qualitative stage, which is not necessarily generalisable, but goes much deeper into context, giving the best of both worlds. The real strength of the qualitative approach is to provide an opportunity for participants to convey in-depth insights and provide better understanding of the reasons for the identified relationships between variables (Creswell & Clark, 2018).

Four main steps set out by Creswell and Clark (2018) in their explanatory sequential mixed methods design (see Figure 4). Likewise, after conducting a systematic literature review and identifying the research gaps (Chapter Two) in which the theoretical model was developed, adopting two theories, these steps were followed as a part of this project. The first step begins with the research questions involving numerical data collection and analysis. These occupy Chapters Three and Four. Chapter Five covers the second and the third steps, in which the research questions, sampling and the qualitative data collection protocol are set out. After obtaining ethics approval, data was collected using semi-structured interviews (Saunders et al., 2009b) and the data was then analysed using thematic analysis (Braun & Clarke, 2006). The findings (step four) are discussed in Section 5.7 of Chapter Five, and discussion of both results and conclusion can be found in Chapter Six.

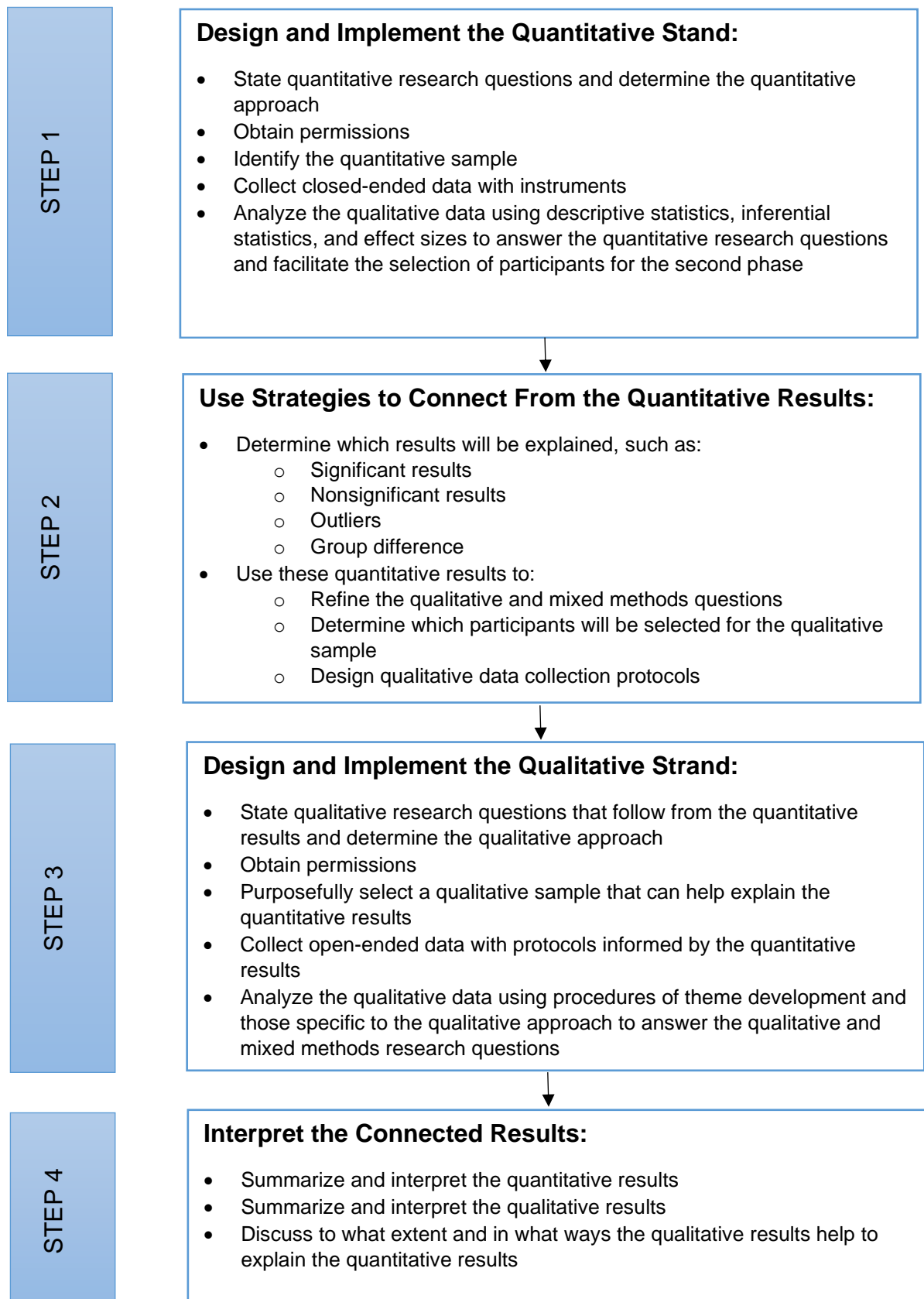


Figure 4. Flowchart of the basic procedures in implementing an explanatory sequential mixed methods design (Creswell & Clark, 2018, p. 79)

As this is an Information Systems study which uses a mixed methods approach, it is important to relate it to the nature of theory in IS suggested by Gregor (2006). Gregor (2006) distinguishes five types of IS theory – Analysis, Explanation, Prediction, Explanation and prediction, and Design and action. Since this project also employs an explanatory sequential mixed methods design (in which several predictions are hypothesised and then explained in a qualitative phase), it can be considered as fourth type of IS research – Explanation and prediction.

3.3.1.1. Quantitative phase

This section summarises how the quantitative phase was carried out; more details can be found in Chapter Four.

The aim of any quantitative approach is to collect numerical data that describes relationships between measurable constructs (Bryman, 2008). Here, the quantitative approach was used to develop and test a proposed theoretical model. The goal was to test and validate relationships between the variables in the model based on a statistical analysis, and from these results and conclusion can be drawn (Malhotra, 2016). This approach is commonly used in scientific research (Labaree, 2009). In the quantitative approach here, a questionnaire was used to collect data. A questionnaire is a research instrument consisting of sets of questions which is used to collect data from participants, and is a common research tool (Malhotra, 2016), especially in IS research (Orlikowski & Baroudi, 1991).

After identifying the research gaps in Chapter Two, establishing a research model (Section 4.2.2), and developing hypotheses (Section 4.2.3), a clear definition of each construct was developed (Section 4.2.1). Based on these definitions, measurement items for each construct were selected from peer-reviewed studies and suitably adapted. These items were translated into Arabic and then back-translated into English in order to check the accuracy of the translation. A pilot study was then carried to ensure the clarity of the items and to check the response rate of the two versions of the questionnaires. More details can be found in Section 4.5. This was then followed by sample selection and data collection. In a data analysis step, data screening was performed followed by statistical testing to ensure the reliability and validity of the constructs. This phase ended by reporting a structural model incorporating the results of the proposed hypotheses, and was completed with a discussion of the results.

3.3.1.2. Qualitative phase

As discussed in Section 3.3.1, the importance of this phase is to explain the significant (or non-significant) relationships found in the quantitative phase.

Qualitative research is defined as “an inquiry process of understanding based on a distinct methodological approach to inquiry that explores a social or human problem. The researcher builds a complex, holistic picture; analyzes words; reports detailed views of participants; and conducts the study in a natural setting”(Creswell & Poth, 2016, p. 506). Researchers using a qualitative approach explore their topic in a natural setting in which they attempt to make sense of or explain phenomena in terms of the meanings that individuals bring to them (Denzin & Lincoln, 2018). A qualitative method is useful as it helps explain the meaning of the relationships found in the quantitative phase and allows the phenomena to be understood in depth (Johnson & Christensen, 2014). These relationships to be examined often give limited understanding due to the nature of the quantitative analysis, so the purpose of the qualitative approach is to explore the meanings of the results rather than to produce more numbers (Creswell, 2014). The emphasis is on the spoken words rather than numbers (Bryman, 2008).

Among qualitative approaches, interviews are the most recognised and widely used data collection method (King & Horrocks, 2010; Kvale, 2007; Minichiello et al., 2008; Qu & Dumay, 2011; Spradley, 1979). The interview is defined “a specific form of conversation where knowledge is produced through the interaction between an interviewer and an interviewee” (Kvale, 2007, p. xvii). A semi-structured interview was utilised in this study because it gave participants room to freely express their views on a particular subject using their own words (Bernard, 1988).

Semi-structured interviews can generate qualitative data that is dependable and comparable (Rubin & Rubin, 2011), and frequently used in explanatory mixed methods research (Saunders et al., 2009b). The semi-structured interviews in this study were designed to explain the relationships found in the quantitative phase and provide supplementary evidence to the numerical data of the previous phase. Semi-structured interviews give the participants scope to bring new insights that have not been anticipated by the researcher (Braun & Clarke, 2013), and this was demonstrated here when participants revealed fresh insights. More information is provided in Chapter Five.

The main topics to explore were:

- The type of organisational culture within the participant's organisation.
- The type and the interaction of the participant's personality traits, using the Five Factor Model (FFM), with Hofstede's cultural dimensions (Hofstede & McCrae, 2004; Migliore, 2011), introduced in the discussion of quantitative phase.
- The participant's level of use of e-government systems, and whether different organisational cultural dimensions and personalities have any influence on the use of e-government systems.
- Whether participants perceive the organisation's ability to monitor their usage of e-government systems and their feelings about such monitoring.
- Whether any perceived ability of the organisation to monitor the participant's use of e-government influences their behaviour to become more accountable, particularly with respect to:
 - Whether behavioural changes include avoiding the use of e-government systems to avoid being monitored.
- Whether any perceived ability of the organisation to monitor the participant's use of e-government influences their behaviour so as to increase compliance with the organisation's policies or rules.

Data was collected using purposive sampling (Braun & Clarke, 2013; Morgan, 2014; Tashakkori & Teddlie, 1998) and snowball sampling (Lee, 1993; Lune & Berg, 2017) strategies from Saudi government employees working in different types of organisations. The development of questions in this phase was informed by the main research questions of this study (see Section 3.2), specifically by the results of the quantitative phase – following the guidelines suggested by (Leech, 2002; Liamputtong, 2012; Qu & Dumay, 2011; Spradley, 1979; Whiting, 2008) in which loaded, double-barrelled, academic jargon, and leading questions were avoided (Leech, 2002; Liamputtong, 2012). More details relating to the interview questions, including the Interview Guide, are set out in Chapter Five.

Interviews were transcribed and coded and then the codes were aggregated to form potential themes. The process of performing thematic analysis was informed by Braun and Clarke (2006). Coding depends on whether themes are data-driven or theory-driven (Braun & Clarke, 2006). Since this is an explanatory mixed methods

design, in which the theoretical model explains the quantitative phase, the theory-driven method was employed, meaning that the data was approached with specific questions in mind around which the researcher could code the data (Braun & Clarke, 2006). The analysis resulted in 22 themes, 10 sub-themes, 54 codes, and two sub-codes. Details of the analysis process are provided in Chapter Five.

3.4. Ethical consideration

Since human participants were to be involved, ethics approval for the first phase was granted from the Human Research Ethics Committee (HREC) at Curtin University, which classified the project as low-risk (approval number HRE2019-0699; Appendix 9). Data for the first phase was collected from a host organisation located in Saudi Arabia, which facilitated access to government workers from hundreds of other government agencies and departments; approval was also obtained from the host organisation before data collection commenced (Appendix 10). More information about data collection can be found in Section 4.6.

Before beginning the interviews in phase two, ethics approval was granted from the Human Research Ethics Committee (HREC) at Curtin University, which was also classified as low-risk (approval number HRE2020-0481; Appendix 12). To obtain approval, an ethics application was submitted to HREC which included the Recruitment Material (Appendix 13), Information Statement (Appendix 14), Consent Form (Appendix 15), and an overview of the semi-structured interview guide (Appendix 16).

3.4.1. Consent form

In the first phase, all participants were provided with an Information Statement (Appendix 8) before starting the survey. The Information Statement consisted of four main aspects: research objectives, consent, appreciation of what participation involved, and, finally, contact details for the HREC, principal supervisor, co-supervisor, and researcher. The Information Statement made clear that participation in the study was completely voluntary and that by clicking the “Next” button they implicitly consented to participate. Additionally, it was stated that the participants had the right to withdraw from the survey at any time without prejudice or negative consequences, and that no reason needed to be provided. Participants were invited to contact the principal supervisor, co-supervisor, and/or researcher to ask any

question related to the project or to contact the HREC to discuss any matters concerning the conduct of the study or their rights as a participant if they wished to make a confidential complaint.

In the second phase, along with the Recruitment Material, the Information Statement and the Consent Form were sent via email to the potential participants as attachments. The recruitment material was basically an invitation that briefly explained the objectives of the project and asked participants to read the information statement and fill in and sign the consent form if they were willing to participate. As with the information statement of the first phase, the information statement of the second phase consisted of similar points: research objectives, appreciation of what participation involved, and contact details of the HREC, principal supervisor, and researcher. Other details regarding the interview were added as can be seen in Appendix 14: Information about the approximate length of time the interview may take, audio recording, and participant's rights. The consent form provided information about the project and names of principal supervisor and researcher. Several additional points related to the study (and mentioned in the information statement) were about the participants giving consent to participate and to be audio-recorded. Both the researcher and the participant had to fill in and sign the consent form in order for the interview to proceed.

3.4.2. Confidentiality and anonymity

In both the first and the second phases, anonymity and privacy of participants were respected. The Information Statement for both phases stated that participants' responses were completely anonymous, and that participants' information would not be identified in any of the publications stemming from the project. Further, in order to ensure that participants would not suffer harm in any way, names or any identifying information about the participant was not recorded in the first phase. For the second phase and as set out in the information statement, because the interviews were recorded, the participants' real names and details remained confidential and would not appear in any publication resulting from the study. Participants were given the option of receiving the results of the study if they were interested.

This project is objective and independent (Boddy et al., 2010). Upon completion of this project, for a period of seven years, all data of this project is to be securely stored at Curtin University and that only the researcher and the thesis committee

have access to the data during the period of the project; and data will be destroyed after the period mentioned above.

3.5. Chapter summary

This methods chapter provided an overview of this study's objectives and research questions. The methods used were discussed. Since this study employs an explanatory sequential mixed methods design, justification for the use of this design was provided. The overall process used to conduct the quantitative phase, including instrument collection and development, sample selection, and data collection and analysis was set out. Next, the procedure involved in undertaking the qualitative phase was described, including sample selection, interview, and analysis techniques. Finally, the way in which ethical considerations were taken into account was described.

Chapter Four: Quantitative phase

4.1. Introduction

As illustrated in previous chapter, this study employs an explanatory sequential mixed methods design which first uses the quantitative stage to develop and test the research model (Creswell & Clark, 2018). This chapter presents the theoretical model investigated in this stage, along with definitions of its constructs and the associated hypotheses. How the research is related to another theoretical approach is then discussed. Questionnaire development where all items of the ten constructs is provided. Details of the procedures followed, including how the survey tool was translated into Arabic and then back-translated into English, are described.

This is followed by the description of a pilot study that was carried to check whether there were any issues with clarity of the survey items and to examine the response rate to both versions of the survey. Details of sample selection and data collection are then provided. After describing a data screening procedure, a data analysis section employs several statistical tests to check the reliability and validity of the constructs.

This chapter concludes by reporting the structure of the model, together with statistics such as path coefficient and *t*-values. Then, the results of hypothesis testing are presented, indicating whether the hypotheses were supported or not. Lastly, the findings are discussed and several points for further investigation are suggested.

4.2. Theory development

4.2.1. Definition of constructs

This section provides definitions of the study constructs on which the selections and the adaption of the items depend. Before selecting and adapting items that measure the constructs, a clear definition for each of them is needed since a construct “word” can have different meanings (Pallotti, 2009). The definitions below make clear what the study measures.

Power Distance

“The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede et al., 2010, p. 61).

Individualism/Collectivism

“Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after him- or herself and his or her immediate family. Collectivism as its opposite pertains to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty” (Hofstede et al., 2010, p. 92).

Indulgence/Restraint

“Indulgence stands for a tendency to allow relatively free gratification of basic and natural human desires related to enjoying life and having fun. Its opposite pole, restraint, reflects a conviction that such gratification needs to be curbed and regulated by strict social norms” (Hofstede et al., 2010, p. 281).

Uncertainty Avoidance

“The extent to which the members of a culture feel threatened by ambiguous or unknown situations” (Hofstede et al., 2010, p. 191).

Long/Short Term Orientation

“Long-term orientation stands for the fostering of virtues oriented toward future rewards—in particular, perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and present—in particular, respect for tradition, preservation of “face,” and fulfilling social obligations” (Hofstede et al., 2010, p. 239).

Femininity/ Masculinity

“A society is called masculine when emotional gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success, whereas women are supposed to be more modest, tender, and concerned with the quality of life. A society is called feminine when emotional gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life” (Hofstede et al., 2010, p. 140).

E-government Use

E-government as a terminology has been widely discussed in the literature. Many scholars have defined it in several ways, and most of them share a common theme, which is the use of ICTs to provide and foster government services. However, the literature rarely touches on the compulsoriness of these government services in regard to workers doing their job, which is area that this study focuses on. ***This study defines e-government use as the use of electronic systems in order to foster accessibility and delivery of service and information provided by government to employees, and the extent to which the use of these applications is mandatory for them to do their job.*** The study recognises that mandatoriness is not always a simple yes or no; an organisation's tolerance for workers not using the systems provided will vary from one organisation to another, and there is a difference between a worker not using a system at all and not using it for certain tasks. These nuances were borne in mind when the survey items were developed to ensure that the survey data gave a reasonable measure of the degree to which use of e-government systems is mandatory.

This definition was developed on the basis of the definition by Layne and Lee (2001). Layne and Lee (2001, p. 123) define e-government as "government's use of technology, particularly web-based Internet applications to enhance the access to and delivery of government information and service to citizens, business partners, employees, other agencies, and government entities." This definition includes all points – the use of ICTs in enhancing accessibility and delivery of service and information provided by government to employees – and this serves the main purpose of this study, with one exception. The exception is compulsoriness, which was one main addition made here to cover the range of the study. Since the study is trying to measure "e-government use", not e-government itself, the changes to the definition adapts it to the purposes of this study. So, the researcher added: "the extent to which the use of the ICTs is mandatory for employees to do their job", allowing him to measure the employees' degree of "compulsoriness" when doing their job.

Other definitions provided by leading scholars in this field might suit the general purpose of this study but they are not as apt as the definition provided by Layne and Lee (2001). Carter and Bélanger (2005, p. 5) suggest that "E-government is the use of information technology to enable and improve the efficiency with which

government services are provided to citizens, employees, businesses and agencies.” One can argue that this definition is very close to the definition that this study is using. It is true that this definition shares several points with our definition, such as the services provided to employees, but the definition here focuses more on improving the efficiency of those services, something that this study is not trying to measure. For this reason, the definition is unsuitable for the purposes of this study.

Others like Zhao and Khan (2013, p. 710) define e-government as “the use of information and communication technology (ICT) to improve the business processes and service delivery of government departments and other government-owned entities.” This definition focuses on the usage of ICTs to foster business processes of government to certain beneficiaries. All researchers mention in their definitions the use of ICTs, but this particular definition focuses on the business processes, something that this study does not measure, and so it is not the best fit to the purposes of this study.

Another definition: “e-Government is commonly conceptualized as governments' use of Information and Communication Technologies (ICTs) combined with organizational change to improve the structures and operations of government”, provided by (Fieldit et al. 2003, as cited in Twizeyimana & Andersson, 2019, p. 168), focuses on the use of ICTs and organisational change to enhance not only the structure but also the operation of government. This definition does not serve the purposes of this study because it is remote from what this study is trying to measure. That is, the main concern of this study is the use of ICTs to foster accessibility and delivery of services and information, and, most importantly, the mandatoriness of these services to employees when they do their job.

The mandatoriness that this study is measuring is not a black or white kind of measure. That is, it is not the case that employees must either do their job through the system or not. It is rather the extent to which their job is done through the systems. It seeks to gauge to what extent the use of e-government applications “systems” cannot be circumvented, since the use of one application might be mandatory but perhaps not all are mandatory.

Perceived Transparency

This study attempts to measure perceived transparency. As can be seen in the literature in Chapter Two, almost all studies related to transparency (at least those that are covered in the literature and discussed here) talk about the availability of either information or performance. Almost none of them mentions the perception of transparency of workers, which is what this study is trying to measure. For example, Grimmelikhuijsen (2012, p. 55) defines transparency as “the availability of information about an organization or actor allowing external actors to monitor the internal workings or performance of that organization.” This definition discusses the availability of information concerning the performance of that organisation. Here, the main concern is the availability of information about the “organisation”, not the employee. Further, this definition also focuses on how outsiders are able to observe activities and decisions made by the organisation. This study is measuring the consciousness of the employee that his or her work is perceived to be seen by others within the organisation, not by outsiders. Thus, this definition is not suitable for the purposes of this study.

For Cucciniello et al. (2012, p. 312), transparency is “a tool for enhancing the accountability of governments, as a principle to be implemented in order to reduce corruption in public administration, and as a means for making information on government performance more readily available”. This definition discusses transparency as a tool for enhancing the accountability of governments. This might be true, but this does not serve the construct that this study is trying to measure. Moreover, it mentions that transparency may help in reducing corruption, which also might be true, but, this study does not aim to measure whether transparency reduces corruption or not. One could argue that it is mentioned at the end of the definition that transparency is “making information on government performance more readily available.” It is true that this study concerns the availability of information, but it is the availability of information about the employee, not about the organisation. Again, these points make this definition unsuitable for our purposes.

This leads to the definition of Pina et al. (2007). Pina et al. (2007, p. 452) define it as “Transparency on web sites refers to the extent to which an organization makes information about internal works, decision processes and procedures available.” Several points in this definition make it close to serving the purposes of this study. First, it is stated that transparency is “on web sites”, which makes it more specific,

and indeed this is what the construct of perceived transparency is about. But, this study seeks to measure whether workers are aware, through logins, that they are seen by others within the organisation. Second, it is pointed out “the extent to which an organization makes information about internal works, decision processes and procedures available.” Yet what this study is trying to measure is the degree that employees are conscious that their actions are being seen by others within the organisation. Workers are an important part of this study but they are not mentioned in this definition, so change was made here to adapt it to our purposes. As mentioned above, other definitions are a bit remote from what the study is trying to measure, and since this was the closest one, it was adapted to serve the purposes of this study.

In adapting the definition of Pina et al. (2007) to make it fit in with the purposes of this study, ***the study defines perceived transparency as the extent to which workers are conscious that their activities, performance, and decisions at work are perceived to be seen by others within the organisation.*** Besides the point just illustrated, “to what extent” was added as it is important to measure the degree of employees’ “awareness” – the other word that was added to make the definition fit the purposes of this study.

Perceived Accountability

The purpose of this study is to explore the extent to which workers perceive that they can or will be held accountable for their actions at work. The study adapted the definition of accountability suggested by (Bovens, 2007) to make it fit with our purposes as: ***perceived accountability is to what degree worker expects to be asked to justify their actions to other staff (mostly superiors).*** This is the definition that comes closest to the purposes of this study. Bovens (2007, p. 450) defines accountability as “relationship between an actor and a forum, in which the actor has an obligation to explain and to justify his or her conduct, the forum can pose questions and pass judgement, and the actor may face consequences.” This definition states that the actor, who is the employee in this case, is obligated to justify his or her actions to a forum, which is the employer in this case, where questions are posed by the employer, and judgement comes afterwards. In other words, the employee perceive that he or she might be held accountable, making this definition suitable for purposes of this study.

Even though that other scholars' definitions of accountability may share a common overall meaning, for the purposes of this study they are not as good as the definition provided by Bovens (2007). For instance, Bovens et al. (2014, p. 4) at a later time define accountability as "The expectation that one may be asked, often by an authority or one's superior, to justify one's thoughts, beliefs, or actions." The definition here mentions not only actions but thoughts and beliefs; nevertheless, this research focuses only on the actions of employees when they are performing tasks, and so this definition is unsuitable for the purposes of this study.

Vance et al. (2015, p. 347) define accountability as the "process in which a person has a potential obligation to explain his/her actions to another party who has the right to pass judgment on those actions and to administer potential positive or negative consequences in response to them." This definition focuses on the process and discusses both the positive and negative consequences. However, in terms of measuring perceived accountability, this study focuses on neither the process nor the positive consequences, making it unsuitable for the purposes of this study.

Lastly, Han and Hong (2016, p. 4) define accountability "in terms of how public agencies and their employees manage the diverse expectations generated inside or outside the organizations". This definition is also unsuitable since the work here involves managing expectations from both inside and outside the organisation. The construct, perceived accountability, which is what this study is trying to measure, focuses only on the expectation of workers being held accountable by the organisation they work for.

The most suitable definition that fits the purposes of the study is the one provided by Bovens (2007), and so this study adapts this definition. Since the study seeks to measure the perceived accountability, not actual accountability, some changes have been made to this definition. "To what degree" was added, as it is important to measure the extent to which the employee believes that if he or she does something wrong, they will be held accountable.

Self-Reported Compliance

Compliance is the construct least discussed in the literature. Definitions such as “a particular kind of response—acquiescence—to a particular kind of communication—a request” (Cialdini & Goldstein, 2004, p. 592) regard it as the response to a request. The construct that this study seeks to measure is self-reported compliance. This means that employees provide their own accounts of whether they are more inclined to comply with rules and regulations or not. Thus, the above definition does not suit what is wanted here.

Edwards and Wolfe (2005, p. 48) define it as “Compliance in general terms is the adherence by the regulated to rules and regulations laid down by those in authority.” This definition also does not fit with the purposes of this research because it states that the rules and regulations that an employee should adhere to are made by those in authority. This definition does not specifically mention workers at all, whereas in our definition employees are the main point as it is self-reported compliance. One could argue that this definition talks about adherence, which is a major aspect of the current study definition. This is true, but this study does not focus on who makes the rules and regulations; the main concern here is just that the rules and regulations exist and are made by the organisation. Who makes them is unnecessary to this research, so the definition is unsuitable.

This leads to the definition provided by Tyler and Blader (2005). Compliance for Tyler and Blader (2005, p. 1134) is the “employee adherence to organizational rules and policies”. This definition was adapted with slight amendments to serve the purposes of the study. This study defines ***self-reported compliance as to what extent a worker is more inclined to adhere to rules and regulations established by the organisation***. It is true that the definition of Tyler and Blader (2005) is simple; this definition is also the closest for the purposes of this study because it gives the main elements – the employees and their adherence to rules and regulations. Since the study seeks to measure “self-reported compliance”, not actual compliance, some changes have been made to the definition to make more apt. “To what extent” was added as it is important to measure the degree of employees’ adherence to rules and regulations.

4.2.2. Research model

The proposed research model of this project consists of two parts. Two theories were adopted as a background of this model. The first part of this model is concerned with organisational culture. It predicts that culture is a driver that influences e-government use. Hofstede Theory (Hofstede et al., 2010) was adopted as a background for the independent variables of this research model. Hofstede's model consists of six dimensions. All of them – Power Distance, Individualism/Collectivism, Indulgence/Restraint, Uncertainty Avoidance, Long-term/Short-term Orientation, and Femininity/Masculinity – were predicted to have an influence on E-government Use as will be illustrated in the next section.

Panopticon Theory (Foucault, 1995) , the second theory adopted, is concerned with impacts of the dependent variables of the model, the impact of E-government Use on Perceived Transparency, and subsequently on Perceived Accountability and on Self-Reported Compliance, and these will be illustrated in the next section (see Figure 5).

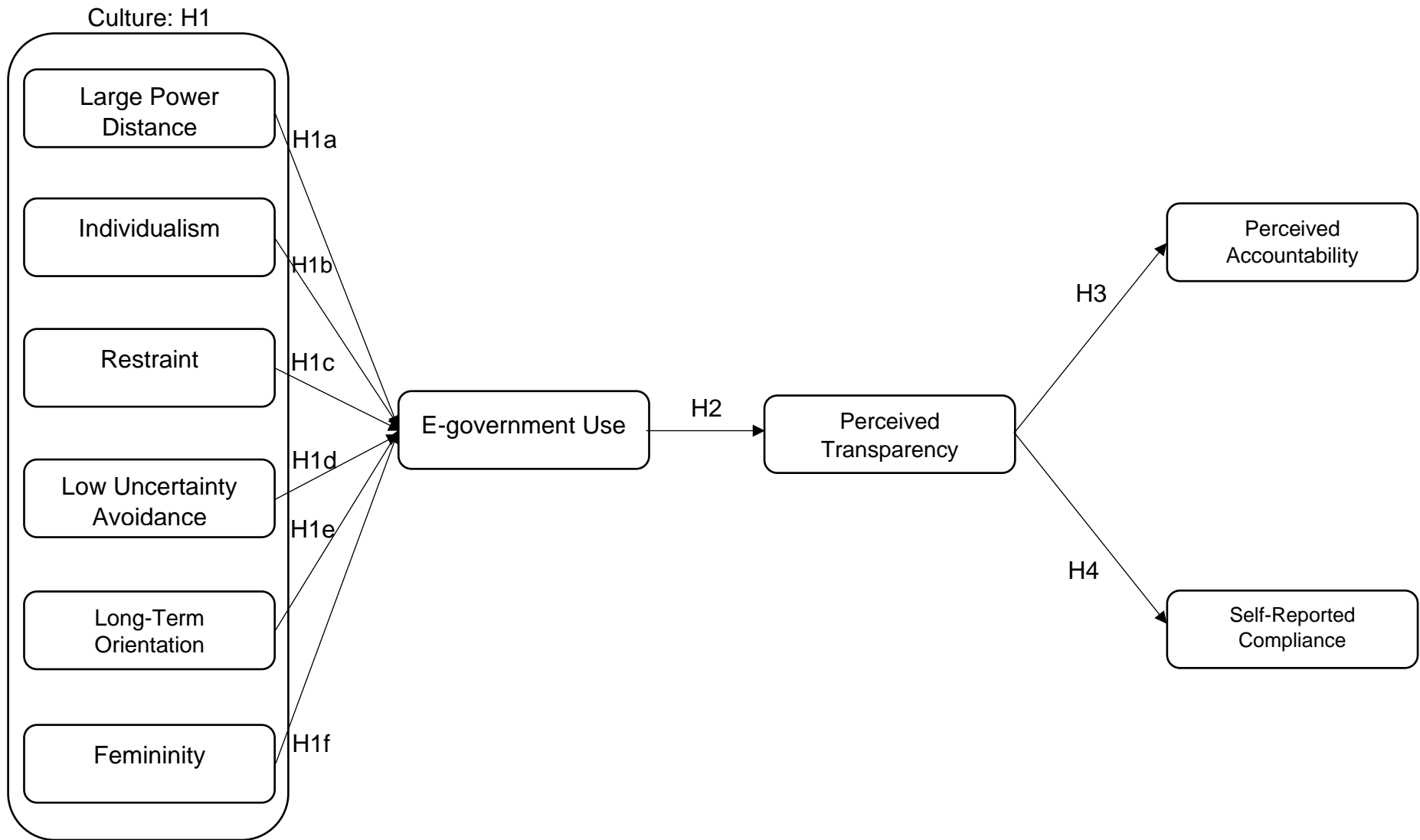


Figure 5. Research model

4.2.3. Development of hypotheses

The first dimension to consider is Power Distance. Individuals who score low in this dimension accept that a hierarchical organisational structure is needed to create order, but this does not mean that the role of superiors cannot be changed. In this type of culture, subordinates expect to be consulted. Lastly, they believe that inequality is not right and should be eliminated so that superiors and subordinates should consider themselves equal. On the contrary, individuals who score high in this dimension accept a hierarchical organisational structure in which subordinates expect to be directed. In this type of culture, inequality is more likely to be normal. Lastly, centralisation is more common where there are more supervisory staff (Hofstede et al., 2010). Having said that, superiors with greater power distance are more likely to prefer to use e-government (Warkentin et al., 2002), and therefore, this study predicts that it is difficult for employees in cultures with large power distance to withstand calls to use e-government systems, as members expect to be told and supervised.

H1a: Large Power Distance culture positively influences the use of e-government systems within government organisations.

The second of Hofstede's cultural dimensions is Individualism vs Collectivism. Individuals in collectivist cultures care not only about their extended families but also others in their communities. Relationships in this type of culture are prioritised over work. Unlike individualism culture, when it comes to communication, there is more social capital and as a result there are likely to be fewer communication problems. Conflict is not welcomed in this culture since harmony should be within the group because otherwise ties become loose (Hofstede et al., 2010).

In contrast, members of individualist cultures tend to prioritise work over their relationships. When it comes to communication, it can be more time-consuming and, where social ties are weak, potentially involves conflict. In this type of culture conflict is not harmful and may sometimes be fruitful (Hofstede et al., 2010). The organisation's interests are more likely to prevail, and members are likely to use e-government (Merhi, 2018) because organisational goals are the priority of both managers and their subordinates. Therefore, this study predicts that in individualist cultures superiors are more likely to encourage using e-government systems

because for members of this culture work is more important than in collectivist cultures.

H1b: Individualism culture positively influences the use of e-government systems within government organisations.

Indulgence vs Restraint is the third dimension that this study predicts has an influence on e-government use. Individuals in more indulgent cultures not only have greater freedom of speech but also greater freedom of choice and control over how life turns out. Additionally, members in an indulgent culture do not give maintaining order a high priority. On the contrary, members in more restrained cultures, according to prevailing social norms, tend to have less freedom of speech and they are more free to break away from social norms or expectations. Under the rule of law, maintaining orders is likely to be priority and that individuals tend to be more controlled (Hofstede et al., 2010). This study predicts that in a restraint culture it is difficult for subordinates to withstand calls for the use of e-government systems since individuals tend to maintain order.

H1c: Restraint culture positively influences the use of e-government systems within government organisations.

The fourth of Hofstede's cultural dimensions is Uncertainty Avoidance. Individuals who score high in uncertainty avoidance tend to be rule oriented and do not welcome ambiguity. That is, members in the organisation are more rigid in terms of behaviour and when applying rules. In contrast, individuals who score low in uncertainty avoidance believe that rules are to help and can be changed if necessary. Additionally, members in an organisation tend to be more relaxed when it comes to change. Individuals are more likely to use any tool or technology (Al-Hujran et al., 2011) that helps them achieve their goals. For them it does not matter whether the technology is new or not (Hofstede et al., 2010). The study predicts that members in low uncertainty culture are likely to prefer to use e-government systems since rules are set just to help and change is welcome, so where they can use any technology to achieve their goals.

H1d: Low Uncertainty Avoidance culture positively influences the use of e-government systems within government organisations.

The fifth dimension is Long-term vs Short-term Orientation. Members in the short-term orientation culture tend to have more respect for traditions and these traditions cannot be changed. Unlike long-term orientation culture where managers adapt to circumstances, superiors here are more likely to act the same, meaning that no matter what the circumstances are, fixed norms and traditions always apply. On the other hand, members of a culture with a long-term orientation are more future oriented and encourage perseverance. Also, members adapt to circumstances. Which norms and traditions apply in a long-term orientation culture depend on the situation. Above all, traditions can be changed (Hofstede et al., 2010). People with long term orientation are more likely to use e-government to reach their innovative plans (Arslan, 2009), and therefore this study predicts that such people are more likely to encourage use of e-government systems since they are future oriented and perseverance is encouraged.

H1e: Long-term Orientation culture positively influences the use of e-government systems within government organisations.

The last of Hofstede's cultural dimensions is Femininity vs Masculinity. Masculinity is the state where the gender roles of emotions between male and female are distinct, so that males tend to be more assertive and tough and female tend to be more tender and modest. In a culture with higher masculinity, when it comes to management and confrontation, the style is aggressive and defensive, meaning that the stronger wins. Work is more likely to prevail over family in this type of culture so, members live to work (Hofstede et al., 2010).

In contrast, femininity is the state where the gender roles of emotions between male and female overlap, so that both males and females tend to be more modest and tender. Members of cultures with higher femininity focus on the quality of life (Hofstede et al., 2010), and in doing so they will tend to use ICTs (Merhi, 2018) to improve it (Bagchi et al., 2004). ICTs are more common in feminine cultures since it is a way of facilitating sharing of information and communication between individuals (Gong et al., 2007). One of the main goals of using e-government systems is to create a better communication (Bonsón et al., 2012), and therefore ICTs are more likely be used within a feminine culture (Bouaziz, 2008). Members are more inclined to seek a balance between family and work, and at work individuals tend to be more agreeable so that conflicts are solved through negotiation and settlement. Thus, this study predicts that members of feminine

cultures are more likely to prefer to use e-government systems since they focus on communication, quality of life, consensus, and avoiding conflicts.

H1f: Feminine culture positively influences the use of e-government systems within government organisations.

The second part of the model, on the right side of Figure 5, is associated with Panopticon Theory (Foucault, 1995). Foucault derived Panopticon Theory from an architectural design for a prison created by Jeremy Bentham. The main idea here is that there is a watchtower in the middle of a round prison building. A guard is at the top of the tower where they can observe all the prisoners, but the prisoners do not know whether they are being monitored or not since they cannot see the guard in the tower. As a result, prisoners act around-the-clock as if they are being watched.

When using e-government systems, all institutional activities and information are assumed to be seen by others. Thus, employees act carefully. That is, there can be no denying that what they do is not always being monitored. However, since it is on the systems in which they perceive that their work is transparent, employees in the organisation must act that they are being watched constantly, as those employees do not know whether they are being watched or not. Thus, employees are more inclined to comply with rules and regulations. If anything does go wrong, employees perceive that they can be held accountable, since their work is perceived to be visible to others. The surveillance mechanisms effectively control the employees' behaviour all the time.

H2: E-government Use has a positive impact on levels of Perceived Transparency within government organisations.

H3: Perceived Transparency has a positive impact on levels of Perceived Accountability within government organisations.

H4: Perceived Transparency has a positive impact on levels of Self-Reported Compliance within government organisations.

4.3. Relating the research to another theoretical approaches

The research team recognises that there are other cultural theories other than the adopted one, Hofstede cultural theory (Hofstede et al., 2010), such as Grid and Group Cultural Theory of Douglas (Douglas, 1996), GLOBE (House et al., 2004), and perhaps others. In fact, these cultural frameworks share some of the cultural dimensions that Hofstede suggested, meaning that they could be applied to this research. Since it was infeasible to use all of them in a limited time project, it was decided to use Hofstede's theory, as it has been extensively used in empirical research (Williamson, 2002), especially within e-government context as can be seen in Section 2.3.1. However, this study notes that this is a limitation in which more details can be found in Section 6.4.

As set out in previous section, this study makes use of two theories, one of which is Panopticon Theory, derived from the architectural design for a prison by Jeremy Bentham (Foucault, 1995). Interestingly, General Deterrence Theory (GDT) has its origins from the same philosopher, Jeremy Bentham (1748–1832), as well as other philosophers, Thomas Hobbes (1588–1678) and Cesare Beccaria (1738–1794). In the field of criminology, GDT refers to preventing crime among the general population. It means that punishing an offender sets an example for others, deterring them from committing crimes (Bosworth, 2005). Modern deterrence theory (Cornish & Clarke, 1986; Gibbs, 1985) refers to the rational choice that people make to act in a rational way that maximises their own utility (MacCoun, 1993).

While Panopticon Theory focuses on the risk of being detected, GDT focuses on the threat of punishment. Both theories concern behavioural changes in individuals. In Panopticon Theory, when individuals perceive they are being watched, they assume they can be held accountable if anything goes wrong, so they act properly. In other words, compliance is increased. With GDT, on the other hand, people behave properly because they are aware that they are likely to be punished if they commit a crime. Whereas this research focuses on Panopticon Theory, GDT could also be applied to this research. Employees know they can be punished “accountability” if they do something wrong; this discourages them from engaging in criminal acts, and this results in increased compliance.

4.4. Development of questionnaire

In order to substantiate the findings of an MIS study, one must validate the instruments (Straub, 1989). In present case, a clear and precise definition for all ten constructs was developed based on the literature (see Section 4.2.1). After discussing suitable definitions of the constructs, the items were then selected and adapted from peer-reviewed literature.

Table 2 below shows items adapted from the literature.

Table 2. Items with references to the literature

Construct	Item	Source
Power Distance	I easily conform to the wishes of someone in a higher position than mine.	(Sharma, 2010)
	It is difficult for me to refuse a request if someone senior asks me.	
	I tend to follow orders without asking any questions.	
	I find it hard to disagree with authoritative figures.	
	People in higher positions have more power those in lower positions.	
Individualism/Collectivism	I cannot feel happy if any of my member of my immediate family is unhappy.	(Marshall, 1997)
	I usually do what I feel is best for me, no matter what others say.	
	Ideally, I would like to work by myself or run my own company.	
	I deeply resent any invasion of my personal privacy.	
	My first duty is to ensure the well-being of immediate my family.	
	My happiness depends on my state of mind, regardless of how those around me feel.	
Indulgence/Restraint	This organisation places more importance on proper conduct than on happiness at work.	New Items self-development
	This organisation values restraint at work.	
	I believe that emotions should not be shown at work.	(Al Omoush et al., 2012)
	I wait for the right time to do something at work.	
	I maintain rigid codes of beliefs and behaviour.	
Society enables its members to enjoy their lives and have fun.		
Long-term/Short-term Orientation	Respect for tradition is important to me.	(Bearden et al., 2006)
	I plan for the long term.	
	Family heritage is important to me.	
	I work hard for success in the future.	
	I do not mind giving up today's fun for success in the future	
Persistence is important to me		
Uncertainty Avoidance	I find it difficult to function without clear directions and instructions.	(Sharma, 2010)
	I prefer specific instructions to broad guidelines.	
	I tend to get anxious easily when I don't know an outcome.	
	I feel stressed when I cannot predict consequences.	
	I feel safe when I am in my familiar surroundings.	
	I get confused easily when dealing with complex problems.	
Femininity/Masculinity	I usually do not let others know how I am feeling.	(Doss & Hopkins, 1998)
	I do not show emotions because it would mean that I am weak.	
	In difficult times, I try to be tough.	
	I should not cry even when something really bad happens.	

Construct	Item	Source
	When there is something I want, I will take risk to get it.	
	I should be independent and not get attached to others.	
E-government Use	I am currently a heavy user of the system.	(Hartwick & Barki, 1994)
	I am currently a light user of the system.*	
	I often use the system to do my job.	
	Using e-government applications is mandatory to do my job.	(Mpinganjira, 2015)
	My use of the system is mandatory.	(Venkatesh & Davis, 2000)
	Using the system is certainly compulsory in my job.	
	The use of e-government application at work cannot be circumvented	New Item self-developed
Perceived Transparency	I am aware that my activities at work are monitored.	New Item (Inspired by) (Grimmelikhuijsen, 2012)
	My organization knows what I am doing on the system.	(Rawlins, 2008)
	I am conscious that my organization knows what I am doing.	(Govern & Marsch, 2001)
	I know that what I do is visible to others within the organisation.	New Item (Inspired by) (Dapko, 2012)
	When I make decisions, my organization gives others within the organization the ability to know about it.	(Dapko, 2012)
	My work is like a glass building in which everything I do is visible for others within the organization to see.	
	My organization puts everything I do "out on the table" for others within the organization to see.	
Perceived Accountability	I am accountable for my actions at work.	(Vance et al., 2015)
	I often have to explain why I do certain things at work.	(Hochwarter et al., 2005)
	There is a likelihood that doing the wrong thing would lead to consequences.	
	Colleagues at my organization are accountable for their actions.	(Singhapakdi et al., 1996)
	Colleagues at my organization have to explain why they do certain things.	New Item (Inspired by) (Hochwarter et al., 2005; Vance et al., 2015)
Self-Reported Compliance	I comply with corporate policy.	(Tyler & Blader, 2005)
	I follow the procedures established by my organization.	
	I comply with work-related procedures.	
	I comply with organizational policy.	
	I seek information about appropriate organization policies and procedures before acting.	
	I perform my jobs according to defined procedures.	(Hu et al., 2012)

The survey form was divided into two main sections and three subsections in order to make it more convenient to browse and for the respondents complete – as recommended by Polgar and Thomas (2008) and Saunders et al. (2009a).

The first main section was the *Introduction* which contained the Information Statement (Appendix 7). More details can be found in Section 3.4.1.

The second main section was the *Survey* which contained three subsections: demographic information, cultural dimensions, and items of e-government use and related variables. The first subsection covered demographic information, containing five questions. The second subsection covered cultural dimensions items (Hofstede et al., 2010), containing six constructs: power distance, individualism vs collectivism, indulgence vs restraint, long term vs short term orientation, uncertainty avoidance, and femininity vs masculinity. In total, this part contained 35 items. The last subsection was items of e-government use and related variables, containing four constructs: e-government use, perceived accountability, perceived transparency, and self-reported compliance. This part contained 25 items. All three subsections of the survey added up to 65 items. When participants complete the survey, a closing statement appears thanking them for participating in the study (Appendix 8).

A five-point Likert scale was used for 60 items, where participants had to choose from strongly agree to strongly disagree. The five-point Likert scale was chosen following the recommendations of Saunders et al. (2009a), as it measures the level of agreement (Vagias, 2006). The middle choice is a suitable option for participants facing a statement they are not sure about (Saunders et al., 2009a). The Five-point Likert scale is commonly used in social science studies (Croasmun & Ostrom, 2011), and is commonly used in IS research, especially in Ph.D. theses such as those of (Alghamdi, 2017; Porumbescu, 2013), and in studies published in well-respected journals such as by (Hu et al., 2012; Mpinganjira, 2015).

4.4.1. Translation into Arabic

Since the sample of the study is Saudi government employees whose mother tongue is Arabic, translation of the survey into Arabic was necessary. The back-translation approach was also used to ensure the accuracy of the translation and eliminate any translation issues (Brislin, 1970). The procedure of translation and back-translation was as follows.

The researcher carefully translated the whole survey (including recruitment material, information statement, and all 65 items) into Arabic using plain language and avoiding difficult words. Then the translated documents in Arabic were sent to a bilingual certified translator in Australia (NAATI accredited translator) to translate back into English (Appendix 8). The back-translated and the original documents were then compared by the researcher to identify if there were any parts of the document in which the two English versions were not comparable; such an occurrence would suggest a translation issue had occurred. However, no translation issues were detected.

4.4.2. Evaluation of instruments

Once all items were developed and translated into Arabic by the researcher, both versions (English and Arabic) of the questionnaire were sent to two PhD candidates and one associate professor in the field of IS (all of whom were Saudi government employees) to check if there were any issues with the survey in terms of clarity of items. Several suggestions were received, and that information statement and items were revised accordingly.

All suggestions received were about the Arabic version, and they will be briefly described. Regarding the information statement, four minor points were raised by one of the PhD candidates. First, the title of the information statement was slightly changed. Second, a word choice suggestion was raised in the first and second paragraph of the information statement. Lastly, "Ph.D. candidate" was added to the researcher's contact details (Appendix 8). With respect to the items, the associate professor and the other Ph.D. candidate suggested the following points. First, the third question of the demographic information, about educational level, contained five levels in which the last choice was "masters and doctorate"; this was split into two separate points, "masters" and "doctorate". Second, a suggestion about word choice was addressed in items SRC1, SRC3, SRC4, UA2, and FM3.

4.5. Pilot study

Two versions of the online survey were distributed in the host organisation, Saudi Arabia. In the first version, the questions were presented in random order, and in the second version, the questions were grouped according to the constructs of the model. This was done because there was a concern that the response rate might not be high enough, so the research team wanted to see which version produced

the better response. It turned out that both versions gave similar numbers of responses, with 63 responses recorded in the grouped version and 64 responses recorded in the randomised version.

Ethics approval was granted from both Curtin University and the host organisation as mentioned in Section 3.4. The grouped version had all items of a construct together (Appendix 5), whereas the randomised version had items randomly ordered within each part of the survey (Appendix 6). The survey was mainly administered online; a link was sent to the host organisation and when a participant clicked on the link, one of the two versions of the survey would open randomly. GitHub system software was used to make it more convenient for the researcher when collecting pilot study data.

The pilot study data was collected from 05/11/2019 to 21/11/2019 giving 63 responses in the grouped version and 64 responses in the randomised one. A link to the survey was sent to 10 training groups at the host organisation where there were about 23 trainees in each group. That is, 230 trainees (government employees) received the link. There were 127 responses, response rate of 55.2%. On that basis, it was decided to carry on data collection using the randomised version in order to avoid question order bias (Perreault, 1975). That is, the randomised order of questions helps to avoid respondents being biased to a particular construct. Participants answered questions based on their actual experience.

4.6. Sample selection

This project was situated in Saudi Arabia where there are 631,024 Saudi government employees (Al Shaikh, 2019). Based on the statistical equation in (Krejcie & Morgan, 1970; Saunders et al., 2009c), the sample size of the study population should involve 384 employees to achieve 95% confidence level. Two separate samples were drawn from employees working in government agencies: ministries, authorities, municipalities, universities, centres, and funds around the kingdom. Government employees were recruited via the host organisation. The second group of employees were recruited via social media from the agencies above. More details will be provided in the next section.

The host organisation was chosen as a representative sample of Saudi government employees since it is the only place that annually gathers together a large number

of Saudi government employees, drawn from hundreds of other government agencies and departments, in its own premises. In 2019, for instance, the total number of male and female government employees that the host organisation trained was 57,778 employees (IPA, 2019). The main purpose of this organisation is to not only educate Saudi government employees but also to increase their efficiency. It has four main tasks – training, research and studies, consultations, and documentation and information – and the first task involves the provision of training programs in a variety of administrative fields such as public administration, business administration, accounting, economy, statistics, computer science, and human resources to Saudi government employees. Employees of all types of governmental jobs and in all grades get training at the host organisation. In fact, in order for a Saudi government employee to be promoted, s/he has to get training at the host organisation (IPA, 2020). The host organisation is therefore fairly representative of all Saudi government employees.

4.7. Data collection

Comparing to paper-based questionnaires, online questionnaires have significant advantages, particularly the ability to reach more participants (Evans & Mathur, 2005). A closed-ended online survey was administered by the researcher using the Qualtrics^{XM} version. It was the primary tool for collecting data in this phase of the study.

Two separate links to the online randomised survey were distributed. One was sent to government employees attending training programs at the host organisation. The other link (social media) was sent to government employees in a variety of government agencies – ministries, universities, and establishments. Both links were sent during the period November 2019 – February 2020. The host organisation version was sent to 49 training groups, each of which had approximately 23 government employees. This means the survey was sent to 1127 participants, and the number of responses received was 626, 416 males and 210 females. This means that the response rate of the host organisation data was 55.5%.

For social media version, a link to the survey was sent to several government agencies whose employees were asked by their colleagues to voluntarily complete the survey. The approximate number of participants who received the link to the survey in the government agencies was 814 participants, and the number of

responses was 356, 139 males, 171 females, and 46 who did not specify. This means that the response rate of the social media data was 43.7%.

In order to provide generalisability, participants were drawn from a large number of government organisations and therefore it was not feasible for all respondents to use the same system(s). Additionally, respondents were asked to provide their responses in relation to the e-government system they use the most in their work.

4.8. Data analysis

Before performing any data analysis, it is important to check that the respondents were attentive. If participants are asked to voluntarily fill in a survey, it is normal for a number to participate just because they are being polite. Then, if they are not really interested, they might be careless when completing the survey. Studies such as (Berry et al., 1992; Meade & Craig, 2012) show that the percentage of careless responses might reach up to 60%. Those careless responses might either lead to unrealistic findings or may skew the data analysis.

Since the data was collected at the host organisation during a training program that the host organisation provides to government employees, there was a chance that some participants filled in the survey just to fit in with others who were completing the survey at that time. Even though the Information Sheet said, supporting what they were told verbally, that participation in the survey was completely voluntarily, some participants may have felt embarrassed not to participate since many of the others in the same room were completing the survey. In this way, some may have completed the survey carelessly.

The same situation might be also hold for data collected through social media. As mentioned in Section 4.7, a link was sent to employees within government agencies by their colleagues, and while they were asked to voluntarily complete the survey, some may have felt embarrassed not to participate, and they may have completed it just to please their colleagues. Again, this means that there might be a chance that some participants may have filled in the survey carelessly. Therefore, the next few paragraphs address how the data was cleaned up to make it suitable for data analysis.

In terms of missing data, the total number of responses recorded was 626 responses in the host organisation sample. The first step was to exclude all

inattentive responses, taken to be those where less than 180 seconds was spent completing the survey (for 60 questions plus five demographic ones). This is less than three seconds per question, deemed to be impossible for an attentive respondent. This cleaning eliminated 20% of responses (126 responses), leaving 500 responses. With regard to the social media data sample, the total number of responses recorded was 356. Likewise, this first step eliminated 27% of responses (98 responses), leaving 258 responses.

The second step was to take out all responses where more than three items were left blank. This resulted in eliminating another 11% of responses (57 responses that passed the first step but failed this one), leaving 443 responses in the host organisation sample. In terms of the social media data sample, this second step resulted in eliminating another 18% of responses – 49 responses that passed the first step but failed this one, leaving 209 responses.

There was also an attention check, designed to eliminate any respondent who failed at least one of the following three attention tests:

1. If a participant provided the same answer to two items that were contradictory due to having opposite scales, they were considered to have not been attentive. The two items in question were:

- I am currently a heavy user of the system.
- I am currently a light user of the system. (R)

It does not make sense to agree, or disagree, with both these items. Therefore, any respondent whose answer was identical to both was considered to have been inattentive. In the host organisation sample, there were another 144 responses that were eliminated because although they passed the first and second steps they failed this test. With the social media sample, there were another 69 responses that were eliminated because although they passed the first and second steps they failed this test.

2. If a participant provided opposing answers to two items that have the same scale, they were considered to have not been attentive. The two items in question were:

- My use of the system is mandatory.
- Using the system is certainly compulsory in my job.

It is not sensible to agree with one item and disagree with the other. Thus, any respondent whose answer to one item was agree and disagree to the other (or vice versa) was considered to have been inattentive. In the host organisation sample, there were another six responses that were eliminated – they passed the first and second steps and the first test, but failed this second test. Regarding the social media sample, there were another three responses that were eliminated – they passed the first and second steps and the first test, but failed this second test.

3. Finally, if they provided exactly the same response to 80% or more of the survey items, they were considered to have been inattentive. In the host organisation sample, there were another five responses that were eliminated. For the social media sample, there were ten responses that failed this third test, but they had been already eliminated in the previous tests.

In the host organisation sample, this process left 288 respondents out of 443 who were deemed to have been sufficiently attentive to the survey questions; 190 of them were male and 98 were female. This means that the 35% of the respondents were eliminated during the cleaning process. In terms of the social media sample, this process left 137 respondents out of 209 who were deemed to have been sufficiently attentive to the survey questions; 61 were male, 75 were female, and one participant did not specify gender. This means that 34% of the responses were discarded during the cleaning process.

The total number of participants from both host organisation and social media data that was sufficient to be used in the data analysis is $n = 425$; 251 were male, 173 were female, and one who not specify gender.

There are multiple ways to conduct attention checks (Abbey & Meloy, 2017), and that these three separate techniques used to be on the safe side. These checks do not pose a threat to validity (Kung et al., 2018).

Table 3. Host organisation data inattentive respondents

(Host org.)	Inattentive	
Gender:		%
Male	192	57
Female	93	27
Did not specify gender	53	16
Total	338	100
Age group:		
(19 or under)	0	0
(20 - 29)	21	6
(30 - 39)	126	37
(40 – 49)	102	30
(50 - 59)	38	11
(Over 60)	0	0
Didn't specify	51	16
Total	338	100
Education:		
High school or less	47	14
Diploma	64	19
Bachelor's Degree	145	42
Higher Diploma	9	3
Master	19	6
Doctorate	3	1
Didn't specify	51	15
Total	338	100

Table 4. Social media data inattentive respondents

(Social Media)	Inattentive	
Gender:		%
Male	78	36
Female	96	43
Did not specify gender	45	21
Total	219	100
Age group:		
(19 or under)	0	0
(20 - 29)	24	11
(30 - 39)	84	38
(40 - 49)	47	21
(50 - 59)	17	9
(Over 60)	3	1
Didn't specify	44	20
Total	219	100
Education:		
High school or less	15	7
Diploma	48	22
Bachelor's Degree	67	31
Higher Diploma	10	5
Master	26	12
Doctorate	9	3
Didn't specify	44	20
Total	219	100

IBM SPSS statistics 26 was used to perform the data analysis in this section and the following one (Mann-Whitney). Table 3 and Table 4 show the demographics of the respondents that were knocked out during the cleaning process. Since it was decided to use the randomised version of the survey, as discussed in Section 4.5, items were then carefully reordered in different Excel spread sheets to carry the analysis into SPSS.

4.8.1. Mann-Whitney test

A Mann-Whitney test was performed to compare host organisation and social media data since the data is not normally distributed. The results showed that there is no significance between these two samples in all variables (Appendix 11). Therefore, both data sets (host organisation and social media) were combined. This resulted in having a total of $n = 425$ response. Table 5 shows the descriptive statistics for the demographic information of this combined data sets.

Table 5. Descriptive statistics for the demographic information

Demographic variables	Frequency	Percent
Gender		
Male	251	59.1
Female	173	40.7
Did not specify	1	.2
Total	425	100
Age groups		
20 - 29	32	7.5
30 - 39	187	44.0
40 - 49	153	36.0
50 - 59	50	11.8
Over 60	3	.7
Total	425	100
Education		
High school or less	28	6.6
Diploma	82	19.3
Bachelor's Degree	228	53.6
Higher Diploma	20	4.7
Master	56	13.2
Doctorate	11	2.6
Total	425	100

Table 5 shows the total number of respondents is $n = 425$, of which 251 were male, 173 were female, and one respondent did not specify gender. The fact that the majority of respondents were male was as expected due to the actual number of Saudi male government employees compared to Saudi female government

employees. To illustrate, in 2019, the number of male government employees who were trainees in all-male branches of the host organisation was 50,022, whereas the number of female government employees who were trainees in all-female branches of the host organisation was 7,786 (IPA, 2019).

Based on Table 5, most respondents were between 30 and 49 of age, which is 80% of respondents. This percentage is correlated with the educational level of respondents where most of them (72.9 %) hold diploma and bachelor's degree.

4.8.2. Structure Equation Modelling SEM – PLS

In business and management related research such as Management Information Systems (MIS), it is found that a modern path analysis technique called Partial Least Squares (PLS) is popular and widely used (Chin, 1998; Guo et al., 2011; Henseler et al., 2009; Kock & Lynn, 2012; Wetzels et al., 2009). PLS path modelling is a powerful method that can run a great number of independent variables (IVs) and dependent variables (DVs) at the same time with minimum assumptions about the characteristics of the measurement or the distribution. Additionally, PLS performs the analysis quickly (Temme et al., 2006) and immediately tests the model as a whole (Halawi & McCarthy, 2008). Lastly, PLS – SEM performs quite well with nonparametric data (Hair et al., 2011). Based on the reasons listed above, PLS (SmartPLS 3) was the natural choice to carry on the rest of the analysis of this project.

4.8.3. Confirmatory Factor Analysis (CFA)

The proposed model consists of 10 constructs: E-government Use (EgU), Perceived Transparency (PT), Perceived Accountability (PA), Self-Reported Compliance (SRC), Power Distance (PD), Individualism/Collectivism (IC), and Indulgence/Restraint (IR), Long term/Short term Orientation (LSO), Uncertainty Avoidance (UA), and Femininity/Masculinity (FM). As can be seen in Table 6, the Kaiser-Meyer-Olkin (KMO) is high enough, meaning that these 10 constructs are adequate to be used in EFA.

Table 6. Kaiser-Meyer-Olkin Measure

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.842
Bartlett's Test of Sphericity	Approx. Chi-Square	2733.162
	Df	351
	Sig.	.000

After data screening, an EFA was performed in SmartPLS 3. To achieve a clean matrix with all items loading $>.5$, it is recommended to perform EFAs several times by iterating the factors; therefore, factor iteration was performed until a clean matrix was reached (Gaskin, 2019). All 10 factors were extracted in the EFA but some items were dropped due to a poor factor loading of less than $.5$. The remaining items are presented in the matrix of Table 7. In order to ensure that the EFA could not be improved upon, variants of the pattern matrix were also tested. Further analysis of the results is discussed in Sections 4.9 and 4.10.

Table 7. Loading and cross-loading of items

	EgU	FM	IC	IR	LSO	PA	PD	PT	SRC	UA
EgU5	0.855	0.016	0.248	0.276	0.342	0.249	0.131	0.458	0.536	0.112
EgU6	0.845	0.015	0.276	0.252	0.329	0.311	0.154	0.497	0.545	0.121
EgU7	0.615	-0.011	0.241	0.149	0.284	0.230	0.156	0.312	0.327	0.121
FM1	0.011	0.960	0.170	0.095	0.175	0.098	0.150	0.049	0.107	0.075
FM2	0.004	0.541	0.188	0.164	0.008	0.066	0.209	0.024	-0.023	0.090
IC1	0.231	0.067	0.697	0.058	0.151	0.124	0.101	0.062	0.165	0.174
IC4	0.257	0.221	0.744	0.043	0.225	0.223	0.006	0.111	0.196	0.283
IC5	0.200	0.138	0.684	0.106	0.195	0.215	0.215	0.083	0.093	0.220
IR2	0.184	-0.037	0.011	0.625	0.200	0.112	0.301	0.295	0.242	0.024
IR5	0.238	0.173	0.112	0.737	0.250	0.154	0.135	0.148	0.239	0.109
IR6	0.172	0.110	0.054	0.671	0.215	0.076	0.138	0.238	0.148	-0.015
LSO2	0.223	0.184	0.142	0.275	0.631	0.115	0.123	0.217	0.258	0.142
LSO4	0.314	0.161	0.235	0.263	0.778	0.218	0.148	0.383	0.455	0.179
LSO5	0.291	0.032	0.219	0.161	0.672	0.195	0.112	0.264	0.286	0.235
LSO6	0.338	0.091	0.176	0.261	0.794	0.204	0.151	0.234	0.417	0.145
PA2	0.205	0.047	0.145	0.117	0.126	0.760	0.144	0.192	0.174	0.138
PA3	0.290	0.051	0.188	0.093	0.166	0.543	0.039	0.128	0.191	0.091
PA5	0.209	0.119	0.210	0.137	0.244	0.678	0.155	0.150	0.230	0.236
PD1	0.172	0.149	0.070	0.252	0.162	0.116	0.832	0.154	0.163	0.056
PD2	0.134	0.147	0.156	0.155	0.142	0.162	0.746	0.180	0.089	0.162
PD3	0.061	0.129	0.085	0.187	0.069	0.114	0.528	0.156	0.049	0.207
PT1	0.376	0.034	0.115	0.236	0.318	0.225	0.180	0.781	0.361	0.078
PT2	0.533	0.059	0.126	0.294	0.320	0.157	0.158	0.840	0.473	0.015
PT3	0.345	0.018	-0.024	0.326	0.285	0.135	0.209	0.735	0.379	0.021
PT4	0.422	0.036	0.141	0.143	0.260	0.225	0.138	0.734	0.372	0.105
SRC1	0.552	0.078	0.223	0.276	0.467	0.277	0.134	0.418	0.869	0.168
SRC3	0.558	0.076	0.210	0.235	0.414	0.253	0.111	0.434	0.834	0.115
SRC4	0.460	0.068	0.130	0.284	0.397	0.217	0.151	0.462	0.847	0.104
UA1	0.143	0.038	0.167	0.088	0.215	0.157	0.140	0.079	0.165	0.811
UA3	0.084	0.099	0.291	0.004	0.163	0.162	0.112	0.037	0.088	0.678
UA4	0.086	0.091	0.308	0.035	0.140	0.211	0.091	0.018	0.048	0.699

Item reliability in SmartPLS 3 was evaluated by examining the individual loading of each item of a construct. If the sample size was greater than or equal to 350, the sufficient factor loading is .3 (Hair et al., 2014) (see Table 8). Since the sample size of this project was $n = 425$, and since all loadings of items were above .5, all item loadings were considered sufficient.

Table 8. Sufficient factor loadings based on sample size
Adapted from (Hair et al., 2014, p. 115)

Sample Size	Sufficient Factor Loading
50	0.75
60	0.70
70	0.65
85	0.60
100	0.55
120	0.50
150	0.45
200	0.40
250	0.35
350	0.30

Construct validity can be confirmed by establishing convergent and discriminant validity (Campbell & Fiske, 1959). Convergent validity refers to the degree that multiple endeavours to assess the same thing are related, whereas discriminant validity refers to the degree that measures of different things are unrelated (Bagozzi et al., 1991).

Convergent validity, which basically asks whether items are highly correlated, was assessed by Average Variance Extracted (AVE) and Reliability. The rule of thumb is that AVE should be higher than .5. However, according to Fornell and Larcker (1981), $AVE > .4$ is accepted only when the composite reliability is $> .6$. As can be seen in Table 9, two constructs (IR and PA) were below .5, but their composite reliability was higher than .6, which is an indication of convergent validity. This indicates convergent validity for the constructs in the second model as well. Additionally, as composite reliability is not affected by number of items in the scale, it is deemed to be superior to Cronbach's alpha. In establishing convergent validity, the threshold as proposed by Nunnally and Bernstein (1994) is that it should be .7. This means that the convergent validity of all 10 constructs is adequate.

Table 9. Composite reliability and AVE

Construct	Composite Reliability	Average Variance Extracted (AVE)
EgU	0.820	0.608
FM	0.741	0.607
IC	0.752	0.503
IR	0.719	0.461
LOS	0.812	0.521
PA	0.702	0.444
PD	0.751	0.510
PT	0.856	0.598
SRC	0.886	0.722
UA	0.775	0.536

The second method to validate the construct is by examining discriminant validity. Discriminant validity, which effectively indicates whether each construct can be distinguished from other constructs, was assessed by evaluating the factor cross-loading, correlation matrix, and the new method PLS-SEM, Heterotrait-Monotrait ratio (HTMT). Table 7 presents the factor cross-loading of each item for both models. It can be seen that no cross-loading issues were detected. That is, items completely loaded onto only one factor. The Fornell-Larcker criterion is that the square root of AVE must be greater than any inter-factor correlations. Thus, it is clear that PA as the lowest construct, .666, was greater than any of the correlations. All other values also met this requirement, which means that discriminant validity has been established (see Table 10), which is discussed in Section 4.10.

Table 10. Correlation of constructs square root of AVE

	EgU	FM	IC	IR	LSO	PA	PD	PT	SRC	UA
EgU	0.780									
FM	0.010	0.779								
IC	0.326	0.204	0.709							
IR	0.296	0.131	0.093	0.679						
LSO	0.409	0.155	0.269	0.329	0.722					
PA	0.340	0.106	0.263	0.173	0.259	0.666				
PD	0.186	0.193	0.139	0.274	0.185	0.177	0.714			
PT	0.550	0.049	0.122	0.321	0.383	0.238	0.218	0.774		
SRC	0.614	0.087	0.219	0.312	0.500	0.292	0.156	0.516	0.850	
UA	0.150	0.092	0.321	0.068	0.242	0.232	0.160	0.069	0.151	0.732

The last measurement for construct validity is to distinguish constructs from each other, and this can be measured using HTMT criteria. The threshold here is one. If any value is less than one, it indicates that these are different factors. It is worth mentioning that the lower the factors are, the more distinct they are. It can be concluded that discriminant validity has been established at construct level since each HTMT values was less than one (see Table 11), which is discussed in Section 4.10.

Table 11. Heterotrait-Monotrait ratio (HTMT)

	EgU	FM	IC	IR	LSO	PA	PD	PT	SRC	UA
EgU										
FM	0.037									
IC	0.560	0.466								
IR	0.538	0.423	0.236							
LSO	0.599	0.251	0.449	0.607						
PA	0.704	0.277	0.620	0.420	0.516					
PD	0.287	0.460	0.312	0.580	0.276	0.418				
PT	0.746	0.093	0.208	0.583	0.520	0.438	0.350			
SRC	0.829	0.135	0.335	0.523	0.658	0.544	0.207	0.645		
UA	0.230	0.219	0.621	0.224	0.365	0.505	0.336	0.123	0.197	

Considering all of the above, since both requirements for convergent validity and discriminant validity have been met, the constructs of the project can be deemed valid.

4.8.4. Common Method Bias (CMB)

Common Method Variance (CMV), also known as Common Method Bias (CMB) test, is another indicator for construct validity (Doty & Glick, 1998), especially when the data for all study constructs is collected using a single questionnaire. Since the data of all variables both the IV and DV, was collected via one single survey, the researcher used two tests to ensure that there was no CMB in the data. First, a CMV test in IBM SPSS statistics 26 was conducted through Harman's single factor test, which is one of the most commonly used tests to detect CMB (Craighead et al., 2011; Podsakoff & Organ, 1986). The threshold is that if the total variance explained by a single factor is greater than 50%, then there is a common method bias issue. Table 12 shows that the total of variance explained by a single factor was 15.319%, which is way below the threshold, so there was no CMB.

Table 12. Harman's single factor to test for CMB

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.907	16.512	16.512	9.191	15.319	15.319
2	3.426	5.709	22.221			
3	2.572	4.286	26.507			
4	2.061	3.434	29.942			
5	1.973	3.289	33.230			
6	1.783	2.972	36.202			
7	1.594	2.656	38.859			
8	1.530	2.550	41.408			
9	1.414	2.356	43.765			
10	1.375	2.291	46.056			
11	1.351	2.252	48.307			
12	1.245	2.075	50.382			
13	1.203	2.005	52.388			
14	1.163	1.939	54.327			
15	1.129	1.881	56.208			
16	1.059	1.764	57.972			
17	1.055	1.759	59.731			
18	1.028	1.714	61.445			
19	.998	1.663	63.108			
20	.977	1.629	64.736			
21	.928	1.546	66.283			
22	.909	1.516	67.798			
23	.899	1.499	69.297			
24	.883	1.472	70.769			
25	.836	1.393	72.162			
26	.828	1.381	73.543			
27	.776	1.293	74.836			
28	.751	1.252	76.088			
29	.728	1.213	77.301			
30	.720	1.200	78.500			
31	.689	1.149	79.649			
32	.662	1.104	80.753			
33	.658	1.097	81.851			
34	.632	1.053	82.904			
35	.593	.989	83.893			
36	.586	.977	84.870			
37	.574	.956	85.826			
38	.531	.885	86.711			

39	.517	.861	87.573			
40	.508	.846	88.419			
41	.506	.844	89.263			
42	.497	.828	90.091			
43	.482	.803	90.894			
44	.453	.755	91.649			
45	.420	.700	92.349			
46	.407	.678	93.027			
47	.394	.656	93.683			
48	.377	.628	94.311			
49	.372	.620	94.931			
50	.354	.590	95.521			
51	.342	.570	96.092			
52	.329	.548	96.639			
53	.319	.531	97.171			
54	.302	.503	97.674			
55	.278	.464	98.138			
56	.260	.433	98.571			
57	.239	.399	98.970			
58	.229	.382	99.352			
59	.223	.371	99.724			
60	.166	.276	100.000			
Extraction Method: Principal Axis Factoring.						

The other method to test for CMB using SmartPLS 3 is by examining Variance Inflation Factors (VIFs); if the VIF of all study factors is less than or equal to 3.3, then there is no CMB (Kock, 2015). As there are 10 latent factors in this study, the researcher had to connect all factors to a single factor at a time to test for CMB. Table 13 shows that all study constructs were way less than 3.3. Therefore, this is an indication that there is no method bias, which is discussed in Section 4.10

Table 13. Collinearity statistics VIF

	EgU	FM	IC	IR	LSO	PA	PD	PT	SRC	UA
EgU		1.581	1.970	1.960	2.019	1.993	1.843	1.828	1.739	1.887
FM	1.087		1.107	1.099	1.084	1.122	1.060	1.116	1.067	1.135
IC	1.241	1.270		1.234	1.303	1.332	1.205	1.295	1.265	1.253
IR	1.250	1.144	1.186		1.219	1.251	1.226	1.239	1.267	1.099
LSO	1.524	1.411	1.496	1.450		1.521	1.499	1.508	1.436	1.443
PA	1.197	1.210	1.230	1.221	1.236		1.197	1.221	1.228	1.220
PD	1.158	1.105	1.137	1.156	1.157	1.176		1.186	1.150	1.108
PT	1.472	1.520	1.528	1.598	1.601	1.597	1.616		1.581	1.411
SRC	1.662	1.803	1.908	1.935	1.799	1.938	1.880	1.875		1.828
UA	1.179	1.213	1.120	1.104	1.176	1.192	1.153	1.169	1.163	

4.9. Structural model

After establishing the validity of the constructs of the proposed model, as shown in Section 4.8, the structural model was assessed using Goodness of Fit (GoF). Standardized Root Mean Square Residual (SRMR) is a measure of goodness of fit in PLS-SEM (Henseler et al., 2014); if SRMR is less than .1, then the data fits the model (Hu & Bentler, 1998). The SRMR obtained for the model below is .071 (see Figure 6), indicating that the model has a sufficient GoF.

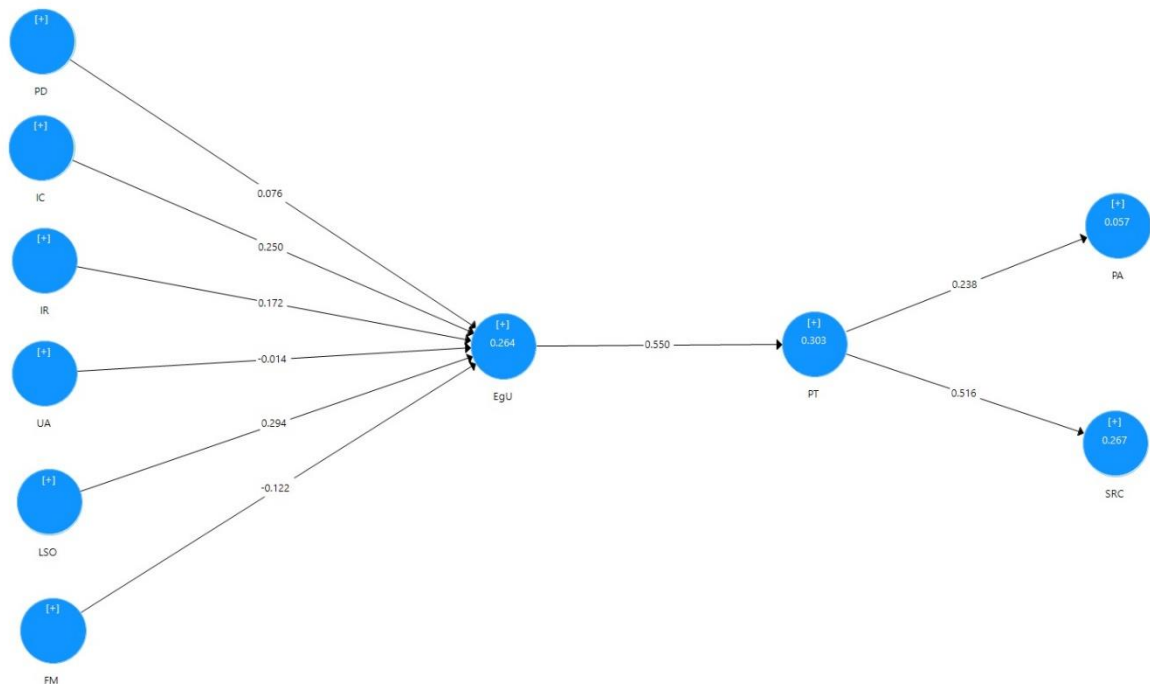


Figure 6. Structural model with hypotheses test results

4.10. Results

A structural model highlights the nature and significance of relationships between variables instead of concentrating on the relationships between latent and observed variables (Hair et al., 2014). Thus, the switch to a structural model needs to identify not only the relationships between the variables but also the nature of each of the relationships, as presented in Section 4.2.2. The researcher used SmartPLS 3 to establish the structural model, and all nine hypotheses from Section 4.2.3 were tested. Table 14 shows the results of the hypotheses testing.

Table 14. Results of hypotheses testing

Hypothesis	Link	Path coefficient (β)	t-value	Result
H1a	PD → EgU	0.076	1.770	Not supported
H1b	IC → EgU	0.250	4.670***	Supported
H1c	IR → EgU	0.172	3.472***	Supported
H1d	UA → EgU	-0.014	0.297	Not supported
H1e	LSO → EgU	0.294	4.127***	Supported
H1f	FM → EgU	-0.122	1.772	Not supported
H2	EgU → PT	0.516	11.315***	Supported
H3	PT → PA	0.238	4.012***	Supported
H4	PT → SRC	0.550	9.866***	Supported

Significant * $p < 0.05$; ** $p < 0.005$; *** $p < 0.0005$

Six out of the nine hypotheses proposed, H1b, H1c, H1e, H2, H3, and H4, were supported at a significance level of $p < 0.0005$. The number of bootstrapping samples used to test the path significance in PLS was 1000. These findings will be discussed in the next section.

In order to ensure that this model could not be improved upon, variants of the model were also tested. One test was done to check whether there was a direct relationship between culture and compliance, since this is discussed in the literature (Brønstad & Berg, 2011; Lu, 1997); however, the study did not find support for it, so it was not added. Another attempt found H1a was significant at a level of $p < 0.05$ but with two items (PD1 and PD2). as a rule of thumb the minimum number of items for each construct is three (Hinkin et al., 1997), so it was decided to continue with the model in which all constructs have at least three items.

In order to explore the effect of each of the IVs, f^2 and R^2 were examined. The minimum acceptable f^2 is .02 (Chin, 1998). All constructs reached the minimum value except PD, UA, and FM (see Table 14). As can be seen in Table 15, the largest effect is e-government use on perceived transparency (with $f^2 = .435$), and that the second largest effect is perceived transparency on self-reported compliance (with $f^2 = .364$). The results will be further discussed in the next section.

Table 15. Evaluation of f^2

Relationship	f^2
PD → EgU	.007
IC → EgU	.071
IR → EgU	.034
UA → EgU	.000
LSO → EgU	.094
FM → EgU	.019
EgU → PT	.435
PT → PA	.060
PT → SRC	.364

Table 16. Evaluation of R^2

Construct	R^2
EgU	.264
PT	.303
PA	.057
SRC	.267

Table 17. Factor score mean & SD

Construct	Factor Score Mean	Factor Score Standard Deviation
PD	4.966	1.667
IC	3.289	1.319
IR	4.810	1.545
LSO	4.360	1.566
UA	4.965	1.940
FM	4.806	1.529
EgU	5.542	2.147
PT	5.768	2.548
PA	4.276	1.468
SRC	3.532	1.385

4.11. Discussion

The research model can be considered as a story in two parts: first, the influence of organisational culture on e-government use, and second the impact of e-government use on perceived transparency, and subsequently on perceived accountability and self-reported compliance. This section discusses the results above in relation to each of these two parts, beginning with a discussion of the hypotheses related to the influence of organisational culture on e-government use.

Cultural related hypotheses

H1a:

As set out in Section 4.2.3, the study predicted that larger power distance would positively influence the use of e-government systems within government organisations. Members of organisations with larger power distance are more likely believe in the hierarchical organisational structure in which employees at lower level of the hierarchical structure expect to be directed. Further, as the power of those who are at the top of the hierarchical structure have more power over them (Hofstede et al., 2010), managers will use e-government systems since it is difficult for employees to withstand calls for such the use of systems – as members expect to be told – meaning that large power distance cultures lead to increased use of e-government systems. However, the results show no support for this hypothesis. Additionally, the effect size of PD, $f^2 = .007$ (see Table 15). This means even if the hypothesis was statistically significant, (which is not this case), the relationship would be very weak.

Further, it cannot be said that this outcome is due to insufficient variance in the data, as other cultural constructs that were found significant had low standard deviation as well (see Table 17). This leads to the suggestion that further investigation is needed, and the result might be different if more data were collected, since the variant of the structural model did find support for this hypothesis.

Several other studies have explored the role of power distance on e-government development. For instance, a study conducted to examine the impact of national culture on the development of e-government in 84 countries found that small power distance positively impacts e-government development (Zhao, 2011). In a similar vein, another study found that large power distance results in lower level of e-

government readiness (Kovačić, 2005). A key difference between these studies and this one is in the former they used of secondary data – namely the United Nations' E-government Development Index (EGDI), Hofstede's cultural dimension Index, and other secondary sources – whereas this study collected primary data from individual employees. That is, the findings of the former were based on culture at a country level, whereas this study was based on culture at the level of individuals within the organisation, and this might explain the differences in findings.

The use of EGDI data by other studies gives them a different focus. EGDI measures three dimensions – namely scope and quality of online services, telecommunication infrastructure, and human capacity (United Nations, 2010) – whereas only one dimension – human capacity – might be related to this study, and it has two indicators: adult literacy rate in the primary and secondary schools and the university enrolment rate. Even though that this dimension might be related, it can be seen that these are citizen-centric (demand), not supply-centric like this study, which is another key difference between (Zhao, 2011) and this study. Another point that can be derived from EGDI is that the level of development might be correlated with the GDP per capita, as there is an evidence that countries with high levels of income rank high in e-government development (United Nations, 2010). Besides the other possible reasons mentioned before that could have led to such findings, it can be seen that, in total, these differences can explain why the current study and (Zhao, 2011) arrived at two different conclusions.

It might be true that adoption of IT “e-government” is greater in small power distance cultures (Khalil & Seleim, 2010), but this might only be true from the demand side. For example, citizens might adopt e-government to hold public figures accountable (Wong & Welch, 2004), so that e-government would be important as information dissemination (Mitchinson & Ratner, 2004). It might also be true when e-government becomes a facilitator in terms of communication between citizens and government, giving citizens more opportunity to engage in decision making (United Nations, 2010). As mentioned before, this study originally predicted that a large power distance culture would positively influence the use of e-government. The difference here is that, unlike other studies referred to above, this study is predicting the effect of large power distance on e-government use from the supply side. When it comes to organisational culture, members in large power distance cultures tend to use e-

government as it is a decision made from a higher level of the hierarchy and so they will do what they are told.

Finally, the study hypothesised that subordinates would follow instructions given by their superiors since members of large distance expect to be told. Since the variant of the structural model found support for this hypothesis, more investigation is needed of the type of organisational culture. Interviews in the subsequent qualitative phase could investigate aspects such as whether centralisation is something common in the participant's organisations, whether hierarchy is an important thing in their work, and whether this type of culture has an influence on the use of e-government systems, and so forth.

H1b:

As demonstrated in Section 4.2.3, the study predicted that individualist culture would positively influence the use of e-government systems within government organisations. Individualist cultures tend to prioritise work over their relationships, and it can be said that members of such cultures are more work-oriented. Further, the performance of the members is highly regarded, so they pay more attention to an individual's productivity (Hofstede et al., 2010). This means that any type of technology that helps get work done is more likely to be adopted, and since an organisation's interest is more likely to prevail, members are therefore more likely to prefer to use e-government – that is, individualist cultures lead to increased use of e-government systems. The results show support for this hypothesis at a significance level of $p < 0.0005$ (see Table 14) in which the effect size is $f^2 = .071$ (see Table 15).

Most of the studies that have examined the effect of Hofstede's cultural dimensions have arrived at the same conclusion: that individualism influences adoption of IT products (Bagchi et al., 2004), the adoption of e-government (Bouaziz, 2008), e-government development (Zhao, 2013), or e-government usage (Merhi, 2018). It should be noted that these studies considered culture at a national level, whereas this study concluded that individualist culture has a positive influence on e-government use at the organisational level. However, since the studies mentioned above were concerned with the citizen's perspectives – unlike the current study, which is concerned with the employees' perspectives – their conclusions that

individualism culture has an impact on e-government might be the same, even though the underlying reason for employees might be different than for citizens.

For citizens, reasons for interacting with e-government systems might involve cultural characteristics such as innovation, so it becomes a suitable environment for them (Herbig & Dunphy, 1998); however interacting with e-government systems from employee's perspectives at the workplace, might involve a tendency for them to prioritise work over relationships (because they are more likely to be work-oriented), so they use e-government systems to get work done more efficiently.

It is worth mentioning though that this does not mean that the members in a collectivist culture would not use e-government at all, but they may avoid using it, since members of this culture seek group harmony and avoid conflicts; they may therefore not use e-government to avoid hurting group members when they do not get their work done. That is, since members in a collectivist culture care more about their relationships with each other, and since using e-government systems indicates who has done the work and who has not, collectivist members therefore tend to not use such systems in order to not hold each other accountable, at least when not doing their work.

In short, since one of the goals of e-government is to make work more efficient (Carter & Bélanger, 2005), individuals in this type of culture, when time management is important to them, would be encouraged to use e-government systems to perform more efficiently within the given timeframe.

H1c:

As set out in Section 4.2.3, the study hypothesised that restraint culture would positively influence the use of e-government systems within government organisations. Restraint cultures tend to be more restricted in their social norms and values. Further, when it comes to the rule of law, maintaining order is a priority and so members' lives tend to be controlled (Hofstede et al., 2010). That is, since employees in this type of culture are work-oriented, superiors are likely to prefer to use e-government systems, meaning that restraint cultures lead to increased use of e-government systems. The results show support for this hypothesis at a

significance level of $p < 0.0005$ (see Table 14) in which the effect size is $f^2 = .034$ (see Table 15).

This cultural dimension is the most recent and is an entirely new dimension that was added to Hofstede's original cultural dimensions, which in turn was based on the 2008 version of Minkov's Values Survey Module (Hofstede et al., 2010; Hofstede & Milosevic, 2018). There is little research on the effect of restraint culture on technology use or adoption, especially on e-government use. Therefore, the result of the hypothesis can be considered as a novel addition to the field of study.

This finding shows that restraint culture has a positive effect on the use of e-government within Saudi government organisations. Other studies such as (Hatmanu et al., 2014) found that indulgent culture is correlated to e-government adoption. As stated previously, this is not to compare (Hatmanu et al., 2014) with this study; rather, it shows that other studies which have investigated the effect of indulgence vs restraint culture on e-government are different. For example, a key difference between (Hatmanu et al., 2014) and this study is that the findings of (Hatmanu et al., 2014) were based on national culture level, not individual culture level, within an organisation (like this study). Another key difference is that the 2014 work the focus was on citizens, whereas the focus of the current study was on government employees.

Additionally, it is stated that because members of indulgent culture have more freedom of choice – individuals can freely fulfil not only their basic needs but also their desires – therefore, members use the technology they want. It is also stated, in contrast, that this is not the case in restraint culture, where members have a regulated and suppressed gratification, which leads to a limitation of such adoption (Hatmanu et al., 2014). This might be true to some extent; that is, when citizens use of e-government as an option, they will adopt it because they want to. However, this does not mean that citizens in a restraint culture will not adopt such technology because they have limited gratification; in fact, if citizens were asked to use e-government in this type of culture, they would do so, since maintaining order is one their top priorities (Hofstede et al., 2010).

Above all, this study is measuring this dimension from a different perspective – the stakeholder's. In particular, it examines the effect of restraint culture within government organisations on the use of e-government. In this case, as employees

are work oriented and maintain order, they would use e-government systems, and this hypothesis was supported.

H1d:

As demonstrated in Section 4.2.3, the study predicted that low uncertainty avoidance culture would positively influence the use of e-government systems within government organisations. Uncertainty avoidance basically describes the members in terms of their tolerance for ambiguity. Members of low uncertainty avoidance cultures tend to be more risk takers and are more welcoming of change. Individuals in this type of culture are more likely to adopt new technologies to achieve their goals (Hofstede et al., 2010). Additionally, it was also posited that low uncertainty avoidance members make greater use of technologies than those with high uncertainty avoidance since their tolerance to ambiguity is relatively high, which makes them use any new tool to achieve their goals (Hofstede & Milosevic, 2018). In this situation, employees are likely to prefer to use e-government systems, meaning that low uncertainty avoidance cultures lead to increased use of e-government systems. The results, however, show no support for this hypothesis. The effect size $f^2 = .000$ (see Table 15) is the smallest amongst other constructs.

Furthermore, the hypothesis was developed based on the literature, where most empirical studies have found that low uncertainty avoidance positively impacts or relates with either intention to use e-government services (Al-Hujran et al., 2011), its development (Kumar et al., 2020), or its usage (Merhi, 2018). It also should be noted that the findings of (Kumar et al., 2020) and (Merhi, 2018) were based on culture at the country level, unlike this study, based on culture at the individual level within an organisation. With regard to (Al-Hujran et al., 2011), while the findings of the study are significant for citizens, it might not be true for government employees, which is another example of the differences between the findings of these studies and the current study.

That is, for citizens, interacting with e-government systems might involve less uncertainty than other forms of interaction. From a citizen point of view, if they go online to do something, they can do it from the comfort of their own homes, in their own time, and if they do not like how the systems are working, they can just stop and walk away. However, from an employee perspective, using e-government systems is different. Employees would mostly be at work, not in the 'safe'

environment of their own homes. The different contexts occupied by citizens and workers lead to different outcomes from each of the cultural aspects. This reinforces the need for research (such as this study) that looks at the employee's perspective, since conclusions from a citizen's perspectives cannot be applied to workers.

This finding flags further investigation where several questions might be asked in order to find out more about the type of organisational culture. Interviews in the subsequent qualitative phase could investigate aspects such as whether people in participant's organisations are comfortable accepting the change, and whether this type of culture has an effect on the use of e-government systems or not.

H1e:

As illustrated in Section 4.2.3, the study predicted that long-term orientation culture would positively influence the use of e-government systems within government organisations. Long-term orientation cultures tend to look more into the future where strategies are more likely aimed at helping to reach long term goals (Hofstede et al., 2010). Additionally, members of such a culture are more likely to have a positive attitude toward adopting and using ICTs as they offer more benefits (Cidral et al., 2020). That said, individuals are more likely to prefer to use e-government systems since members of such a culture encourage perseverance, meaning that long-term orientation cultures lead to increased use of e-government systems. The results show support for this hypothesis at a significance level of $p < 0.0005$ (see Table 14) in which the effect size is $f^2 = .094$ (see Table 15).

Regarding the indulgence/restraint dimension, which is most recent and newly added to Hofstede's cultural framework, it is similar to long-term vs short-term orientation, which is also relatively new as it was added in 1991 (Hofstede, 2001). In line with other studies which have found that long-term orientation has an effect on e-government adoption (Arslan, 2009), e-government services (Nguyen, 2016), or readiness (Khalil, 2011), this study also found that long-term orientation positively influences the use of e-government systems within Saudi government organisations. Even though the results of these studies were based on the perception of demand-side "citizens" (or at least the e-services were meant to be provided to citizens), it can be concluded that long-term oriented culture has an effect on e-government use and adoption from both the demand and supply sides.

While the conclusions that long-term orientation has an impact on e-government might be the same for citizens and employees, the theoretical reason for employees might be different than for citizens as set out at the initial discussion of this hypothesis. In addition, it is worth noting that the findings of these studies were based on national culture level, not individual culture level within the organisation like this study, so it can be concluded that this finding – that long-term orientation culture has a positive influence on e-government – is true at both the national and individual culture levels. Most empirical studies have found that long-term orientation does have an effect on e-government.

Even though most empirical studies, as with this study, found support for the hypothesis that long-term orientation culture influences e-government, it is worth investigating more about the type of organisational culture. Interviews in the subsequent qualitative phase may investigate other aspects, such as whether people are future oriented (meaning that they may give up today's fun for success in the future), or whether long-term orientation culture has an effect on the use of e-government systems, or whether there might be something else. These investigations, the second qualitative phase of the study reinforce the statistical data from the quantitative phase and provide deeper understanding of the relationships found.

H1f:

As set out in Section 4.2.3, the study predicted that feminine culture would positively influence the use of e-government systems within government organisations. Feminine cultures tend to value quality of life more, so that members of such a culture are more likely to strive for a balance between work and family. When it comes to work, members tend to avoid conflict and have general agreement (Hofstede et al., 2010). Because quality of life and communication are more important for members in this type of culture, individuals are more likely to utilise technology to improve their quality of life (Bagchi et al., 2004; Gong et al., 2007). Members are more likely to prefer to use e-government systems, meaning that the hypothesis is that feminine cultures lead to increased use of e-government systems. The results, however, show no support for this hypothesis in which the effect size is $f^2 = .019$ (see Table 15).

Like other hypotheses, this hypothesis was developed based on the literature (Merhi, 2018; Simon, 1999; Srite & Karahanna, 2006). However, this dimension seems to be controversial (Ford et al., 2003), because there are several papers which propose that masculinity has an effect on e-government development (Ali et al., 2018; Zhao, Collier, et al., 2014) and intention to use e-government systems (Van et al., 2019). Although these studies proposed that masculinity has an effect on e-government use, adoption and development, the results of these papers failed to find support for their hypotheses. It should be noted that the findings of (Arslan, 2009) did show support for such a hypothesis (that masculinity has an effect on e-government adoption). However, this finding was based on culture at the country level, unlike this study where it is based on culture at the individual level within an organisation. Further, it might be difficult to identify the use of technology such as the Internet with this type of culture as this technology has the distinguishing features of both types of cultures (Johnston & Johal, 1999).

Since the dimension is controversial – empirical studies show that both masculinity and femininity may have an effect on e-government use – and since this study did not find support for this hypothesis, these differences raise a flag for further investigation to find out more about this type of culture. Interviews in the subsequent qualitative phase may investigate aspects such as whether emotions and feelings are commonly expressed in the participant's organisations, or whether people work cooperatively, or whether this type of culture has an effect on the use of e-government systems or not.

It can be seen that the cultural dimensions had an R^2 value of .264 (see Table 16), which means that the cultural dimensions explained 26.4% of the variance in e-government use. The combination of the characteristics of individualism, restraint, long-term orientation cultures in fact tells a compelling story. That is, members in these types of culture strive for efficiency – they are assertive and work-oriented. They tend to prioritise work and make every possible effort to get work done, including adopting technology to be more efficient in the long run. However, this does not mean that other types of culture do not have an influence on the use of e-government systems, and the next phase of this study aims to investigate this further.

As noted previously, there have been many studies exploring the influence of cultural dimensions on e-government from a citizen's perspective at a national level,

whereas this study investigates these relationships from a government employee's perspective at an organisational level, and this is a major difference between the current work and the other studies discussed. Looking at the national level does not explain the differences between the organisations, since, as discussed above, they may have different types of cultural dimensions. These differences could lead to different outcomes. Understanding and dealing with these different cultural differences is likely to be fruitful in terms of using e-government systems. This point is discussed further in the Practical Contributions Section of Chapter Six.

To conclude, six cultural hypotheses were tested in this phase in which there were three hypotheses, H1b: Individualism, H1c: Restraint, and H1e: Long-term Orientation, for which the quantitative phase found support, and three hypotheses, H1a: Large Power Distance, H1d: Low Uncertainty Avoidance, and H1f: Femininity, where the phase did not find support. Additionally, as this study investigates the relationships of cultural dimensions at the individual level within an organisation, where the individual's personality could play a major role in terms of technology adoption and use, it is worth looking closer at the personalities and the individual characteristics, as individual differences here could also explain differences in e-government use.

Further, since there are similarities between some of the cultural dimensions and some of the "Big Five" personality traits in the Five Factor Model (FFM), where there are correlations with Hofstede's cultural dimensions (Hofstede & McCrae, 2004; Migliore, 2011), and since the FFM has an effect on technology adoption (Barnett et al., 2015; Buckner et al., 2012), it is worth exploring the influence of the FFM personality traits associated with Hofstede's cultural dimensions on e-government use. Since some of cultural dimensions have an effect on e-government use, as supported above, some of the FFM personality traits might also have an effect. This is explored further in the next qualitative phase.

[E-government use related hypotheses](#)

As the hypotheses in the second part of the model (H2, H3, and H4) are connected with each other, and associated with Panopticon Theory, they will be discussed together. Section 4.2.3 predicted that e-government use would have a positive impact on the levels of perceived transparency, and subsequently also on levels of

perceived accountability and levels of self-reported compliance within government organisations. E-government has been defined in different ways by multiple scholars (Carter & Bélanger, 2005; Layne & Lee, 2001; Fieldit et al. 2003, as cited in Twizeyimana & Andersson, 2019; Zhao & Khan, 2013). As previously discussed in this section, there have been many studies which have examined adoption, development, and readiness; however, this study focuses on the way that e-government use leads to transparency, and then accountability and compliance.

With regard to H2, the results show support for this hypothesis at a significance level of $p < 0.0005$ (see Table 14) and $R^2 = .303$ (see Table 16), which means that the use of e-government explained 30.3% of the variance in perceived transparency. Additionally, the effect size is $f^2 = .435$ (see Table 15), which is very large (Chin, 1998; Kirk, 1996), and indicates that the relationship is not only statistically significant but meaningful. This finding indicates that Saudi government employees perceive that their work is transparent. The more that their work is done through the systems, the more their work is perceived to be visible to others within the organisation. As a consequence, the employees act properly, leading to accountability (H3) if anything goes wrong and compliance (H4), the essence of Panopticon Theory.

Besides studies mentioned in the literature review, other studies (Bannister & Connolly, 2014; Bonsón et al., 2012; Kim & Lee, 2012; Relly & Sabharwal, 2009) that have investigated the effect of e-government on transparency in a different contexts, citizen focus, have also arrived at the same conclusion. One cross-national study explored the perceptions of transparency in government policymaking and found that the more that countries have access-to-information laws, e-government, and telecommunication infrastructure, the more transparent they rank (Relly & Sabharwal, 2009). Another study provided a general view about whether the use of web 2.0 and social media tools enhanced transparency, and whether this usage provided a real corporate dialog; the study found that most European local governments use these tools to promote transparency (Bonsón et al., 2012). Further, a study investigated the relationship between e-participation, applications including online forums such as virtual discussion rooms, electronic juries, and electronic polls, and trust in local government; it focused on five dimensions including government transparency and found that satisfaction with e-participants application is related to government transparency assessment (Kim &

Lee, 2012). Lastly, a study was conducted to explore the relationship between ICTs, transformative government, and public values, including transparency, found that ICTs positively and highly impacts transparency (Bannister & Connolly, 2014).

Additionally, as illustrated in the literature review chapter, most studies discuss different types of transparency, such as government transparency and open government, in which the focus is usually on the citizens' perspectives, whereas this study explores the perceived transparency in terms of the government workers' actions being visible to others within their organisations, which makes the findings quite distinct from most studies discussed in the literature review and in this section.

It is worth noting that other studies have explored the inverse relationship, meaning the effect of transparency on e-government, such as (Kumar et al., 2018; Venkatesh et al., 2016). Most of the literature related to transparency within e-government focuses on transparency that is citizen focused. That is, it deals with transparency of the government process to citizens, unlike the focus of the current study. Despite the fact that such papers explore the inverse relationship, they seem to convey a similar message as other papers that have investigated and discussed the impact of e-government on transparency. It can be clearly said that without the use of e-government systems, transparency would not be reached. This relationship seems to be a continuous circle.

The other hypothesis associated with Panopticon Theory is H3, where the study predicted that e-government use, via the effect of perceived transparency, would have a positive impact on levels of perceived accountability within government organisations. This hypothesis mainly focuses on the after-effect: it is based on the work of employees being visible to others, so that if employees do not follow instructions or do something wrong, they perceive that there is a likelihood that it would lead to consequences, meaning that the employees would be held accountable. And therefore, because they are aware of this possibility, they are more likely to comply in order to avoid consequences, as discussed in the next hypothesis.

The results show support for this hypothesis at a significance level of $p < 0.0005$ (see Table 14) and $f^2 = .060$ (see Table 15), which is above the minimum acceptable value (Chin, 1998). As a matter of fact, at the structural level this effect size is considered as a medium effect size (Khalilzadeh & Tasci, 2017). Even small effect

size can be very important – for instance, a new medical treatment which has a small but significant effect on patient survival. Although this effect size is small, it is a significant effect and important in this context. That is, this finding means that the predicted surveillance mechanisms that are derived from Panopticon Theory are working. If the employees are using e-government systems and they perceive that their work is visible to others, they perceive that there is a likelihood that they could be held accountable for not following the rules and regulations. It might be true that what employees do is not always being monitored. However, since their work is on the systems and everything they do is perceived to be seen by others, they would at all times act as if they were being monitored, since they do not know whether or not their work is being monitored.

Studies such as (Bertot et al., 2012; Pina et al., 2010b) have discussed accountability, besides transparency, as a consequence of the use of e-government. As well as these studies, others have found that a relationship exists and there is an effect of e-government on accountability (Bannister & Connolly, 2014; Haque & Pathrannarakul, 2013; Ray, 2012). On the other hand, it is worth mentioning that there are other studies that did not find this kind of relationship between e-government and accountability, or stated that the relationship is not clear (Chen et al., 2010; Petrakaki et al., 2009; Pina et al., 2007). There are also others which indicate that e-government may lead to accountability, but only under certain conditions (Pina et al., 2009).

To sum up, some studies have found support for this kind of relationship while others have not, and some which have stated that the relationship exists but only under certain conditions. In fact, it has been suggested that there is a need for further investigation on how e-government influences accountability (Halachmi & Greiling, 2013), which is what the present project has done. The findings of the current study are quite different to the other studies discussed, not only to those in this section but also in the literature review of Chapter Two. Most studies discuss different types of accountability in which the focus is on the government organisation being accountable to its citizens, whereas this study investigates accountability of individual government workers within their organisation.

The last hypothesis of the second part of the model, associated with Panopticon Theory, is H4. This hypothesis predicted that e-government use, via the effect of perceived transparency, would have a positive impact on levels of self-reported

compliance within government organisations. As e-government use, perceived transparency, and perceived accountability have been covered above, the self-reported compliance means that employees adhere to rules and regulations established by their organisations. As a result of using e-government systems, which is perceived to make the work of employees transparent, the employees are more inclined to follow and comply with the rules and regulations.

The results show support for this hypothesis at a significance level of $p < 0.0005$ (see Table 14) and the effect size is $f^2 = .364$ (see Table 15). This is considered a large effect size (Chin, 1998; Kirk, 1996), and indicates that besides being statistically significant, e-government use has, via perceived transparency, a very high impact on self-reported compliance. As set out earlier, the more an employee's work is done through e-government systems, the more their work is perceived to be visible to others within the organisation. Thus, employees act properly, leading to more compliance, the essence of the Panopticon mechanism.

There are several empirical studies that have examined the effect of e-government on transparency, and a few on accountability, so the novelty of this study is not only that the current study is supply-centric "employee-centred" (unlike most of the studies which are demand-centric "citizen-centred"), but also that the literature lacks empirical studies examining the effect of e-government use on levels of self-reported compliance within a government organisation (especially empirical studies that examine the influence of e-government use via the effect of perceived transparency on self-reported compliance).

It should be emphasised that there are several papers that have theoretically covered compliance in relation to government – such as (Halstuk, 2000; Lau, 2007; Linders & Wilson, 2011; Villanueva & Greenwald, 2009). These papers are mainly concerned with the right to access governmental information from the perception of citizens. Several acts – the Electronic Freedom of Information Act of 1996 (EFOIA) (USA), Freedom of Information Act of 1966 (FOIA) (USA), Federal Transparency and Access to Governmental Public Information Act 2003 (Mexico), and Open Government Directive (OGD) (USA) – were specifically initiated for that purpose. These acts allow citizens to access information on government web sites, and ensure that citizens are able to make requests, and that government agencies have to respond.

There are several empirical studies covering government compliance, but the compliance is different to the type investigated here. For instance, a study was made into the compliance of 130 governmental web sites in UK to legal mandates, and to industry accessibility guidelines, regarding access to users with disabilities and found that besides that these web sites lack openness and do not comply with these accessibility guidelines (Kuzma, 2010). Another study was concerned with the impact of e-government on the compliance of citizens and business (Srivastava, 2011). Other work has investigated the effect of citizens' use of the internet on the citizen trust in government and compliance (Im et al., 2014), and evaluated the open government data (OGD) compliance from citizens' perception (Viscusi et al., 2014). The way that these studies discuss compliance in a government context is away far from how the current study discusses the impact of use of e-government on the level of self-reported compliance by employees, which makes the findings unique and a new addition to the field of knowledge.

As discussed in Section 4.3, whereas the current study adopts Panopticon Theory, which focuses on the risk of being detected, General Deterrence Theory (GDT), focuses on the threat of punishment, and the latter could also be applied to this study. The literature shows support for such a claim. For instance, one study employed GDT in the context of e-government to investigate the impact of four types of security measures to counter information. It found that these policies can be effective if the punishment is effectively carried out (Fan & Zhang, 2011). This is the essence of GDT, meaning that whenever the punishment is effective, there is more compliance. Although the study focused on the effectiveness of punishment in enforcing policies, another study has focused on reducing corruption when punishment is certain (Bhattacharjee & Shrivastava, 2018). The latter study found that ICTs could reduce corruption through the severity and certainty of punishment. Although Panopticon Theory and GDT may seem like different theories – the first concerned with the threat of being detected and the other with punishment – they share the concept of effecting a change in behaviour.

In closing, most theoretical and empirical studies have been concerned either with the compliance of government in providing information, or the compliance of citizens and businesses with governmental rules and regulations. Studies that explore the effect of e-government on self-reported compliance from the employees' perspective – whether via the influence of perceived transparency or not – are rare.

Hence, the findings here can be considered a novel addition to the body of knowledge in the field of IS and specifically in the field of e-government.

4.12. Chapter summary

This chapter began with definitions of the study constructs and discussed some of them. Next, the proposed research model was presented in which there was a discussion of how the hypotheses were developed. Relating the research to another theoretical approach was also discussed. Development of the questionnaire and measurement items in which the process of translating the whole survey into Arabic was then presented. Following this was a presentation of the pilot study and how it was employed to check the clarity of the items and test the response rate for both versions of the survey. Details of the sample selection and data collection were then provided. Next, details of how data was screened were provided. To ensure reliability and validity of the constructs, this chapter outlined the statistical tests used, and this was followed by the SEM analysis.

Finally, the SEM model was used to examine relationships between the constructs. Results section showed whether the proposed hypotheses were supported or not, and the Discussion section evaluated of all nine hypotheses. In summary, it was shown that e-government use has a very strong effect on workers' perception of their work being transparent, which in turn has a very strong effect on their compliance with the expectations of their role. Additionally, e-government use also leads to an increase, albeit not as strong, in the workers' sense of accountability. These benefits will be greater in organisations that have a more individualist and restrained culture, and which have a longer-term orientation.

Based on the findings of this phase, the next chapter presents the second phase of the study.

Chapter Five: Qualitative phase

5.1. Introduction

Since this study employs an explanatory sequential mixed methods design, and as the relationships identified in the quantitative phase were theoretically and statistically supported, the aim of this phase is to confirm or validate and give a rich understanding of these relationships (Creswell & Clark, 2018). As mentioned in the methods chapter, this phase triangulates the results from the quantitative phase. This provides more confidence in the conclusions than if they had been made on the basis of one methodology alone. In other words, this stage explains the 'how and why' of these relationships. Data from this phase is complementary evidence to the numerical data of the previous phase, the goal being to provide a comprehensive insight – from combining both the statistical data and the interviews – which cannot be gained from the statistical data alone.

The discussion of the previous stage of the research identified certain personality traits as being potentially relevant to the phenomenon being explored; this chapter therefore commences by providing background to the Five Factor Model (FFM) of personality and how it is associated with cultural dimensions and the use of technologies. Then, the environment in which the interviews were held, including the process, is described. This is followed a description of both the sampling techniques, including recruitment challenges and data collection. A detailed description of the thematic analysis method used is then provided, and finally the chapter concludes by presenting and discussing the findings of this phase, including the new insights revealed by the participants.

5.2. Background

Conscientiousness has several facets, including order, achievement orientation, responsibility, and competence (Costa & McCrae, 1992; McCrae & Costa, 2003). Conscientiousness is associated with acquiring knowledge (Barnett et al., 2015). Individuals tend to cautiously consider using technology as an opportunity to achieve job tasks and, based on their assessment, they act accordingly (Devaraj et al., 2008). Additionally, it has been found that students who are considered conscientious tend to use the internet (Landers & Lounsbury, 2006). Lastly, it has been found that conscientiousness is positively associated with use of technology

(Barnett et al., 2015). Therefore, one expects that conscientious people will use e-government systems. However, since the quantitative phase of this study did not find support for the power distance hypothesis, H1a, which is associated with conscientiousness (Hofstede & McCrae, 2004), further research is warranted to investigate the roles of conscientiousness and its association with use of technology, specifically e-government systems.

Common facets of agreeableness are trust, altruism, compliance, and tender-mindedness (Costa & McCrae, 1992; McCrae & Costa, 2003). Agreeable people are described as cooperative and helpful (Graziano & Eisenberg, 1997). It has been said that agreeable individuals are service-oriented and considered great in teamwork, especially at jobs involving helping and cooperating with others (Barrick et al., 2001). In terms of any technology that enhances cooperation and collaboration, one can predict that agreeableness is highly associated with it (Devaraj et al., 2008). However, some researchers argue that since agreeableness does not involve a motivation to learn, a direct relationship with use of technology cannot be predicted (Barnett et al., 2015). On the other hand, others have found that agreeableness has a high correlation with accepting technology (Keeton, 2008). In the same vein, it has been found that agreeableness is positively associated with perceiving technology as useful, and moderates the relationship between subjective norms and the intention to use technology (Devaraj et al., 2008). Lastly, it has also been found that agreeableness has a positive influence on perceived ease of use (Özbek et al., 2014). Therefore, one expects that agreeable individuals will use e-government systems. However, since the quantitative phase of this study did not find support for the uncertainty avoidance hypothesis, H1d, associated with agreeableness (Hofstede & McCrae, 2004), further research is warranted to investigate the roles of agreeableness and its association with use of technology in the context of e-government systems.

The characteristics of extraversion are assertiveness, gregariousness, activity, excitement seeking, and positive emotions such as joy and happiness (Costa & McCrae, 1992; McCrae & Costa, 2003). Extraversion is associated with strong learning motivations (Major et al., 2006). Since extraverts are assertive and learning-oriented, they might be motivated to learn new tools such as technology, as it has been reported that extraverts have a positive attitude toward information systems (Zmud, 1979). However, some studies have not found support for

extraversion being associated with the use of technology (Barnett et al., 2015; McElroy et al., 2007), whereas others (Devaraj et al., 2008; Li et al., 2006; Pratt & Chudoba, 2006; Svendsen et al., 2013) have found that extraversion is associated with the use of technology. Therefore, one expects that extraversion is associated with use of e-government systems. However, since the quantitative phase of this study did not find support for the femininity hypothesis, H1f, which is associated with extraversion (Hofstede & McCrae, 2004), further research is warranted to investigate the roles of extraversion and its association with the use of technology in e-government systems.

To conclude, some of the personality traits in the FFM are associated with Hofstede's cultural dimensions, as set out in the previous chapter, and since there is some literature that shows that the FFM personality traits have an effect on technology adoption and use (as illustrated above), this chapter – besides investigating and confirming other significant or non-significant relationships found in the first phase – sets out to explore the association between some of the FFM personality traits and the use of e-government.

5.3. The interviews

A brief description of the semi-structured interview technique used in this study was provided in Section 3.3.1.2, and this section expands upon it.

Interviewing is one of the most common and widely used techniques among qualitative researchers (King & Horrocks, 2010; Kvale, 2007; Minichiello et al., 2008; Qu & Dumay, 2011; Spradley, 1979) and involves two main elements: rapport building and information eliciting (Spradley, 1979). Rapport building is referred to as the development of a harmonious relationship between the interviewer and the interviewee so that a sense of trust is gained. This leads to a free flow of information where both the researcher and the participant have positive feelings about the interview and sometimes even a sense of enjoyment (Spradley, 1979). During all the interviews conducted, the researcher made sure that rapport was developed before asking the main questions of the interview, and bore in mind the rapport building stages of *apprehension, exploration, cooperation, and participation* (Spradley, 1979).

The *apprehension stage* began when the researcher sent the Information Statement (Appendix 14) in which information about the anonymity of the interview was

provided. Further, it was stated that participants could contact the ethics office at Curtin University at any time if they had any concern related to the participation in this study and had the right to “withdraw at any time without prejudice or negative consequences in which no reason needed to be provided.” Lastly, it was also explicitly stated that any information provided by participants in the interview would not be disclosed. These points helped in building a sense of trust for the participants.

Participants were asked to read the Information Statement and sign the Consent Form (Appendix 15). This documentation included the information that the interview was to be audio recorded, and this may have made some participants nervous (the issue is discussed in more detail in Section 5.4.1). Before beginning each interview, the researcher went through the main points in the Information Statement related to the confidentiality of the information provided by the interviewee and the anonymity of participants (Qu & Dumay, 2011). To further facilitate development of rapport, the researcher began each interview by stating the research objectives and the anticipated duration of the interview, in which participants were given the option to break the interview into two sessions. Participants were also asked if they had any questions regarding participation in the study. Further, interviewees were explicitly told that there were no wrong answers and were encouraged to feel free in sharing any information they wanted to. Furthermore, interviewees were also told that it was totally fine to say “I don’t know” if the researcher asked a question to which they didn’t have an answer or about which they had no experience (Whiting, 2008). Since these points are important in building rapport, the researcher included them as reminders in the Interview Guide (Appendix 16).

The *exploration stage* (Spradley, 1979) began when the researcher started asking questions unrelated to the study, in order to make the participants feel relaxed and start talking freely. Since the interviews were held online (in which the researcher was in Perth, Australia, and the participants were in Saudi Arabia), an example of such a question was: “*How is the weather in Saudi Arabia?*”, and since the interviews were conducted during the peak of COVID-19, another example was: “*How is everything with COVID-19 back home?*”

As rapport was being developed, the interviewer began to commence collecting data in a non-threatening way. One strategy was to ask the *grand tour* or *introducing* questions (Qu & Dumay, 2011; Spradley, 1979) – such as “*Can you describe a typical day in your department?*” and “*How long has your department been using e-*

government systems?”. These types of questions helped move the interviewees into an interview mood, enabling the interview to flow smoothly from the *exploration stage* to the *cooperation stage*. Techniques such as verbal agreement, informal prompt, and silent probe were used to show interest in what the interviewees were saying (Bernard, 2013; Leech, 2002). These techniques helped elicit more information from the participants throughout the whole interview.

As the interview proceeded, the interviewees felt more comfortable – the “*cooperation to participation stage*” (Spradley, 1979) – to share their experience and knowledge about the topics covered, especially when the interviewer started with opening questions related to organisational culture which were then followed by different types of questions such as: *follow up, probing, example, and specifying* questions. Starting to collect data with organisational culture’ questions facilitated a smooth move from the *cooperation to participation stage*. Since both the interviewer and the interviewees shared the same cultural background (Leech, 2002), talking about organisational culture at the start of the main data collection made it much easier for the participant to engage in the interview and freely provide more information – they opened up, gave examples, and shared their stories.

Another point that facilitated reaching the *participation stage* was when the interviewees were asked about the topic related to the FFM model of personality traits. Questions such as “*Is achievement a need for you? Can you please explain?*” and “*Do you find yourself a helpful and cooperative person? Can you please give examples?*” that are described as *specifying* and *example* questions (Leech, 2002; Liamputtong, 2012) gave them a sense of care in which they had a chance to talk about themselves and share, for example, their achievements.

Once the researcher reached half-through the interview, interviewees were reminded and given the choice whether they wanted to continue or stop at that point and continue at another time. This ensured that participants had sufficient time for the other crucial topics yet to be explored – use of e-government, perceived transparency, accountability, and self-reported compliance. At this point of the interview, more free discussion continued in which the interviewees provided a variety of examples and shared several stories (if they expressed interest in a topic, which a number of them explicitly said they were – see Table 18).

For instance, one interviewee, AM, was not only willing to provide further assistance, which he did, but he also said *“I really enjoyed because this kind of aah study will add value, you know”*. Another participant, MM, was not only initially willing to provide further assistance but also to invite other potential participants, which he also did, and said *“if you want anything if you have any problems or any question about the research, if you want to make another you know interview, I will be happy to”*, and then said *“if you want me to, you know, to invite another candidate”* without the researcher asking him to do so. Furthermore, in some interviews, participants showed their passion and interest in the study. For example, the interviewee, AQ, explicitly said *“at the end of the ride, I believe these kinds of studies help the organisations”*. As a last example, the interview with YT was very informative and in fact was the longest interview, lasting for one hour and a half. The data collected was rich in information related to the topics explored, and at the end he said *“It is my pleasure, you know, I tried to give the best of me, especially for the sake as I said, you know, education and knowledge, yeah I mean yeah it is my pleasure, I hope, you know, I have provided you, you know, such good information you could use in ... your research and um [pause] yeah, and If I could offer more, I am willing to do such thing”*.

Table 18. Evidence of gaining rapport

Interviewee	Willing to provide further assistance and invite others	Introduced other participants	Opened up, provided examples / shared stories	Expressed interest / appreciation of participation
MM	✓ (Initially)	✓	✓	Interest
HJ	✓		✓	Interest
JA			✓	Appreciation
ZH			✓	
MH	✓		✓	Appreciation
YR			✓	Appreciation
AH	✓	✓	✓	Appreciation
IA	✓ (Initially)		✓	
YT	✓ (Initially)		✓	Interest & Appreciation
AQ	✓ (Initially)	✓	✓	Interest & Appreciation
AS	✓		✓	Appreciation
AM	✓		✓	Appreciation
HF	✓		✓	Appreciation
AJ	✓		✓	Appreciation
HM	✓	✓	✓	Appreciation
MT	✓		✓	Appreciation
MR	✓ (Initially)		✓	Appreciation

As can be seen in the table above, most participants were willing to provide further assistance to conduct another interview and invite other potential participants. Also, they either expressed their interest in the study or showed appreciation to be part of this study. It is also clear that all interviewees opened up in which they shared their valuable experience and interesting stories. It is apparent from the table above that rapport was developed with all participants, which most importantly facilitated eliciting more rich information that served the purpose of conducting the interviews.

The first interview was conducted as a pilot interview to test the interview protocol, the clarity of the questions, and the audio recording, and so forth. However, since it was successful in terms of data collection, it was included in the data analysis. The first few interviews helped in revising some questions as well as in facilitating flow of the interview. More details are provided as follows. As discussed in Section 3.3.1.2, the interview questions were basically informed by the results of the quantitative phase where interview guidelines (Leech, 2002; Liamputtong, 2012; Qu & Dumay, 2011; Spradley, 1979; Whiting, 2008) were followed. The Interview Guide contained six main sections: 1) Further rapport development; 2) Grand tour and introducing questions; 3) Organisational cultural questions; 4) FFM Personality traits questions; 5) Use of e-government systems, perceived transparency, perceived accountability, and self-reported compliance questions; 6) Demographic questions (Appendix 16).

As mentioned above, after developing rapport, the researcher went over the *grand tour* questions. Once finished, the researcher then started asking questions related to the organisational culture. The FFM personality traits questions were first imbedded within the cultural questions. That is, since power distance is associated with conscientiousness, low uncertainty avoidance is associated with agreeableness, and femininity is associated with extraversion, the conscientiousness questions were placed right after power distance questions, the agreeableness questions were placed right after the uncertainty avoidance questions, and the extraversion questions were placed right after the femininity/masculinity questions. However, the researcher realised that it was a bit distracting to ask organisational culture questions then go through the personality traits questions then go back and ask organisational culture questions and then again go through the personality traits questions. Therefore, the researcher found it more comfortable for the interviewee to finish up all organisational culture questions

and then go through the FFM personality traits questions in a separate section, which was placed after the organisational culture's section (Appendix 16).

The first interview also helped the researcher make sure that no leading questions were used. For example, during the first interview, the researcher noticed that the following question "*Are you aware that your work is being monitored?*", which was first included in the Interview Guide, might be considered as a leading question (Leech, 2002; Liamputtong, 2012). Therefore, another question, "*Do you think that what you do on the system is being monitored? Can you please give examples?*" was added and asked during that interview.

Due to the nature of the semi-structured interview, some of the questions were skipped, since the interviewees had already answered them earlier in the interview. For instance, in the use of e-government systems section, there was a question asking the interviewees about whether their work is mainly through the systems or not, which had already been answered when the researcher asked the interviewees about the length of their use of the systems as a part of the grand tour questions. Another example is a question that was meant to be asked toward the end of the interview, related to self-reported compliance with rules and policies. In some cases, the researcher skipped this question since some interviewees had already answered it within questions related to perceived transparency. Another case is where the researcher combined two questions into one, as it made sense at the time. For example, in some situations, the researcher combined these two questions, "*Is hierarchy important in your organisation?*" and "*Is power centralised in a few hands in your organisation?*" (related to one of the cultural dimensions, power distance), into one question, "*what about the hierarchy in your organisation, is it like more toward flat, or is it important where power might be in a few hands?*". Such cases commonly occur in semi-structured interviews as the flow of the interview is based on the responses of the interviewees.

Another point that helped in revising interview questions in the first few interviews is related to providing examples and sharing stories about employees being held accountable, or complying with rules and regulations due to their use of e-government systems. The researcher noticed that participants were hesitant to do so when they were asked to provide example and share their own stories. Therefore, at that moment the researcher rephrased question and asked the interviewee to provide any example or share stories of others being held accountable and

complying more with rules and regulations as a result of their usage of e-government systems. When the question was rephrased, the interviewee felt more comfortable providing examples and sharing stories.

The researcher also noticed that within the FFM personality traits section there were two questions which asked for the same thing, *“Do you usually follow orders?”* and *“Do you usually comply with orders and rules?”*, so the researcher combined the two questions by asking the following *“Do you usually comply with orders, new rules?”* as there was no need to ask the same question twice as the participants gave a clear response to this question, which covered the response to both questions.

Additionally, as participants started to provide other reasons to comply with rules and policies besides being monitored through the systems, the researcher added the following question *“Is there any other reason that would make employees comply with the rules and regulations? Could you please name some?”* to open new doors for participants to share their experience. In fact, this was a strategy to push the interviews from different angles, and to get new information or insights, as a point of redundancy (Lincoln & Guba, 1985) was noticed. More information about saturation is discussed in Section 5.6.

As a part of the objectives of this study, this phase was designed to explore the types of culture within the Saudi government organisations, so the study also sought to investigate whether the six types of culture have an influence on e-government use or not. During the first interview, the researcher noticed that these points were explored implicitly by asking questions such as *“What happened when the new systems came in?”* and *“Was there resistance at first when the new systems came in?”* Therefore, to make sure that this point was covered precisely, questions about the influence of each dimension on the use of e-government systems were added as *specifying or follow up* questions (Liamputtong, 2012; Qu & Dumay, 2011); that is, to the interview questions exploring cultural dimensions, participants were asked whether employees in each types of culture would be more willing to use or avoid the systems and why (Appendix 16).

Besides the investigation of the influence of organisational culture on the use of e-government systems, and as set out in the beginning of this chapter, to explore some of the FFM personality traits associated with Hofstede’s cultural dimensions, participants were first asked questions related to their personalities. Then, they were

asked about whether they would be more inclined toward using e-government systems (or not) and why. These questions were added as *specifying or follow up* questions (Liamputtong, 2012; Qu & Dumay, 2011) to gain a clear understanding of these personalities and the possibility of them being associated with the use of e-government systems.

As previously mentioned, participants were given the right to decline to answer any question during the interviews, including demographic ones. Until one point, the researcher found that all participants felt comfortable providing their information. Then, after one of the participants preferred not to provide their age, the researcher added “*prefer not say*” to all demographic questions. In this way, the researcher would not forget to give participants in the upcoming interviews that option too.

Last, even though it was mentioned in the Information Statement and Consent Form that the interviews were to be audio recorded, one participant asked the researcher to turn on the camera as the participant felt more comfortable having it on during the interview. Therefore, during the interview the camera was only on upon the request of the participant. However, as per the ethics approval, the researcher only saved the audio recording once the interview was over.

5.4. Sampling

As this was the second phase of the study in which the focus of analysis had been Saudi employees in the public sector, the sample for the interviews was also Saudi government employees. Purposive sampling (Braun & Clarke, 2013; Morgan, 2014; Tashakkori & Teddlie, 1998) and snowball sampling strategy (Lee, 1993; Lune & Berg, 2017) were adapted to recruit potential participants. In qualitative research, a purposive sampling strategy is considered a typical strategy as it aims to generate an in-depth understanding of the topic explored (Braun & Clarke, 2013). A purposive sampling strategy was used because participants with a specific characteristic were needed (Bowling, 2014).

To take part in this study, interviewees had to be Saudi citizens working in a public organization such as authorities, municipalities, universities, and centres and have sufficient command of English to engage in an in-depth interview in English. It was not feasible to conduct the interviews in Arabic due to the very large volume of data that would need to be translated into English by the researcher and then back-translated into Arabic by a certified translator in order to check the accuracy of the

translation. This would have been costly and beyond the project budget, and so, it was decided to conduct the interviews in English. The opportunity for sample bias is minimal because for many years English has been a widely spoken language in Saudi Arabia, and business is often transacted in English in the country. In fact, since 2011 English has been a mandatory second language from grade four in primary school since 2011 (Aljohani, 2016). However, this study notes that this is a limitation since English is not the mother tongue in Saudi Arabia. Lastly, participants had to use one of the e-government systems as part of their job. Again, the researcher ensured that all 17 participants who took part in this study met these criteria.

The snowball sampling strategy took place to recruit both male and female participants, especially the females. Since Saudi Arabia is considered a conservative culture (Al Surf et al., 2012; Wynbrandt, 2010), it is not appropriate and sometimes not acceptable to contact females directly. Therefore, a snowball strategy was used in which interviewees participating in the study introduced the researcher to other female participants. Even though this resulted in fewer female participants when compared with males, this issue did not create any risk of sample bias as similar responses regarding topics explored were given by both female and male participants (as can be seen from the analysis). More information about challenges faced during the recruitment of potential participants is discussed in the next sub-section.

Because of the large volume of data gathered from a verbal protocol, such as semi-structured interviews, an appropriate sample size for qualitative studies is usually very small, between two and 20 (Todd & Benbasat, 1987). Similarly, for qualitative research, the sample size tends to start out small, and the number of interviews needed to answer interview questions becomes clearer as the project progresses (Marshall, 1996). In this study, the number of participants recruited was 17. The process of recruitment continued until saturation was reached (Saunders et al., 2018) from the analysis. Saturation is discussed in more details in Section 5.6. Details of the recruitment process are as follows:

The researcher was based in Perth, Australia, and the potential participants were based in Saudi Arabia. COVID-19 travel restrictions prevented the researcher from conducting the interviews in person with potential participants in Saudi Arabia (more details are provided in the Data Collection Section). Prior to sending the formal

invitation email to the potential participants which contained the Information Statement (Appendix 14) and the Consent Form (Appendix 15), potential participants were initially recruited in several ways using the purposive sampling strategy mentioned above. One way to test their willingness to participate in the interview was via one of the social media applications, WhatsApp. After getting their confirmation to voluntarily participate in an interview, a formal email was sent using the Recruitment Material (Appendix 13) asking them to read the Information Statement and sign the Consent Form. After obtaining the Consent Form, another email was sent containing virtual interview information such as time, Zoom link, meeting ID, and passcode. As the researcher is himself a government employee, the researcher directly contacted potential participants who work for the government and who use e-government systems as a part of their job. When an interview was over, some of those who had agreed to take part in the study were willing to help recruit other potential participants, as described in the previous section.

Another way of recruiting participants was through the researcher's network, where the researcher asked his colleagues and friends to find people who might be interested in participating in the study. This helped the researcher recruit more participants, especially female participants, since it is not acceptable to contact them directly (as will be noted in the Recruiting Challenges Section). It is worth noting that the researcher's network, colleagues and friends, voluntarily helped to recruit potential participants when they heard that the researcher was looking for potential participants; they initially contacted the researcher and offered their help. Colleagues and friends helped introduce the researcher to potential participants in which the participants' contact information was exchanged. With regard to the female participants, culturally it is not accepted to contact them via phone applications such as WhatsApp, so the researcher had to contact them via email, which is more formal and acceptable in Saudi culture. The total number of participants who took part of the study was 17 – 12 male and five females. Table 19 provides a background of each participant.

Table 19. Participants' background information

Interviewee	Background	Level of e- gov. use	Gender
MM	An experienced employee working as a head of a unit at a governmental organisation under the Ministry of Human Resource and Social Development for more than 11 years	High	Male
HJ	An experienced lecturer working at a governmental institution organisation under the Ministry of Human Resource and Social Development for more than six years	High	Male
JA	An experienced faculty member working as a head of a department at a governmental institution under the Ministry of Human Resource and Social Development for more than 18 years	High	Male
ZH	A lecturer working at a public university under the Ministry of Education for more than a year	High	Female
MH	An experienced trainer working as a head of a centre at a governmental institution under the Ministry of Human Resource and Social Development for more than 11 years	High	Female
YR	An employee working as a secretary of a centre at a governmental organisation under the Ministry of Human Resource and Social Development	Low	Male
AH	An administrative employee working as a head of a department at a governmental entity under the Ministry of Health	Medium	Male

IA	An experienced employee working as a supervisor at a governmental authority under the Royal Commission for Jubail and Yanbu	High	Male
YT	An experienced employee working as an engineer at a governmental municipality under the Ministry of Municipal and Rural Affairs for more than five years	Low	Male
AQ	An experienced employee working as a head of business centre at a public university under the Ministry of Education for more than five years	High	Male
AS	An employee working as a secretary at government organisation under the Ministry of Health for more than a year	High	Female
AM	An experienced lecturer working as a supervisor at a public university under the Ministry of Education for more than five years	High	Female
HF	An experienced administrative employee working as a supervisor at a governmental entity under the Ministry of Health for more than 16 years	High	Male
AJ	A professional employee working as a head of a division at a governmental municipality under the Ministry of Municipal and Rural Affairs for more than three years	High	Male
HM	An experienced employee working as a supervisor at a governmental authority under Royal Commission for Jubail and Yanbu for more than 13 years	High	Male

MT	An experienced employee working as a school deputy at governmental school under the Ministry of Education for more than 13 years	High	Male
MR	An administrative employee working as a secretary at a governmental entity under the Ministry of Health	Low	Female

After sending the official invitation, some participants contacted the researcher saying that they did not have PDF software to fill and sign the Consent Form as it was sent as a PDF file, so the researcher provided those participants with a web site that offers a “fill and sign” feature for free (<https://www.sejda.com/sign-pdf>).

5.4.1. Recruiting challenges

Saudi Arabia is considered a conservative society (Al Surf et al., 2012; Wynbrandt, 2010), meaning that men cannot reach out to women who they do not know and ask them directly to participate in a study. That is, it is not culturally acceptable that a male stranger contacts females directly (Al-Shahri, 2002; Nassir et al., 2019). Therefore, recruiting females to participate in studies is very challenging (Nassir & Leong, 2017). In fact, this was the case in this study, and that is why the number of female participants is lower than the male participants. The female participants recruited in this study were introduced to the researcher by females and males in the researcher’s network who knew those potential female participants. One of the five female participants was recruited using the snowball strategy.

Another challenging point was the length of the interview. Several potential participants first agreed to participate in the study when they were first contacted via one of the social media applications, WhatsApp. However, when the official invitation was sent to them and they noticed that an hour to an hour and a half was needed, they said “sorry one hour is too much, no can do”.

Having the participants complete and sign the Consent Form was another challenge. As mentioned in Section 5.3, when potential participants were contacted via WhatsApp and were asked to voluntarily participate, they showed their willingness to participate, but when the official invitation was sent to them via email in which they had to complete and sign a Consent Form, they said “we do not want

to be in any trouble, so sorry". Even though it was mentioned in the Information Statement that there would not be any risk associated with taking part in the study, and when the researcher tried to explain that to them, they apologised and said that they do not want to participate. The key thing here is the consent form itself, which is required by the university's ethics policies and intended to protect both the researcher and participants; the consent form actually scared away participants who were unfamiliar with it and were unwilling to put their name in writing in case there would be repercussions for them. There is potentially an unintended side-effect of ethics processes, meaning that the requirement to sign a form effectively ruled out some participants having a voice in the research.

Another challenging point in recruiting potential participants involved the situation where potential participants just read the title or objective of the study in the Information Statement. There were other potential participants, and were at first willing to participate since they were introduced to the researcher by the researcher's network. However, when they asked the researcher about the topic of the study in detail, they apologised and said they did not have experience in this topic. Although the researcher tried to explain that there was no need to be an expert in this subject, and that any government employee who uses e-government systems could participate, they apologised and said they did not want to participate.

Because interviews were conducted online, another challenge in recruiting potential participants was the time difference between Perth, Western Australia and Saudi Arabia. Most interviews were held at night in Perth time while it was late afternoon or early evening in Saudi Arabia. Another aspect related to that time difference was that it resulted in losing participants because of the busy schedules of potential participants. For example, some participants who initially agreed to participate, and suggested a time to conduct the interview, apologised when the time came to hold the interview. One of these participants even signed the Consent Form and sent it to the researcher, but while the researcher was waiting for the participant to join the online interview, the participant texted the researcher and apologised as he was busy and promised to reschedule it at another time. However, the researcher had not heard back from him until saturation was reached, so the researcher did not contact him again and deleted the signed Consent Form.

5.5. Data collection

As per the initial plan for the project, it was decided that the researcher would travel to Saudi Arabia to conduct the interviews in person with potential participants. However, due to COVID-19 and travel restrictions in both Australia and Saudi Arabia, amendments to the initial plan were made. Even though Saudi Arabia allowed its citizens to go back to the Kingdom under certain conditions such as hotel quarantine, it was risky to do so as Australia did not allow non-citizen to get in. It was therefore decided to conduct interviews online. All interviews were conducted online except for one interview that was conducted with a male government employee who happened to be in Australia at the time. Even though this interview was conducted face to face, as per ethics approval, it was only audio recorded.

The whole process of interview data collection was carried out between September and November 2020. The first interview was conducted on the 5th of September, 2020 and the last one on the 24th of November, 2020. The recording of all 17 interviews had a duration of approximately 17 hours; the shortest took around 42 minutes and the longest one around an hour and a half. Using NVIVO software version 20, it took around 137 hours to transcribe the interviews into 130,540 words.

5.6. Data analysis

Thematic analysis was used to perform data analysis of this phase. Thematic analysis is an approach that is used to identify, analyse, and report themes within given data (Braun & Clarke, 2006). That is, the data set is organised and described in rich detail. Similarly, Fereday and Muir-Cochrane (2006) define thematic analysis as a type of a pattern recognition within a data set in which themes emerge and become categories for data analysis. Thematic analysis is widely used among qualitative researchers, but they often do not refer to it as such in the analysis method used. Braun and Clarke (2006) argue that many analyses are basically thematic, but it is claimed to be something else such as discourse analysis or content analysis. Further, for qualitative scholars thematic analysis is considered one of the most common and suitable methods for data analysis (Guest et al., 2011; Vaismoradi et al., 2013). The six-phase guide for thematic analysis given by Braun and Clarke (2006) was followed to conduct the analysis here (see Table 20). The researcher carried out the thematic analysis and its phases were reviewed by the principal supervisor.

To undertake the analysis, NVIVO version 20 was a helpful Qualitative Data Analysis Software (QDAS) and Computer Assisted Qualitative Data Analysis Software (CAQDAS) tool to visualise and explore the data. It is known by qualitative researchers who engage in QDAS or CAQDAS that NVIVO is one option that assists in sorting, organising, and analysing qualitative data (Jackson & Bazeley, 2019). Lastly, using CAQDAS in analysing qualitative data is very useful as it helps in transcribing, storing, sorting, editing, and coding the data (Yin, 2015). By having all data together in one place, the process of transcribing, sorting, and editing meant that keeping track of the data could be done easily and quickly (Kvale & Brinkmann, 2009).

Table 20. Phases of thematic analysis (Braun & Clarke, 2006, p. 87)

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

5.6.1. Thematic analysis: Step by step

The first phase of the analysis, *familiarizing yourself with your data*, started when the researcher began transcribing the first interview once it was finished, and then continued to transcribe the other interviews in the same time-frame as conducting other interviews. Even though the transcription process was time-consuming, it was an excellent way of getting familiar with the data (Riessman, 1993).

Transcribing the first interview right after it was done helped in having a closer look at the data, which was in essence of becoming familiar with it. It also helped in organising the transcripts (Jackson & Bazeley, 2019). No data was moved around the transcripts or deleted during this process; it was just a technique of organising the transcripts. At the beginning, as there were several sections in the Interview Guide (further rapport development, grand tour and introducing, organisational culture, FFM personality traits, e-government use and its related sub-sections, demographic information, and closing section), the researcher divided the transcript into these main sections. However, it was then realised that it would be more helpful and easier to explore and track if the main sections – organisational culture section, FFM personality traits, and e-government use and its related sub-sections – were broken into sub-sections. That is, the researcher separated each of the cultural dimensions into individual sections: power distance, individualism, and so on. Further, each of the FFM personality traits sections were broken into separate sections: conscientiousness, agreeableness, and so on. Furthermore, each of the e-government use and related sections were broken into separate sections: e-government use, perceived transparency, and so on. By organising the transcripts in this way, it was more convenient and easier to track when it came to doing the later data analysis (Yin, 2015).

Since all interviews were only audio recorded, during the transcription the researcher tried to transcribe every detail in the audio as was salient in the context (Gorden, 1980) – verbatim, laughing, pauses, deep inhale, exhale, clearing throat, tone of voice, sounds, and use of punctuation – as they could alter the meaning of the content (Braun & Clarke, 2013; Liamputtong, 2012; Poland, 2001; Rapley, 2003). These details helped make better sense of the interviews, which ultimately assisted in performing the data analysis (Liamputtong, 2012). It gave the researcher the exact feelings and emotions of how words, sentences, or statements were being said. Further, it helped the researcher picture the state of body language, as this was important in understanding what was the participants were feeling when they gave their responses. For example, if asking about power distance, a deep inhale and exhale with a specific tone of voice indicated frustration with the large power distance and degree of centralisation within the participant's organisation. Besides expressing their feelings and emotions in words, these added details helped with the analysis, as not all emotions and feelings can be expressed in words.

As these initial ideas were being generated, through repeatedly going back through the transcripts and becoming familiar with the depth and breadth of the data, the ideas were flagged to help return to later (Braun & Clarke, 2006). The qualitative data analysis was undertaken as three main concurrent flows of activity: data reduction, display, and drawing of conclusion (Miles & Huberman, 1994). The second phase, *generating initial codes*, involved a process of data reduction in which data was gathered to form initial codes. As this study employed a mixed methods design (in which the qualitative phase explained the results of the theoretical model) to benefit and enrich the study (Johnson et al., 2007). Theoretical “deductive approach” (Boyatzis, 1998) or theory-driven method was employed in which the data was approached with specific questions that the data had been coded around (Braun & Clarke, 2006).

The process of coding, which is an important part of the analysis (Miles & Huberman, 1994), was done systematically for all interviews so that full and equal attention was given to each data item (Braun & Clarke, 2006). The transcript of each interview was approached individually. The researcher coded as many potential codes as possible as these might be interesting in subsequent phases. Initial codes were generated starting with the first interview. Most of them were generated in the first five interviews, whereas the rest of interviews were just assigning the data to the relevant codes. Several new codes were identified in the sixth to eighth interviews in which no new codes were identified after that, information redundancy (Lincoln & Guba, 1985). More details about how saturation was reached are provided later in this section. The number of initial codes and sub-codes recorded from the first five interviews was 56 (with two sub-codes), whereas the number of codes recorded from the sixth to eighth interview was five. Therefore, the total number of initial codes generated was 61. Table 21 illustrates examples of coding.

Table 21. Examples of coding

Data extract	Coded for
<p><i>"Yes, it is very centralised from the headquarter."</i> (MM)</p> <p><i>"Yes, we have centralisation here, the power is at the top management, absolutely."</i> (JA)</p> <p><i>"I do not think it is decentralised." ... "I have to get permission from the head of the department."</i> (AM)</p>	Centralisation
<p><i>"I work as I told you we check out the system at the beginning and then move to the daily tasks that we have to cover." ... "I found this kind of system is covering all the tasks that should be done though the system."</i> (AQ)</p> <p><i>"And now what they did like for all Saudi Arabia, we have one common system for all kinds of purposes for the organisation that I am working at."</i> (AJ)</p> <p><i>"Now, as a percentage ... how much work is based on system?" (Researcher)</i> <i>"Aaah [pause] I would say more than 90%."</i> (HM)</p>	High level of use
<p><i>"Yeah of course, that is one of the advantages of having system monitored and having internal control and having all these things in place." ... "So, will stop people from doing bad things or let us say wrong thing."</i> (AM)</p> <p><i>"It is easy now for us to apply anything in the rule."</i> (AJ)</p> <p><i>"I like it, I like it to be honest, I like when someone is watching you while you are working, you are going to do your best."</i> (MT)</p>	Positive perception "Compliance"

The approach adopted to coding was based on the syntactic unit, including sentence, paragraph, or even a whole message (Rourke et al., 2000). The use of sentences as a unit of analysis is logical as sentences are just what interviewees produce to convey their ideas (Fahy, 2001), and it allowed the researcher to code all transcript components (Fahy, 2002). In the coding, individual extracts of data were coded under different codes as they fit (Braun & Clarke, 2006). For example, if the interviewee was asked about whether employees prioritise work over relationships or not – a question related to individualism/collectivism culture – the participant said *"work is more important than the relationship, so work is very important, you have to do what your manager asks you to do"* (MM). Besides stating that work always comes first, he mentioned that employees must do what they are asked to do by their managers so that the degree with which the employee can push

back is very low, which is an obvious sign of a restraint culture. Therefore, this piece of data was coded twice, one related to individualism culture, “work is prioritised over relationships”, and again with restraint culture, “maintaining orders”.

The third phase, *searching for themes*, started when the relevant codes were gathered together to form more holistic themes. In this phase the data was summarised in a complete and meaningful way. In terms of theme searching, the number of instances does not necessarily mean that the theme is crucial; it is more about the theme itself (Braun & Clarke, 2006). In this context, when gathering codes to form themes, four codes were disregarded: “not always achievement-oriented”, “not always like to acquire knowledge”, “risk takers”, and “not usually being cooperative”. As mentioned above, during the coding process as many potential codes as possible were coded. When it came to theme searching, the researcher noticed that the above codes appeared only once. This is not to say that a single or few instances cannot be of interest (Bryman, 1988), however it is essential not to misrepresent them as a holistic theme (Braun & Clarke, 2006). These deleted codes, since they were only mentioned once, were deemed not important and were disregarded.

On the other hand, three codes – “system circumvention”, “personal values”, and “system design” – became sub-themes. Even though one of them, “system circumvention”, appeared only twice, it was crucial to the theme of perceived accountability, since one of the main objectives of the qualitative phase was to explain the relationship between perceived transparency and perceived accountability. This sub-theme was important as it represented another point of view of the participants. Even though the other two sub-themes were more frequent than “system circumvention”, these three sub-themes were new crucial insights that the participants brought. Besides explaining how by being aware that their work on e-government systems was being monitored affected their compliance with rules and policies, they mentioned that sometimes the design of the systems played an important role in increasing employees’ compliance. Some participants also stated that they comply with rules and policies not only because they know the system is monitoring them, but because of their own values. Thus, it can be seen why these three important codes became sub-themes.

In the fourth phase, *reviewing themes*, the initial themes, sub-themes, codes, and sub-codes were carefully reviewed until an overall set of themes and sub-themes

were generated that completely accounted for each data item. The analysis resulted in 22 themes, 10 sub-themes, 54 codes, and two sub-codes. A summary of the themes, sub-themes, codes, and sub-codes, along with their frequencies, is provided in Table 22. The table shows the 22 themes in bold on the left, and the codes on the right. The column headed “participant” gives how many participants mentioned that code the number of participants, and the column headed “count” provides the number of times that particular theme, sub-theme, or code was mentioned across all 17 participants.

Table 22. Themes, sub-themes, codes, sub-codes, and their frequencies

Theme		Code		
Name	Count	Name	Participant	Count
Large Power Distance	86	Centralisation	17	38
		Importance of hierarchical structure	14	23
		Use of authority	10	13
		Power abuse	8	12
Medium Power Distance	6	Centralisation based on department	4	6
Individualism	49	Conflict with employer's interests	8	9
		Weak relationships	2	2
		Prioritising work	14	26
		Work-based relationships	6	12
Collectivism	34	Strong relationships	13	15
		Lobbying	5	10
		Prioritising relationships	5	9
Indulgence	21	Enjoying work	13	17
		High freedom of speech	4	4
Restraint	69	Maintaining orders	17	31
		Low freedom of speech	15	31
		Work not enjoyable	4	7

High Uncertainty Avoidance	75	Not being comfortable accepting change	14	34
		Not being risk takers	10	13
		Being rule-oriented	14	28
Low Uncertainty Avoidance	8	Accepting change	8	11
Long-term Orientation	32	Being future-oriented	15	23
		Perseverance	9	9
Short-term Orientation	8	No future planning	5	8
Femininity	53	Showing and sharing emotions	15	26
		Working cooperatively	14	27
Masculinity	10	No showing or sharing emotions	7	8
		Being strong	2	2
High Conscientiousness	50	Achievement-oriented	15	20
		Determined and organised	6	8
		Acquiring knowledge	17	24
Medium Conscientiousness	3	Not always determined and organised	3	3
High Agreeableness	39	Compliant	11	14
		Cooperative and helpful	17	25
Medium Agreeableness	4	Not always compliant	3	4

High Extraversion	50	Positive emotions	15	24
		Striving to get things done	9	10
		Standing up for themselves and others	10	16
Medium Extraversion	7	Not usually stand up from myself	7	7
E-government Use	111			
Sub-themes	Count	Name	Participant	Count
Level of use	64	High	16	43
		Medium	2	5
		Low	3	16
Experience	29	Positive	12	24
		Natural	4	5
Resistance	18	High	12	16
		Low	2	2
Perceived Transparency	80			
Sub-theme	Count	Name	Participant	Count
Awareness of being monitored	47	Aware	16	44
		Partially aware	2	3
Feeling of being monitored	33	Positive	10	15
		Sub-code	Participant	Count
		Proof of work	7	13

			Negative	1	1
			Sub-code	Participant	Count
			Privacy concern	2	4
Perceived Accountability	56				
Sub-theme	Participant	Count	Name	Participant	Count
Accountability as a result of transparency		54	Positive perception	14	31
			Natural perception	13	23
System Circumvention	2	2			
Self-Reported Compliance	73				
Sub-theme	Participant	Count	Name	Participant	Count
Compliance as a result of transparency		47	Positive perception	9	20
			Natural perception	15	27
Personal values	5	8			
System design	8	18			

At this point, it is appropriate to discuss the concept of saturation. Saturation is considered to be a nebulous concept that lacks systematisation (Bowen, 2008). Even though the researcher noticed that no new insights were provided after the eighth interview, so that information redundancy became obvious, in each new interview the interviewer tried to dig more into several points regarding perceived accountability and self-reported compliance. After explaining how employees were held accountable because of their use of the systems and how they complied more because of their use of the systems, questions were then asked for which no new ideas or thoughts arose. These questions were *“Besides using the systems, are there any other reason(s) where employees could be held accountable? Could you please name some?”* and *“Is there any other reason that would make employees comply with the rules and regulations? Could you please name some?”* That is, after the eighth interview, all new participants did not provide any information or insights that the researcher has not already heard from previous participants. However, to ensure saturation had been reached (Saunders et al., 2018), a systematic test for saturation (Bowen, 2008) was carried out (see Table 23 and Table 24), where participants are presented in sequential order. That is, MM was the first participant with whom the interview was conducted, HJ was the second, JA was the third, and so on.

As can be seen from these tables below, codes relating to every theme had already been identified by the eighth interview, after which information redundancy (Lincoln & Guba, 1985) started to take place. The asterisk symbol (*) indicates that this is a new theme or code. One check mark (✓) indicates that the participant only mentioned that theme or code only in passing, meaning that they mentioned it but did not contribute additional detail or depth, and two check marks (✓✓) indicate that the participant placed more emphasis on that theme or code and participant provided additional detail or depth.

Table 23. Systematic test for saturation for top level themes

Participants/ themes	Large PD	Medium PD	Individualism	Collectivism	Indulgence	Restraint	High UA	Low UA	Long-term orientation	Short-term orientation	Femininity	Masculinity
1) MM	* √√		* √√	* √	* √	* √√	* √√	* √	* √√		* √√	* √
2) HJ	√√		√√	√		√√	√√	√	√√		√	√
3) JA	√√		√	√√	√	√√	√√		√√		√	√√
4) ZH	√√		√√	√	√	√√	√	√√	√√		√√	
5) MH	√√		√√	√	√	√√	√√	√	√√		√√	√
6) YR	√√			√√	√	√√	√√		√√		√√	
7) AH	√√		√√	√	√	√√	√√		√√		√√	
8) IA	√√	* √√	√√	√	√	√√	√√		√	* √√	√√	
9) YT	√√			√√	√	√√	√√		√√		√	√√
10) AQ	√√		√	√√	√	√√	√	√√	√√	√	√√	
11) AS	√√	√	√√	√	√	√√	√√		√	√	√√	√
12) AM	√√	√	√√	√	√	√√	√√	√		√√	√	√√
13) HF	√√	√	√√	√	√	√√	√√		√√		√√	
14) AJ	√√		√√	√	√	√√	√	√√	√√		√	√
15) HM	√√		√√	√	√	√√	√√		√√		√√	
16) MT	√√		√√	√	√	√√	√√		√	√√	√√	
17) MR	√√		√√	√	√	√√	√√	√	√√		√√	

Participants/ themes	Medium Conscientiousness	High Conscientiousness	Medium Agreeableness	High Agreeableness	Medium Extraversion	High Extraversion
1) MM		* √√		* √√		* √√
2) HJ		√√		√√		√√
3) JA		√√		√		√√
4) ZH	* √√			√√		√√
5) MH	√√			√√	* √√	
6) YR	√√			√√		√√
7) AH		√√	* √√		√√	
8) IA		√√		√√		√√
9) YT		√√	√√			√√
10) AQ		√√		√√		√√
11) AS	√√			√√		√√
12) AM		√√	√√		√√	
13) HF		√√		√√	√√	
14) AJ		√√		√√	√√	
15) HM		√√		√√	√√	
16) MT		√√		√√		√√
17) MR		√√		√√		√√

Table 24. Systematic test for saturation for top and sub-level themes

Participants/ themes, sub- themes & codes	E-gov. Use							Perceived Transparency						
	Level of use			Experience		Resistance		Awareness of being monitored		Feeling of being monitored				
	High level of use	Medium level of use	Low level of use	Positive experience	Neutral experience	High	Low	Aware of being monitored	Partially aware of being monitored	Positive feeling	Positive feeling: Proof of work	Natural feeling	Negative feeling: Privacy concern	Negative feeling
1) MM	* ✓✓				* ✓✓	* ✓✓		* ✓✓		* ✓✓		* ✓		
2) HJ	✓✓			* ✓✓		✓✓		✓✓					* ✓✓	* ✓✓
3) JA	✓✓			✓✓		✓✓		✓✓		✓✓				
4) ZH	✓✓			✓✓			* ✓✓	✓	* ✓✓	✓✓	* ✓✓			
5) MH	✓✓			✓✓		✓✓		✓✓		✓✓	✓✓	✓		
6) YR	✓		✓✓					✓✓				✓✓		
7) AH	✓	✓✓		✓✓		✓✓		✓✓				✓✓		
8) IA	✓✓				✓✓	✓✓		✓✓		✓✓				
9) YT	✓		✓✓	✓✓		✓✓		✓✓		✓✓	✓✓	✓		
10) AQ	✓✓				✓✓		✓✓	✓✓		✓✓	✓✓		✓✓	✓✓
11) AS	✓✓			✓✓		✓✓		✓✓		✓✓	✓✓			
12) AM	✓✓				✓✓	✓✓		✓✓		✓✓	✓✓	✓		
13) HF	✓✓			✓✓		✓✓		✓✓		✓✓	✓✓	✓		
14) AJ	✓✓			✓✓		✓✓		✓✓		✓✓				
15) HM	✓✓		✓✓	✓✓		✓✓		✓✓				✓✓		
16) MT	✓			✓✓		✓✓		✓✓		✓✓		✓		
17) MR	✓		✓✓	✓✓					✓✓			✓✓		

Participants/ themes, sub- themes & codes	Perceived Accountability			Self-reported compliance			
	Accountability as a result of transparency		System Circumvention	Compliance as a result of transparency		Personal values	System Design
	Positive perception	Natural perception		Positive perception	Natural perception		
1) MM	* √√	* √			* √		* √√
2) HJ	√√	√			√		√√
3) JA	√√	√		* √√	√		
4) ZH	√√	√			√	* √√	
5) MH	√√	√	* √		√	√√	
6) YR					√√		
7) AH	√	√√			√	√√	√
8) IA	√√			√√	√		
9) YT	√√		√	√√	√		√
10) AQ	√√			√√	√		
11) AS	√√	√			√	√√	√
12) AM	√√			√√			
13) HF	√√	√		√√	√	√√	√
14) AJ	√√	√		√√			√√
15) HM		√√		√√	√		√
16) MT	√√	√		√√	√		
17) MR		√√			√√		

After reviewing and identifying suitable themes and sub-themes, in the fifth phase, *defining and naming themes*, themes were given proper names in which each theme was defined so as to provide an illustration of what each theme and sub-theme was about – what each captured. Essentially, the themes corresponded to relevant data that described each single theme which identified the purpose of the theme with regard to the research questions. The definitions of each theme and what they mean are as follows:

Since this study focuses on government organisations in which the unit of analysis was the government employee, the definitions here are related to the organisational culture.

Culture related themes

Large Power Distance means that the organisation tends to be more centralised where power is only in a few hands and hierarchical structure is highly respected. Power is distributed unequally, so employees have to do what they are told and the degree to which they can push back is very low. Power abuse is also present in several cases.

Medium Power Distance consists of most characteristics of large power distance culture where hierarchical structure is highly regarded, and power is more centralised. The main difference here is that centralisation is based on the department. That is, within some departments, power is somewhat decentralised, but in general power is centralised across the whole organisation.

Individualism is a culture where individuals in the organisation tend to look after themselves. For them, work is more important than relationships. This does not mean they do not have relationships; they do, but they are more like a work-based relationship.

Collectivism culture, which is the opposite of individualism culture, is a relationship-based culture in an organisation where relationships are very strong. Individuals prioritise their relationships over work. Lobbying is very common in the organisation.

Gratification in **Indulgence** culture is allowed where employees tend to enjoy their times at work. Freedom of speech is also allowed where employees can express their feelings with no fear.

Gratification in **Restraint** culture tends to be limited so that maintaining orders is almost a must and the probability to push back is very low. Employees do not enjoy their work most of the time as they are in a very tight culture where gratification is curbed by social norms. Freedom of speech is low and not accepted because superiors do not accept being criticised.

Employees in **High Uncertainty Avoidance** culture do not feel comfortable accepting change, so they do not tend to take any work-related action unless they are sure it is the right thing to do. They are rule-oriented, meaning that if they have to do something that is not by rules, they do not do it.

Employees in **Low Uncertainty Avoidance** culture feel comfortable accepting change. They also tend to be risk takers so that sometimes they do the work based on what they think is right and good for the organisation without checking details of the rules and policies.

Long-term Orientation means employees in this type of culture are future oriented so that they give up today's fun for their own future. Perseverance is common in the organisation, so employees tend to improve themselves as a way to make tomorrow better.

As the opposite of long-term orientation culture, **Short-term Orientation** employees mostly tend to think about the present; they do not plan much for the future, and they do not try to work for the future or improve themselves.

Femininity is a type of culture where emotions and feelings are commonly shared within the organisation and between employees. The employees tend to be more cooperative so they help each other with work.

Masculinity, which is the opposite type of culture to femininity, is a culture where employees tend to be tough. Emotions and feeling are not commonly shared with other employees unless they are very close in terms of relationship.

FFM Personality traits related themes

High Conscientiousness individuals are described as more organised and determined so they always strive to finish what they started. Additionally, they need to achieve and learn.

Medium Conscientiousness individuals are described as less organised and determined so they do not always finish what they started. Additionally, achievement and learning are not always needs for them.

High Agreeableness individuals are always very helpful and cooperative so they are willing to provide help and give to others as they are helpful in nature. They also tend to easily comply with organisational rules and policies so they follow their superiors' orders.

Medium Agreeableness individuals are always very helpful and cooperative. They are willing to provide help and give to others as they are helpful in nature. However, when it comes to following orders, they usually do exactly as told unless they think it is not the right thing to do.

High Extraversion individuals are assertive so they strive get to things done and stand up for themselves and sometimes for others. They tend to have positive emotions.

Medium Extraversion individuals are assertive and strive to get things done. However, when it comes to standing up for themselves if their work is taken over by others, they usually try to avoid conflict. They tend to have positive emotions as well.

E-government use related themes

Electronic Government Use (E-gov. Use) means use of electronic systems or internet applications by employees in doing their own work. It is characterised by three main aspects (sub-themes): *level of use, experience, and resistance*. As the essence of this study is e-gov. use, participants were categorised into three main categories – high, medium, and low.

High level of e-gov. use means most, if not all, of the employee's work is done through electronic systems, whereas *medium level of use* means part of the employee's work is done through the electronic systems and other smaller parts are done through paperwork (this work eventually gets into the systems but not from the employees' end – that is, the work is sent to another department). A *low level of e-gov. use* means most of the employee's work is not done through electronic systems although employees do use emails, phone calls, paperwork, and occasionally e-gov. systems to get things done. These employees use e-gov. systems as defined above several times a week.

Experience with e-gov. systems was categorised into two categories, positive and neutral. As reflected by their names these categories do not require further explanation as they simply capture the experience the employees use with the systems at their work. No negative experience was added as a category within this sub-theme because none of the participants had a negative experience with their systems at work. Lastly, *resistance* means whether employees were comfortable accepting or resisting use of these electronic systems.

Perceived Transparency means the extent to which the employees perceive that their work is being seen or monitored by others within the organisation, and how they feel about it. The two main characters (sub-themes) are the *awareness* and *feeling* of being monitored so that employees either perceive it positively (as a proof of work), or negatively if they have a concern about their own privacy.

Perceived Accountability means the extent to which the employees are expected to be asked to justify their actions. The main aspect here is whether the *employees perceive* that they can be held *accountable as a result of being monitored (transparency)* through their use of e-gov. systems. Another aspect is whether systems at work can be *circumvented* to avoid accountability or not. That is, whether the employees were able to do their work or not through the systems.

Self-Reported Compliance means to what extent the employees are inclined to adhere to rules and regulations established by their organisations. Similar to perceived accountability, the main aspect here is whether the *employees comply with rules and regulations as a result of being monitored (transparency)* and how *employees perceive* it. Further, personal values and system design are another two aspects (sub-themes) that drive the compliance of the employees. *Personal values* mean the employees' behaviour and attitude that motivate them to comply with the rules and regulations. *System design* means to what extent the systems are created and designed to increase the compliance of the employees.

To ensure that the process of thematic analysis was carried properly, the 15-point checklist of criteria for good thematic analysis (Braun & Clarke, 2006) was closely consulted during the whole process of the analysis (see Table 25).

Table 25. A 15-point checklist of criteria for good thematic analysis (Braun & Clarke, 2006, p. 96)

Process	No.	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed - interpreted, made sense of - rather than just paraphrased or described.
	8	Analysis and data match each other - the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organized story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.
Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done - ie, described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as <i>active</i> in the research process; themes do not just 'emerge'.

The next section presents and discusses the findings of this phase.

5.7. Findings and discussion

The purpose of the qualitative phase was to give a rich understanding and explanation of the model identified in the quantitative phase. The discussion section in the previous chapter also identified the need to investigate the role of personality and the characteristics of the individuals. This section consists of two main sub-

sections. First, Section 5.7.1 draws on the interview data to confirm, validate, and illustrate the quantitative model identified in the previous phase. Then Section 5.7.2 presents and explains new insights identified during the analysis of the data contributed by the participants.

5.7.1. Confirming, validating, and explaining the quantitative model

Cultural related hypotheses

H1a:

The first hypothesis, for which the quantitative phase failed to find support, predicted that a large power distance culture would positively influence the use of e-government systems within government organisations. That is, in a large power distance culture, it is difficult for subordinates to withstand calls to use e-government systems as members expect to be told and supervised (Hofstede et al., 2010), meaning that large power distance cultures lead to increased use of e-government systems. Even though this study could not find evidence of H1a in the quantitative data, given that a number of other studies have concluded such a relationship exists, we cannot discount it, especially since the variant model in the quantitative data found support for such a hypothesis. Therefore, further research was conducted in this stage to explore this issue further.

In order to explain this relationship in the participants' words, the researcher first explored whether power distance of the participants' organisations was large or not. It was found that almost all participants' organisations were large power distance cultures (see Table 23). All responses strongly emphasised the characteristics of large power distance culture (Hofstede et al., 2010): centralisation, importance of hierarchical structure, use of authority, and power abuse, with few exceptions as will be illustrated.

Table 22 shows that almost all 17 participants stressed the fact that their organisations were highly centralised. Examples of participants' comments on centralisation are shown below:

“The orders come from the headquarter, and we have to follow the rules from the headquarter ... yes, it is very centralised from the headquarter” (MM).

“Usually, the manager the dean ... everything goes back to the dean ... wants to go through her, she wants to know everything about what happens around her” (ZH).

While in most cases organisations were centralised, there were a few cases in which participants mentioned that their own department was somewhat decentralised where delegation was present. However, centralisation was common across the entire organisation, as can be seen in the following comment:

“I do not think it is decentralised ... I have to get permission from the head of the department, and sometimes it depends on the tasks, the head of the department has to aaah [pause] like get the permission from the vice dean ... I enjoyed working with students’ affairs because the dean himself likes to give permission or let us say authorization ... because it is, it just makes sense, if you are, let us say, a supervisor of a business club¹, you do not have time to wait for someone to give permission” (AM).

As one can see, the participant mentioned she does not think her organisation is decentralised. However, she then mentions that she enjoys working at that particular department because they give her room to make decisions, which means that other departments tend to be more centralised.

When the participants were asked about the hierarchical structure, they mostly emphasised the importance of it and gave examples of how their organisations were highly structured, as illustrated in the following comment:

“Yes, here we are a typical organisation, a typical public organisation ... the hierarchy is very important ... so, usually we have the pyramid, we have three levels, we have the high management, the general manager at the top, and we have the middle management, and we have the lower managers” (JA).

In fact, one of the female participants, besides stating that hierarchy in her organisation was important, gave a justification of why it is normal for public organisations to be highly structured:

“In our kind of work, I think it is important ... it is important to have aaah [pause] let us say a clear vision of people you are referring to ... we are not

¹ An investment and development centre that enables the private sector to benefit from the services that an institution provides.

project based organisation, we have different kind of work, so we need hierarchical structure” (MH).

With regard to the last two codes within the large power distance theme – use of authority and power abuse – participants were not asked about them as it is a difficult subject to raise without causing distress, but since the conversation was about centralisation and hierarchical structure, participants, if they felt comfortable, opened up and shared their own experience about the use of power and inequality with the interviewer. For example, some interviewees provided the following statements:

“Yeah, you could work hard, but then as I said, your work or your hard effort could be actually written under someone else’s name ... as I said, they got the power, they are in the power, they could even waive your signature” (YT).

“The power used to be, I am not going to say like, aaah [pause] sometimes used to be used like in a wrong way ... you know, to show their power” (AQ).

To summarise, participants felt power distance to be large, and it allowed managers to mandate the use of e-government systems. Power was generally centralised, and perhaps not even in the same location or branch. If headquarters are somewhere else, they might feel quite remote from the source of power. Sometimes that power was abused. But some participants were at least fairly accepting of the need for hierarchy. When participants were asked about their experience in regard to applying new rules or policies in general, and specifically about using new systems, their responses were that they had to/must do what they were asked to do, and this is evidence that supports and explains the predicted hypothesis. The following comments illustrate such a response:

“You know Mr. Abdullah because of the top management has the power ... so, they can stop the old system and they will force the employees to use the new one” (MM).

“Yeah, you cannot say no” (HM).

H1b:

The second hypothesis, for which the quantitative phase found support, predicted that individualist culture would positively influence the use of e-government systems within government organisations. Individuals in this type of culture are more likely to

prioritise work over their relationships so that they are more work-oriented. When it comes to the conflict between employees' and employer's interests, the employer's interests win (Hofstede et al., 2010). Therefore, both managers and their employees are likely to prefer to use e-government since organisational goals are the priority of both managers and their subordinates, meaning that individualist cultures lead to increased use of e-government systems.

When exploring this type of culture, it was found that most participants' organisations had relatively individualist cultures (see Table 23). Most responses emphasised the characteristics of individualist culture (Hofstede et al., 2010), prioritising work, work-based relationships, weak relationships, conflict with employer's interests, with few exceptions (as will be provided). A key point here is that it is the respondent's organisation that this study is looking at here, not the country as a whole, which is known to be a collectivist culture. Based on the analysis of the aspects related to individualist cultures mentioned above, it can be concluded that the employees' organisations were relatively individualist. This is not saying the whole country is. One man's individualism might be another man's collectivism, as their background will influence how they see things.

When participants were asked about whether work was more important than relationships or not, while stating that they had good relationship (see Table 22), most participants emphasised that work was more important, whereas a few participants highlighted the collectivism culture in which they stated that relationships were more important to them. Below are examples of interviewees' comments:

"The work is more important than the relationship, even if they are brothers, and they work in the same department" (MM).

"Um [long pause], I think from what I noticed, from my experience with the department ... aaah [pause], I noticed most of the time, they put work first" (HF).

"Yeah, the work is the priority" (AH).

"Unfortunately, unfortunately, they prioritise their relationships" (JA).

Interviewees also emphasised that their relationships with others tended to be a work-based relationship in which sometimes the ties between them were considered weak. The following are examples of participants' statements:

I think, aaah [pause], generally speaking, aaah, we have healthy relationships ... and some people are more, aaah [pause], colleagues or work mates ... it is more professional" (MH).

"But, with the above, like my manager, and aaah [pause] administration people, it is kind of weak relationship" (AH).

When the participants were asked about whether there was a conflict between employees' interests and employer's interests, and which one they go with, they stressed that they put the employer's interests first, a clear characteristic of individualist culture, as illustrated in the following comments:

"Yes, aaah [pause] absolutely, work comes first" (MR).

"Yeah, work wins, yeah" (IA).

Based on the participants' responses related to individualism/collectivism culture, their comments show that most organisations were considered to be more toward individualist culture. When interviewees were asked about using e-government systems in this type of culture (which tend to be more work-oriented and where the employer's interests are a priority over their own interests), they stated they would use e-government systems because they bring more efficiency to work and get it done, which confirms and explains the predicted hypothesis. The following is an example of interviewee' comments:

"More efficiency, we can finish meaning, if we are going to finish 10 jobs in a week ... we can finish it in one day, for a job that takes a week" (AJ).

H1c:

The third hypothesis, for which the quantitative phase also found support, predicted that restraint culture would positively influence the use of e-government systems within government organisations. Individuals of this culture tend to maintain orders and be controlled so they do not have much room for freedom of speech (Hofstede et al., 2010). Therefore, since maintaining orders is a priority, when employees are asked to use e-government systems, they do so because it is difficult for them to go

against orders from their superiors, meaning that restraint cultures lead to increased use of e-government systems. Upon exploring whether participants' organisations were more toward restraint or indulgent culture, as with power distance, all responses stressed the characteristics of restraint culture (Hofstede et al., 2010) (see Table 23): maintaining orders, low freedom of speech, work not enjoyable.

To a large extent participants emphasised that following orders was required in their organisations and because employees were controlled it was less likely that they could push back, as illustrated in the following comments:

"Yeah, it is very important for all of the employees to follow the orders" (MM).

"There are very strong rules and very aaah [pause] there is more control" (IA).

Even though freedom of speech might be a sensitive topic, and employees, to be on the safe side, generally tended to avoid talking about it, most of the participants, if they felt comfortable during the interview, shared their experience and frustrations about such a restraint culture, as noted in the following statements:

"You have to present it in a good way, so they do not take it like personally, you know ... but if it is as is, the situation, just explaining how bad it is, and you also say it badly" (AM). "It is going to ruin your life" (Researcher). "... yeah, I mean even your life outside the work hehh [laughing] it is not just at work ... so, you have to be so careful with people, like, knowing their personality first, and then um [long pause] see if it is, sometimes you have to skip some people to go to another person who is really open and can help more than the person ... with authority ... because, yeah, because they do not accept it when you say negative feedback they feel you are offending or something" (AM).

"Aaahh [exhales deeply], I want to say yes ... I do not think so ... it is not easy to do so" (HM).

Other participants stated that they had freedom of speech, but only between each other as employees. That is, they do not speak up, meaning they do not go to their managers and say what they want to say:

"I mean, some employees will complain between aaah [pause] each other, yeah ... but they will not say that" (AS).

Although those participants mentioned that they enjoy their times between each other at work (which might be a sign of an indulgent culture), when it came to maintaining orders and freedom of speech, it is clear, as noted above, that restraint culture was the most dominant. In this type of culture, if employees are asked to use e-government systems, they would have to, as following orders is a priority and the likelihood of pushing back is very low. When interviewees were asked this question specifically, one of them said “Yes, *definitely*.” (HJ), which validates and explains the predicted hypothesis. Another participant provided the following statement:

“I do not think so yeah, it cannot be discussed ... it is just an order, and you have to follow” (AH).

H1d:

The fourth hypothesis, for which the quantitative phase did not find support, predicted that a low uncertainty avoidance culture would positively influence the use of e-government systems within government organisations. Individuals in this type of culture tend to freely accept change. They also believe that rules can be changed as rules are made to help achieve organisational goals (Hofstede et al., 2010). When it comes to getting work done, members in this type of culture may use any tool/technology to do so. Therefore, they are likely to prefer to use e-government systems since change is welcome; since they can use any technology to achieve their goals, a low uncertainty avoidance culture leads to increased use of e-government systems. When exploring this type of culture most participants emphasised characteristics of high uncertainty avoidance (Hofstede et al., 2010): being rule-oriented, not being risk takers, and not being comfortable accepting change (as will be illustrated).

When participants were asked about whether they work by rules or not, they emphasised that they were rule-oriented. That is, if performing their job and a request comes along, they would get that request done based on exact rules. Examples of their responses were as follows:

“Generally speaking, in the organisation it is rule oriented ... you have to follow strict rules” (HJ).

“No, they will not, they will not take the risk, they will ask ... no, they will ask about everything” (IA).

It was also clear that most participants were not comfortable accepting change, as noted in the following comment:

“Yeah, we are going to have a change resistance in this case ... most people will refuse it actually” (JA).

In contrast, some participants said that employees in the organisation accepted change. The researcher took this opportunity to ask those interviewees, who tended to be within a low uncertainty avoidance culture, about using e-government systems – since most participants’ organisations (based on their responses as can be seen above) were considered as high uncertainty avoidance culture. When interviewees were asked if they would use e-government systems in this type of culture where change is welcome, they said that they would go for it, which is evidence that supports and explains the predicted hypothesis. In fact, some of them provided reasons. The following is an example of a participant’s comment:

“Yes, absolutely, for example, COVID-19 changed everything ... no there was no resistance ... I felt like they accepted the change ... something that brings benefits to the college, to the students, they accept that” (ZH).

H1e:

The fifth hypothesis, which the quantitative phase found support for, predicted that long-term orientation culture would positively influence the use of e-government systems within government organisations. Individuals in this type of culture tend to look more into the future so that building strategies, change, and perseverance are encouraged (Hofstede et al., 2010). Since ICTs such as e-government systems offer more benefits, members tend to have a positive attitude toward using them. Employees are likely to prefer to use e-government, meaning that long-term orientation cultures lead to increased use of e-government systems. When exploring this type of culture, it was found that most participants’ organisations belonged to a long-term orientation culture (see Table 23). Out of the 17 interviewees, 13 participants were more toward a long-term orientation culture and expressed its characteristics (Hofstede et al., 2010): being future-oriented and perseverance – with few exceptions (as will be provided).

When interviewees were asked about whether they or their colleagues and organisations cared about the future – whether employees tried to improve

themselves and develop their skills and whether organisations provided training courses – they stated that most of the employees and their organisations cared about the future. Persistence was obvious among employees and their organisations supported that, as noted in the following comments:

“Most of them work for their own future and um [long pause] sometimes, you know, they get sad if they are requested to transfer to other area ... because they want to stay with us they want to improve themselves ... and they see the environment is supportive ... each member if he applies for conference or whatever regarding completing his studies ... our head does not refuse any request regarding knowledge, or if someone wants to improve himself ... or wants to complete his studies, he says okay, go ahead, you want to go for conference, meeting regarding improving, he accepts all applications coming to him ... even the employees they do not say, aaah [pause] maybe suffering from shortage of staff or something like that no ... he is always supportive for those who want to go outside and complete their studies, okay!” (HF).

“Yes, they are ... especially now with vision 2030 and the whole new vision coming in and competition is raised, let us say ... different perspective about government employee ... like, before you have job security, so you do not need to worry about anything, now it is more competitive ... so, you have to work on yourself, build your CV um [pause] work on different certificates you can get, yes people are more working toward that more and more” (MH).

“I feel like they care about training workshop, even before, and now more” (ZH).

While most participants emphasised that they were future-oriented and persistent, a few interviewees stressed that they do not see these characteristics among their colleagues, as illustrated by the following comment:

“Aaah [pause], not that much ... there are some training courses which come from the main office as keeping the employees in aaah [pause] ... know about every new rules or something like this ... there is some training, but aaah [pause] if it comes to employees, no, no, not that much, no, only few people” (IA).

When participants whose organisations were within a long-term orientation culture were asked about using e-government systems since they look more into the future, they said that they would use them in which reasons were also given, which validates and explains the predicted hypothesis. The following is an example of interviewees' comments:

“Yeah, the time has come to change, to switch to computerised version or online as you know, the COVID-19” (AJ). “Yeah, so you think that this is a need now right!” (Researcher). “Yeah, sure ... each one has to learn to aaah meaning work with it, that is, deal with it” (AJ).

H1f:

The last cultural hypothesis, for which the quantitative phase did not find support, predicted that feminine culture would positively influence the use of e-government systems within government organisations. Individuals in this type of culture have high regard for quality of life in which they have a balance between work and life. Further, conflict is usually solved through negotiation and settlement. Communication is also important in this type of culture so that members tend to work cooperatively (Hofstede et al., 2010). Therefore, since individuals in this culture focus on communication, avoid conflicts, and seek quality of life, members are more likely to prefer to use ICTs to improve their quality of life (Bagchi et al., 2004). Similarly, it has been noticed that ICTs are more used in feminine cultures since it is a way of facilitating sharing of information and communication between individuals (Gong et al., 2007). One of the main objectives of the use of e-government systems is to provide better communication. Therefore, feminine cultures lead to increased use of e-government systems.

When exploring this type of culture, it was found that most participants' organisations had relatively feminine cultures, contrary to what widely believed (Hofstede et al., 2010) that Saudi Arabia is a masculine culture. It is worth noting that this study is looking at the respondents' organisations here, not the country as a whole. Based on the analysis of aspects mentioned above related to feminine culture, it can be concluded that their organisations belonged to a relatively feminine culture (although this is not saying that the whole country is). Most interviewees emphasised characteristics of feminine culture (Hofstede et al., 2010): showing and

sharing emotions and working cooperatively (with a few exceptions, as will be illustrated).

When participants were asked whether showing and sharing emotions was acceptable and common in their organisations, they said that they do show and share emotions and feelings, and some of them mentioned that it is normal to do so. The following are examples of interviewees' comments:

"Yes, if they are happy or sad, they usually share, we share with each other" (YA).

"A lot hehh [laughing] ... yeah, yeah, yeah I can see, they show" (AQ).

"Yeah, it is acceptable" (AS). *"And, common!"* (Researcher). *"We do share emotions, yeah"* (AS).

A few participants stressed the characteristics of masculine culture, as noted in the following comment:

"Um [pause], it depends with whom and like when and where, as I said, it depends on the person, it is the same with the feedback, and for me I do not like to aaah [pause] express any feeling because I it is just you do not trust people at work hehh [loud laughing]" (AM).

When participants were asked whether working cooperatively was something common or not, they provided the following comments:

"We work as a team you know, everyone works with the others, every department works with the others, you know" (MM).

"I like helping others ... others, my colleagues in the department ... and all of my colleagues are cooperative, helpful ... yeah, yeah, we care about each other, we help each other" (HF).

When participants were asked about using e-government systems in this type of culture where they work cooperatively and value communication, they said that they do use e-government systems to work cooperatively and facilitate communication, which is evidence that supports and explains the predicted hypothesis. One of the interviewees in fact provided a real example of their communication through the systems, as illustrated in the following comment:

“Yeah, actually like um [pause] because we have all systems, information, our communication internally, we all use the electronic systems or e-systems” (HJ).

E-government use related hypotheses

H2:

The second part of the model is associated with Panopticon Theory (Foucault, 1995) and is concerned with the impact of e-government use on perceived transparency, and subsequently on perceived accountability and on self-reported compliance. By using e-government systems, a record of one’s system activity is recorded in the system logs and can potentially be seen. The model in Chapter 4 predicted that e-government use would have a positive impact on levels of perceived transparency within government organisations, and this was supported in the quantitative stage. In order to triangulate and explain this hypothesis in this stage, the researcher first explored the participants’ level of use of e-government; most participants were considered to be within the range of high level of use (see Table 24). Some participants emphasised that the use of e-government systems had increased over recent years, as noted in the following statements:

“Since my beginning here, I have been working here for around 18 years now ... since day one, we have to work through systems, but let us say in last years, aaah [pause] we have now more systems” (JA).

“Yeah, we have the our department system, and we have the full aaah [pause] organisation system ... and now what they did like for all Saudi Arabia, we have one common system for all kinds of purposes for the organisation that I am working at” (AJ).

Although most participants said that their work was mostly done through systems, a few participants mentioned that, from their end, they rarely use their organisation’s system that work is done though the system from their managers’ end or other departments, as illustrated in the following comment:

“Well, usually we do not, I do not use the systems, actually maybe my boss uses them, but aaah [pause] I usually do not use them” (YR).

When participants were asked about their awareness of their work being monitored by others in their organisation, almost all were fully aware of that (see Table 24). In

fact, some of them mentioned that the systems remind them that their work is monitored since the systems show them whatever action they take on the systems is signed by their username. This validates and explains the predicted hypothesis, and the following are examples of interviewees' comments:

“Um [pause], yeah, it is very, all the systems are monitored by the top management, or the general director of the branch or the headquarter, so every employee who uses the system, he is, you know, monitored even his manager. For example, my manager knows about everything I do, so he can ask me, why did you do this? Aaah [pause] please do if I did not do what he requested, he would know by his system that I did not do it ... so, yes, it is monitored ... yeah, yeah, I am aware of that” (MM).

“Yes, every appointment, aaah [pause] whenever I schedule an appointment, it shows that it is scheduled by this person ... so, whenever I schedule an appointment, and if there is a problem, they know that is scheduled by me ... so, they know exactly at what time I scheduled” (AS).

Two participants were partially aware in which they think that their organisations could monitor what they were doing on some of the systems, but not all of the systems, as shown in the following comment:

“Not all the systems I use ... but aaah [pause] some of them yes, they are monitored ... maybe the email ... they can see everything I do; I send, I receive” (MR).

When participants were asked about their feelings of being monitored, interestingly most of them showed positive feelings – some of them mentioned it is a good thing because it is proof of their work (see Table 24). The following are examples of participants' statements:

“Actually, it is good for you if you are being monitored. It means every single move, every single thing you do is considered. It is going to be for your own interests” (YT).

“Aaahh [exhales deeply] it is true I am not afraid of anything if they monitor, but I view it from the point that they have to monitor, so people will be like, you know, they will have aaah good overview of each person and their work.”

(AM) *“Oooh [aha moment], I see, I see, so this a proof that you have done the work.”* (Researcher) *“Yes”* (AM).

Only two participants expressed their negative feeling about being monitored in which they mentioned privacy concerns. The following is an example of interviewees' comments:

“Aaah [pause], hehh [short sarcastic laughing], I do not feel very good because you cannot really what they call it, you know, social engineering or not social engineering um [long pause]” (HJ). *“Are you talking about privacy thing?”* (Researcher). *“Yeah, privacy thing, because, you know, you are being monitored, so you behave yourself”* (HJ).

H3 and H4:

As a consequence of their awareness of being monitored, employees act properly and carefully, meaning that they modify their behaviour due to being conscious that they are potentially being monitored. It might be true that what employees do is not always being monitored. However, since their work is online or on the systems, employees in their organisations must act as if they are being watched constantly (as they do not know whether they are being watched or not). Therefore, workers in their organisations are more inclined to comply with rules and regulations. Further, if anything goes wrong, employees perceive that there is a likelihood that they would be held accountable. The surveillance mechanisms effectively control employees' behaviour at all times. The study therefore predicted that e-government use, via the effect of perceived transparency, would have a positive impact on levels of perceived accountability and on levels of self-reported compliance within government organisations – and both hypotheses were found to be significant.

With regard to the hypothesis that perceived transparency leads to increased perceived accountability, most participants believed that employees can be held accountable because they are being monitored when they use the systems; furthermore, they perceived such accountability positively, mentioning that it is a natural consequence of being monitored (see Table 24). This validates and explains the hypothesis, as illustrated in the following comments:

“Yeah, of course, that is one of the advantages of having system monitored and having internal control and having all these things in place ... so, will stop

people from doing bad things or let us say wrong thing ... or misleading information or something” (AM).

“So, that is why, I feel it, it is good because, you know, we are people, we should even if it is related to money hehh [laughing]” (MT). “But, you think this can be done because of the system! Because you can see everything” (Researcher). “Yes, of course because of this ... and you can aaah [pause] identify exactly the person who is responsible ... and this is most important thing” (MT).

While most participants viewed accountability positively, two mentioned system circumvention in order to avoid being held accountable. The first participant invoked human factors as a reason why they try to help others. They avoid using the systems, so nothing is recorded. The other participant stated that employees do it to avoid accountability when not following the rules, as illustrated in the following statements:

“Maybe we can overcome some of the rules ... and usually it is done internally, if there is human factor” (MH). “What do you mean by internally?” (Researcher) “Aaah um [long pause] maybe it is not going to be recorded in the system.” (MH) “Okay, okay, so like for example to avoid being questioned or...” (Researcher). “Aaah [pause] yes, but as I told you it is not in every case” (MH).

“Yeah, I mean so aaah people try to rely on paperwork because they do not want to be held accountable, they want to feel like an easy way to escape when there is like, you know, some kind of investigation or when they want to do things and, you know, avoid consequences, like that” (YT).

Participants also shared stories they experienced of employees being held to account because of their use of the systems and being monitored. The following comment is an example of the stories shared:

“Okay, in the, I mean, before six months, we had one reporter, he said, it is done, but on the site the water was still flooding ... okay, the issue was they were stuck in the street, which made a huge problem, and when they reviewed the system, they saw the employee saying it is finished ... so they called him out and it was a big problem for him because he did not return to

the department that was supposed to finish the work ... and he caused problems, and there were damages on the street and loose in the electricity, lots of things ... this is one thing that we can meaning do it easily with the system ... just transfer the report to the department that has to do the work, and that is it" (AJ).

Concerning the hypothesis related to self-reported compliance as a result of perceived transparency, most interviewees, besides confirming that there is an increase in their compliance because they are monitored when using the systems, tended to perceive compliance with rules and regulations positively. Participants also mentioned that this is a natural consequence of being monitored, which confirms and explains the predicted hypothesis (see Table 24). The following interviewees' comments are examples of such responses:

"Basically, because you know someone is watching so I am not going to do any funny business for example ... I mean most people would behave if they know they are being monitored" (HJ).

"Yeah, I mean because aaah [pause] if you if the employees know they are monitored by their boss, especially in the system, they will not go somewhere else ... yeah, they will not play around as you said ... but, aaah [pause] for example as I said under the table or there are some benefits, money, there are few ... okay, we had in the past when there were no any monitoring, the systems, we got some cases but very few, few people ... yeah." (IA) "Um [long pause] so, the system is making them working by rules and behaving." (Researcher) "Yeah, exactly, yeah" (IA).

Interviewees also shared stories of cases where employees had to comply with rules and regulations due to their use of the systems and being monitored. The following is an example of the stories shared:

"Yeah, yeah like that happened actually in the financial ... I was a, I heard ... I heard there was like they used to plan to operate a big event, so they like, you guys have open budget, so they found some companies trying to get this aa piece of cake ... operate or run this event, they used to ask the manager to sign like in a big project, and the manager asked his top manager to pass it through the system to make it official to avoid any issues, and he found they are not passing it though the system, so he got worried about that, so that

happened ... it must be done though the system ... yeah, so you see, without having the system, they would go with 100% ... but with having the system, they decreased like let us say they got 25% hehh [laughing]” (AQ).

5.7.2. New insights

FFM Personality traits (Users’ personalities)

Users’ personalities – the impact on e-government use

As illustrated in Section 5.2, conscientious individuals are achievement-oriented, determined, and organised (Costa & McCrae, 1992; McCrae & Costa, 2003), and seek to acquire knowledge (Barnett et al., 2015). Studies have shown that such conscientious people tend to use the internet (Landers & Lounsbury, 2006) and technologies to do their work (Devaraj et al., 2008). Analysis of the interview data found that, with some exceptions, most participants were high in conscientiousness (see Table 23). In this study, to explore how conscientious participants were, the focus was on the three characteristics mentioned above. The following comments are examples of their responses:

“Yes, it is important to me ... because aaah [pause] the worthiness of your existence ... aaah the more you achieve, the more you feel that you are worthy and you do something in your life” (AS).

“No, usually, I finish what I started, usually ... I do not like to keep stuff hanging, let us say, in the middle ... I either finish or not start ... um [pause], my life is always mostly, let us say, organised” (HJ).

“Well, I like learning ... and I travel to attend the lectures ... I do not do it for the sake of being promoted in the job, I do it for the sake of knowledge” (YT).

After confirming that the participants were highly conscientious, it was time to ask them whether they like/tend to use technologies (e-government systems) or not and why. Their responses were yes, with some interviewees giving reasons of why they like to use e-government systems. An example of participants’ comments is shown below:

“Sure, especially when I have free time in the work, I do not have meetings, aaah sometimes, we have after hour meetings, or after hour for ourselves to

finish some paperwork ... it going to be easy for me ... I can work from home at any time” (AJ).

Agreeable people are known for their altruism, compliance, and tender-mindedness (Costa & McCrae, 1992; McCrae & Costa, 2003). They can also be described as helpful, cooperative, and service-oriented individuals (Barrick et al., 2001; Graziano & Eisenberg, 1997). Studies have found that agreeableness is associated with the use of technology because it fosters cooperation and collaboration between individuals (Devaraj et al., 2008). When exploring this type of personality, the main focus of the interviews was on two characteristics – compliance and cooperation. Analysis of the data found that most participants were high in agreeableness (see Table 23). The following are examples of their comments:

“Yeah, I do what they ask me to do” (AS).

“For me, yes, I am very cooperative person ... even if I do not the things that someone wants me to help him with, I ask, I try to help them aaah in any way. I try my best to help anyone” (MM).

Based on their responses as they were high in agreeableness, when participants where asked whether they like/tend to use technologies (e-government systems) or not and why, they said that yes they did, and one of the interviewees provided an example of how he learned to use a new platform to cooperate with others:

Yes, and already have learned how to deal with the Microsoft Teams while it is not my job ... just to show others ... that this is the way how to use it, ... just in a way because I am, you know, I am not the boss but I am the school deputy who should know at least ... the things that the teachers should learn ... should understand ... so when they ask you, oh do you know how to do this one, it is not fair, it is not fair to say no, I do not know, no ... they may feel you are not supposed to be in this position, you know” (MT).

Common characteristics of extravert individuals are assertiveness, excitement seeking, and positive emotions (Costa & McCrae, 1992; McCrae & Costa, 2003) which are associated with strong learning motivations (Major et al., 2006) and the use of technology (Devaraj et al., 2008; Li et al., 2006). When exploring whether participant were high in extraversion or not, the main focus in the interviews was on two characteristics of this type of personality – positive emotions and assertiveness.

Analysis of the interviews found that that most participants were extraverts (see Table 23), although some participants seemed to be less assertive than others. The following comments are examples of such responses:

“Aaah [pause] well, I live my life in a daily bases and I like to enjoy my life and I like you know there is no point for you to be aaah [pause] negative about anything because in every single that is bad there is still good thing in it, you know what I mean ... and sometimes there is some from little things to big things grows so yeah, some kind of little problem could be the seed for big thing, big positive thing in the future, so yeah I am positive in general and I like to be to think this way” (YT).

“Of course, I will ... I do not like that others take advantage of me ... of course, I will stand up for myself” (AS).

Participants were asked whether they like/tend to use technologies (e-government systems) or not, and why. If they were extraverts, they said they did, and some participants provided reasons for why they liked to use e-government systems, as illustrated in the following comment:

“Yes, of course, technology, of course ... because now, we are in time of technology ... everything is easier with technology ... saving time, saving aaah [pause]” (MR).

Users' personalities – the impact on behaviour

As predicted, some personalities at least those that were explored in this phase are associated with the use of technologies (e-government systems). Further, participants revealed a new insight that personality plays a major role in complying with rules and following orders, as was demonstrated above when discussing compliance.

Studies investigating the topic support this finding that some personalities tend to comply with organisational rules and regulations, meaning that these individuals are more likely to behave in compliant ways than others. For example, a meta-analytic study reported that conscientiousness and agreeableness are positively related to compliant behaviour (Organ & Ryan, 1995). Additionally, another study also found that conscientiousness is highly correlated with compliance (Borman et al., 2001).

When exploring whether participants' personalities influence their compliant behaviour, analysis of the interview data found that, with some exceptions, most participants were more likely to behave in compliant ways. Participants not only emphasised that they complied with organisational rules and regulations but some of them also emphasised that this was a normal thing to do by saying "yeah, why not" (AQ). The following are more examples of participants' comments:

"I follow the orders I have no problems following the orders" (MM).

"Yes, absolutely" (MR).

One participant explicitly mentioned that compliant behaviour of individuals depends on their personalities, whereas another emphasised compliance at work, as noted in the following comments:

"It depends on the personality of the person ... even if someone is monitoring or not" (ZH).

"As a person, orders where? At work! Or ... yes, at work, yes" (MT).

Even though some participants were less compliant in their behaviour, since differences exist from one individual to another, they said that they complied most of the time, as illustrated in the following comment:

"Um [long pause] sometimes, yes, sometimes, no, most of them yes hehh [laughing]" (AJ).

It can be concluded that some personalities play an equally important role in terms of the individuals' compliant behaviour in response to the surveillance mechanisms created by the use of e-government systems. This finding suggests that further research is to be encouraged, a point discussed in detail in the next chapter.

Users' values

This study confirms that employees comply with organisational rules and regulations because of they use e-government systems in which their work is seen and monitored by others. This is set out in the discussion of H4 above, and the analysis of the interview data revealed another new insight into why they tend to comply with these rules and regulations – users' values.

The literature supports such an interpretation. For instance, studies such as (Illies & Reiter-Palmon, 2008) have found that personal values guide employees'

behaviour. Furthermore, others studies have found that there is a positive relationship between personal values and compliance (Eva et al., 2017) as well as a correlation between individual's values and compliance with rules and regulations (Schwartz et al., 2012).

When participants were asked why they comply with rules and regulations, interviewees explained that their own values were also major factors that influenced their compliant behaviour. The following comments are examples of such responses:

"I believe if you have principles, it does not make a difference if there is a system or not" (MH).

"My own drive ... yeah my own values. I do not like to. I like to follow the rules especially at work, because I know it is for good, so when I do not follow the rules, I do not feel comfortable" (AS).

One of the participants shared a story. He was asked by one of his relatives to do something that was considered illegal. Even though the participant confirmed he would think twice before doing anything in the system that was monitored, he said that it is firstly against his values to do something illegal, as noted in the following comment:

"Actually, I refused because, you know, against my values first" (AH).

Another participant shared a story of how her values influenced her compliant behaviour. She illustrated how her own drive prevents her from breaking the rules:

"Sometimes they ask me to do something I feel illegal, so I do not accept it ... this is not ethical I do not accept that I do not do it, and I tell them I do not like breaking rules" (ZH).

Besides the influence of users' personalities on compliance discussed above, personal values also have a significant role to play in terms of compliant behaviour. Although the surveillance mechanisms provided by use of e-government systems and the associated perceptions of transparency lead to more compliant behaviour, personal values cannot be ignored by policy makers, as they are equally important factors in terms of compliance.

System design

When participants were asked about what makes them comply with rules and regulations, they said that they complied because they are aware their work is seen and monitored by others. Most of them perceived compliance positively, as demonstrated when discussing compliance hypothesis, H4, above. However, participants also revealed that the design of the system is another aspect that makes them comply with organisational rules and regulations.

Interviewees viewed system design positively, saying that it is a great way to keep order for everyone, not only for government employees from the top to the lowest level, but also for beneficiaries as well. This phenomenon has been discussed in prior research which has shown that the design of the system plays a key role in changing users' behaviour (Lockton et al., 2010). Other studies, like (Beale, 2007), have discussed the concept of system design (human-computer interaction) which steers users towards specific behaviours, highlighting what individuals should and should not do to reach and further corporate goals.

As noted above when discussing power distance, most participants' organisations were classed as having large power distance, so that those who are in power can do anything without anyone questioning them. Since these employees are at the top of the pyramid, managers at highest level perceive that the likelihood of being held to account is very low. Some participants shared their experience of the importance of system design where they illustrated how their managers tried to play around and go bend the rules, but they could not because of the system design, as illustrated in the following comment:

“Aaah [pause], few employees maybe one or two let us say three who have the power over the systems, the manager of the systems, can do anything even if the relatives do not meet the criteria of the [participant mentions the name of the organisation] they can do anything, but there is one condition he knows I mean the manager or the employee who has the access to accept any candidate, um [pause] the candidate should have registered their information on the system, if the information is not there, he cannot even if he is the manager he cannot accept or go around the rules ... all the employees who do not have manager access they obey to the systems, they cannot do anything, they do what they should do based on the rules and

policy ... yeah, yeah, it happened to us to my direct manager ... he wants to play, he wants to, anyway any method to accept that [participant mentions the position of the employee] but he cannot, he is forced to, you know, not he is forced, he cannot do anything, he has no permission to accept that [participant mentions the position of the employee]. He is looking for any method that aaah to accept that [participant mentions the position of the employee], so at the end he wants but he cannot” (MM).

Another participant who works for one of the municipalities shared a story about his experience in which the system design forced users to comply with rules and regulations:

“Yeah, sure, meaning let me tell you something, if somebody applies for land, it is 1000 square meter okay ... okay the required for him, is 60% from the land ... in the paperwork, he can put like 65, 68 ... no one will say no ... but in the system, if you put 65.0001, the system will not accept it” (AJ). “Aha [aha moment] okay, so, it is not only that he is afraid of being caught, he will not be able to play around, it is the system design” (Researcher). “Yeah, the system design ... yeah, even meaning for today, we had a meeting for aaah [pause] one car show room, in the car show room, the rule says it has to be 10%, built up area for the whole land ... and what he was doing is 25% ... in the first place, the system rejected it, then he said, he came to the office to me today, and when I checked the design, there was a problem with the office, when he changed it, then the system accepted it” (AJ).

Lastly, one of the interviewee explicitly said how system design led to the increased compliance:

I think the system will actually increase compliance, not because you want to, but I think you have to because there is no other way” (HJ).

It can be concluded that besides the personalities and values of users, the design of the systems is another crucial factor that influences the compliant behaviour of government employees.

To sum up, the main purpose of this phase was to validate and explain both the significant relationships found in the quantitative phase and explore the remaining relationships that appeared, even though they not supported statistically. The

findings emerged are illustrated above. However, during the interviews, participants revealed new insights that the researcher had not thought about (Braun & Clarke, 2013), and these are set out above.

In concluding, it is true that interviewees confirmed and explained the predicted hypotheses of the research. The model was built on two theories, Hofstede Theory (Hofstede et al., 2010) and Panopticon Theory (Foucault, 1995). The hypotheses suggest that culture is a driver of e-government use. Employees act properly and carefully when performing their work using e-government systems – since they know that their activities are being monitored. The new insights which emerged from the participant interviews showed that surveillance mechanisms depend on users' personalities, their values, and system design (see Figure 7), and can be considered an incomplete one. Government organisations are complex social systems, and so it is simplistic to assume that the impact of e-government use is controlled only by the factors considered in the quantitative stage alone. The phenomenon investigated occurs in a broader context, and all of contextual factors will have an effect. The qualitative stage has identified that users' behaviour is also influenced by their values and personalities, and by the design features of e-government systems they use. Therefore, there will be differences in the extent to which e-government use leads to a 'virtual panopticon', the factors will vary from one organisation to another.

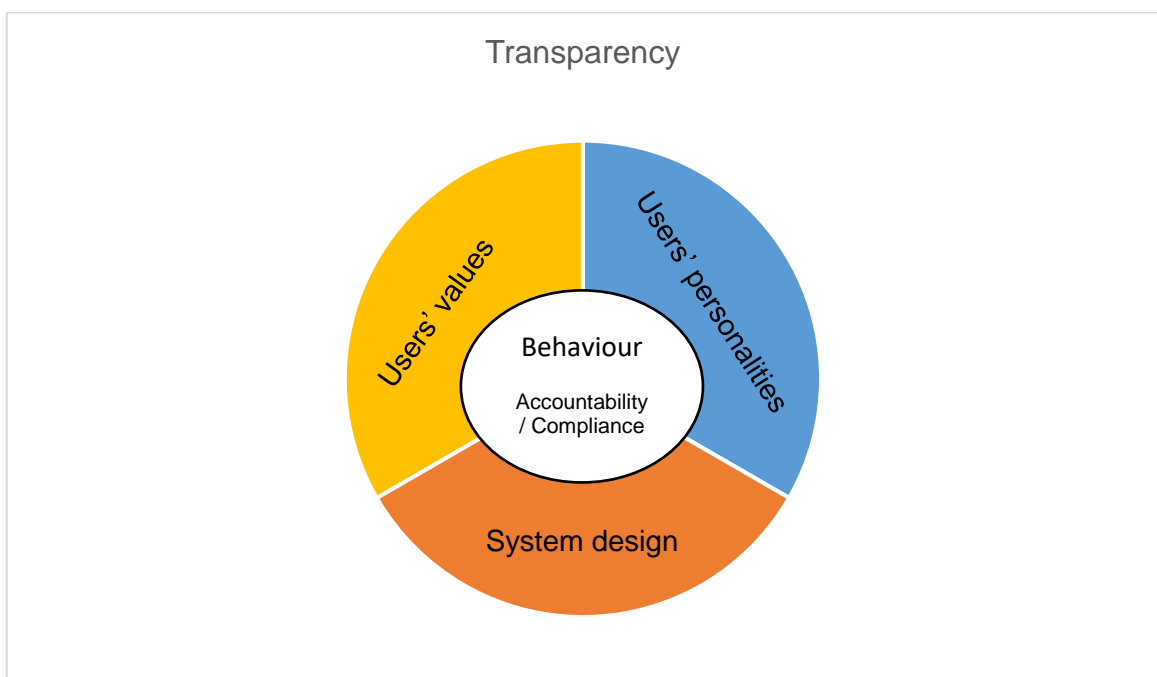


Figure 7. Comprehensive view of the new insights

A strength of the explanatory sequential mixed methods design which was used here is that the qualitative phase helped fill in some of the blanks remaining after the quantitative stage. That is, as illustrated above, it is evident that surveillance mechanisms are a strong driver for employees to comply with rules and regulations, but it is not the only driver – users' personalities, values of the users and the design of the systems themselves are also important. All these factors make a significant contribution in guiding users' behaviours. Detailed discussion the findings of both phases is provided in the next chapter. Finally, this finding calls for future research into how or to what extent, these factors have an influence on the Saudi government employees' behaviour? More precisely, the question can be asked as to how it affects individuals quantitatively. If users cannot be trusted, what is the impact on these people? These issues are illustrated in more details the Future Directions section of the next chapter.

5.8. Chapter summary

The chapter started by providing a background of the FFM personality traits and their association with cultural dimensions and use of technologies. Then, the interviews process was described. This was then followed by a description of both sampling techniques, the recruitment challenges associated with them, and data collection. After that, a detailed description of the six phases of the thematic analysis technique was provided. In order to ensure that the analysis was performed rigorously, the researcher precisely followed the 15-point checklist of criteria for good thematic analysis (Braun & Clarke, 2006). Lastly, the findings of this phase, including the new insights revealed by participants were then presented and discussed.

To summarise, e-government use does indeed create a virtual panopticon for workers, whose behaviour tend to become more compliant, and who also have a heightened perception of transparency. There are differences from one workplace to another because e-government use is more likely in some organisational cultures than others. There are also differences from one individual to another because workers' behaviour is also influenced by their values and personalities. Finally, there are also differences from one system to another because the design of the system itself can, to varying degrees, remind workers of transparency to varying degrees.

The next chapter discusses the integrated findings of both the quantitative and qualitative phases. Here a conclusion is drawn, overall research contributions are stated, profound implications are provided, research limitations are set out, and directions for future research are listed.

Chapter Six: Discussion and conclusion

6.1. Introduction

The objective of this study was to develop a theoretical model of the influence of organisational culture on the use of e-government systems, and the impact of the use of such systems on transparency, accountability, and compliance in public organisations. After identifying research gaps in Chapter Two, Chapter Three demonstrated the method employed to reach the aim of this project. Chapter Four presented the results of the quantitative phase in which the proposed theoretical model was tested. Chapter Five presented the qualitative phase of the study in which results of previous phase were validated and explained and new insights were revealed by participants.

This chapter begins by revisiting the research questions, adding a concluding discussion about the findings of both the quantitative and the qualitative phases for each question. This is then followed by a presentation of the overall research contributions, illustrating the theoretical and practical contributions. The limitations of the study are then discussed, with several future research directions outlined. Finally, a summary of the thesis is provided.

6.2. Answering the research questions

The study posed four specific research questions (see Section 3.2). This section demonstrates how these were addressed and discusses overall conclusions after both phases of the research were completed. The four research questions are addressed separately below.

Research Question 1 – the influence of organisational culture

The first research question, set out in Section 3.2, was as follows:

Does organisational culture influence the use of e-government systems within government organisations? And if so, what is the nature of the influence?

The overall results from both phases of the research indicate that organisational culture does indeed have an influence on the use of e-government systems within government organisations. The findings suggest that some cultural dimensions are associated with increased use of e-government systems – individualism, restraint,

and long-term orientation. The study also found cautious support for the notion that large power distance, low uncertainty avoidance, and feminine cultures are also associated with greater use of such systems; however, as the evidence for these was only obtained in the qualitative phase, further research is needed in order to confirm them.

In detail, H1a predicted that a large power distance would positively influence the use of e-government systems within government organisations; however, the results from the quantitative phase showed no support for this hypothesis. Section 4.9 provided a detailed discussion where several points were raised of the reasons that might have led to such a result. A variant of the structural model did find support for this hypothesis, but this must be interpreted with caution because it was found significant only with two items, PD1 and PD2, and as a rule of thumb the minimum number of items for each construct is three (Hinkin et al., 1997). For this reason it was concluded that further investigation was needed to better understand this relationship. The subsequent qualitative phase found support for the notion that organisations with larger power distance were more likely to use e-government systems (see Section 5.7.1). Interviewees explained how a large power distance culture influences the use of e-government systems; they said, for example, that they must do what they are asked to do, evidence that supports and explains the predicted hypothesis.

A possible explanation for such a result might be that subordinates in large power distance culture have stronger dependence on superiors and expect to be directed (Khatri, 2009), so they simply accept any instructions given by their superiors. Countries such as China, Malaysia, Saudi Arabia, and UAE are considered large power distance cultures (Hofstede et al., 2010). These countries rank high in terms of e-government development (United Nations, 2010, 2012, 2014, 2016, 2018, 2020). In other words, this result may mean that the larger the power distance is in a country, the greater the use of e-government systems. As this finding was only obtained from the qualitative phase, further investigation is encouraged in order that it can be generalised.

H1b proposed that individualist culture would positively influence the use of e-government systems within government organisations; this was supported in the quantitative phase. This finding is true on both the national and individual culture levels. Most studies on the topic (Bagchi et al., 2004; Merhi, 2018) which arrive at

the same conclusion look at the national culture level, whereas the current study is based on the individual culture level within an organisation. A key difference between most studies in the literature and the current study is that most studies in the literature focus on citizens, but this study focused on government employees. Not only did the qualitative phase validate this outcome but also gave explanations in participants' words – by providing examples from daily practice, the interviewees illustrated how individualist culture influences the use of e-government systems.

Research has suggested that individualism is increasing globally (Santos et al., 2017). If individualism is associated with e-government use, as this study and other studies such as (Aida & Majdi, 2014) suggest, and if e-government is highly regarded and helps workers perform more efficiently, this might illustrate the diffusion of e-government systems. This finding cannot be extrapolated to all countries because the current study was conducted in only one country; further research to determine if the finding can be generalised to other countries is required.

H1c predicted that restraint culture would positively influence the use of e-government systems within government organisations; this was supported in the quantitative phase. This cultural dimension is one that was recently added to Hofstede's cultural dimensions (Hofstede et al., 2010), so there is little research on the influence of restraint culture on the use or adoption of technology, especially on the use of e-government. This implies that this finding can be considered as a novel addition to the body of knowledge. The statistical analysis in the quantitative phase supported that restraint culture has an influence on the use of e-government systems, and the qualitative phase confirmed that as well. Participants, provided examples of how they cannot push back against orders coming from their superiors, confirming and explaining the predicted hypothesis.

This finding suggests that the most likely cause of the increase in e-government use is restraint culture. That is, since maintaining orders is probably essential for individuals in this type of culture, where they tend to be controlled, members do what they are asked to do. When superiors call for the use of e-government systems, it is easier for subordinates to obey, and they follow the orders. This means that restraint cultures, the dominant culture in the Arab world (Al Omoush et al., 2012), contributes to greater use of e-government systems.

H1d predicted that a low uncertainty avoidance culture would positively influence the use of e-government systems within government organisations, but the quantitative study failed to find support for this hypothesis. Section 4.11 provided a detailed discussion, setting out possible reasons of such a result. Qualitative study found that most participants' organisations were high in uncertainty avoidance. However, this does not mean that all participants' organisations were high in uncertainty avoidance, in fact some organisations were found to be low in uncertainty avoidance. This finding supports and explains how low uncertainty avoidance culture positively influences the use of e-government systems.

Cultures with low uncertainty avoidance have a greater tendency to adopt and use technologies (Leidner & Kayworth, 2006) so that members in this type of culture are more likely than those with high uncertainty avoidance to be risk-takers and access new innovations (Erumban & De Jong, 2006), resulting in more diffusion and use of technology. This finding must be approached with some caution since it was only obtained from the qualitative phase; further research is required to confirm such relationship.

H1e predicted that long-term orientation culture would positively influence the use of e-government systems within government organisations; this was supported in the quantitative phase. Notwithstanding that this relationship was supported in the quantitative phase, it was important to see whether theory adopted was the reason behind this finding, or whether there might be something else. There was therefore a need to connect that idea to theory by using a variety of information, and this was the role of the qualitative phase. Participants in the interviews confirmed this finding: that is, most of them illustrated how the long-term orientation culture (see Section 5.7.1) influenced the use of e-government systems by providing real life examples, which explained and confirmed the predicted hypothesis.

In terms of e-government systems, it is crucial for governments to have strategic planning, since success of e-government requires well-planned e-government strategies. Such strategic planning is fostered by, and aligned with, long-term orientation cultures (Zhao, 2011), and this is an important point which governments should heed. The use of mobile technologies in e-government has been growing rapidly among countries (United Nations, 2020). This has widespread advantages, that local governments, for example, should consider, as it provides many benefits and is more convenient not only for citizens but for government employees too.

H1f predicted that feminine culture would positively influence the use of e-government systems within government organisations, but the quantitative study failed to find support for this hypothesis. This cultural dimension seems to be controversial as research shows that both masculinity and femininity may have an effect on e-government (Bouaziz, 2008). This aspect calls for further investigation, and this was approached in the qualitative phase of the study. Most participants demonstrated that feminine culture was predominantly the type of culture in their organisations, illustrating how this type of culture influenced the use of e-government systems, supporting and explaining the predicted hypothesis.

A possible explanation for this finding might be that feminine cultures value communication, which is an important aspect of e-government systems (Bonsón et al., 2012). If feminine cultures use such systems, it facilitates information sharing, communication, and cooperation at work (Merhi, 2018), so members in this type of culture are more likely use them. This finding indicates that the use of e-government systems would be greater in feminine cultures. Therefore, organisations with feminine cultures should consider applying such systems to make work more efficient (Carter & Bélanger, 2005) and improve performance (Kovačić, 2005). Although this finding was supported in the qualitative phase, where possible explanations were discussed, this finding must be interpreted with caution since it was only obtained from the qualitative phase; further investigation is encouraged to confirm such a relationship.

To conclude, the quantitative phase suggested that some cultural dimensions do have an influence on the use of e-government systems. The qualitative phase confirmed and explained how different cultural dimensions play a substantial role in using e-government systems and also revealed that different types of culture have a major influence when it comes to directing individuals' behaviour. This needs to be taken into consideration by policy makers or managers when dealing with employees and when applying new systems. This point is discussed in detail in Section 6.3.3.

Research Question 2 – the impact on perceived transparency

The second research question, discussed in Section 3.2, was as follows:

Does the use of e-government systems have an impact on levels of perceived transparency within government organisations? And if so, what is the nature of the impact?

While the independent variables of the model concerns Hofstede's cultural framework (Hofstede et al., 2010), the dependent variables of the model concerns Panopticon Theory (Foucault, 1995) (see Figure 5) , and both involve research questions, RQ2, RQ3, and RQ4. Referring to RQ2, H2 predicted that e-government use would have a positive impact on levels of perceived transparency within government organisations, and the quantitative phase found strong support for this hypothesis. The qualitative phase involved triangulating the findings and in this way explained the nature of the impact. In brief, e-government use does have a positive impact on the levels of transparency perceived by workers within Saudi government organisations.

In detail, the first phase found that this relationship statistically significant (see Table 14) and also meaningful (the effect size was $f^2 = .435$; see Table 15). This result means that the more that government employees use e-government systems, the more they perceive their work, including decisions made and actions taken on the systems, as being transparent to others. The literature seems to reach overall agreement on the impact of e-government on transparency for citizens (Bannister & Connolly, 2014; Bertot et al., 2010; Sandoval-Almazán et al., 2021; Song & Lee, 2016). However, this study looks at government employees' perception of transparency, an aspect rarely raised in the literature. The qualitative phase of the study confirmed this relationship and also explained and provided examples of how employees' work was seen by others within their organisations. While most participants expressed positive feelings about their work being monitored – they viewed it as proof of their work – very few participants perceived it negatively in terms of privacy concerns.

This finding implies that when employees work through e-government systems, they perceive that their work is seen by others, mostly superiors. However, the findings in the qualitative phase suggest that this does create privacy concerns for some employees. Even though most participants perceive it positively, others perceive it

as a threat to their privacy, and this may affect the productivity of the organisation (Connolly & McParland, 2012) and passion for innovation (Wu et al., 2021). Thus, organisations and policy makers should consider a balance between organisation dataveillance and employees' privacy concerns (Rosette et al., 2017). In this way, it would make the use of such systems more fruitful rather than harmful for both organisations and employees.

Research Question 3 – the impact on perceived accountability

The third research question, discussed in Section 3.2, was as follows:

Does the use of e-government systems have an impact on levels of perceived accountability within government organisations? And if so, what is the nature of the impact?

H3 predicted that e-government use, via the effect of perceived transparency, would have a positive impact on levels of perceived accountability within government organisations, and the quantitative data showed support for this hypothesis. This result means that when employees use e-government systems, they perceive that there is a likelihood that, since their work is perceived to be visible to others, they may be held accountable if they do not follow their employer's rules and regulations. The second phase of the study explained the nature of the impact. The conclusion is that e-government use does have, via the effect of perceived transparency, a positive impact on the levels of perceived accountability within Saudi government organisations.

In detail, the result of the quantitative phase of the study found support for this hypothesis, a finding that is consistent with the literature (Haque & Pathrannarakul, 2013; Ray, 2012), as illustrated 4.11. However, even though this result is generally consistent with the literature, it is worth mentioning that most studies in the literature discuss different types of accountability where the focus is on government organisations being accountable to citizens. In contrast, this study investigated the accountability of individual government workers within their organisations, making the finding of this study quite distinct. The qualitative phase then confirmed and explained this relationship in the participants' words. Most participants viewed accountability as a positive thing (see Table 24). Interviewees also illustrated how being held accountable through use of the e-government systems is a natural consequence of being seen by others, and gave real-life examples and stories of

others they knew who were held accountable because of their use of e-government systems (see Section 5.7.1).

While greater perception of transparency might negatively affect productivity of organisations, perceived accountability might be viewed positively, as found in the qualitative phase. Perceived accountability through managerial monitoring behaviour may, in fact, improve job performance of employees (Mero et al., 2014). However, more accountability may have deleterious consequences (Hall et al., 2017) such as leading to an increase in employee turnover (Brees et al., 2020). Even though accountability may bring some benefits to organisations, policy makers should also consider its cost.

Research Question 4 – the impact on self-reported compliance

The final research question, discussed in Section 3.2, was as follows:

Does the use of e-government systems have an impact on levels of self-reported compliance within government organisations? And if so, what is the nature of the impact?

H4 predicted that e-government use, via the effect of perceived transparency, would also have a positive impact on levels of self-reported compliance within government organisations; this hypothesis was supported. This indicates that when employees use e-government systems, their work is perceived to be seen by others, and therefore they are more inclined to comply with their organisation's rules and regulations. That is, the use of e-government systems affects the perception of transparency of the employees' work, which makes them comply more, and the qualitative phase explained the nature of the impact.

In detail, as mentioned in the literature review and in the discussion of the results of the quantitative phase (see Sections 2.4.3 and 4.11), there is little empirical research on the impact of e-government use in terms of the effect of perceived transparency on self-reported compliance, so this finding is a novel contribution to the body of knowledge. As well as being significant, the relationship had a very large effect size $f^2 = .364$ (see Table 15). In addition to confirming this relationship, participants in the qualitative phase illustrated how the use of e-government systems increased employees' compliance and provided examples and shared stories of how their colleagues' use of e-government systems made them comply with the

organisational rules and regulations (see Section 5.7.1). This finding can provide valuable guidance to policy makers on how the use of e-government systems increases compliance (Alomari, 2020) of employees through their perception of transparency. Organisations should therefore reduce the work that is done manually and transact more work through the systems, not only to improve compliance but efficiency as well (Qi & Azmi, 2021).

It can be seen that the results of the last three hypotheses, H2, H3, and H4, are associated with Panopticon Theory, showed that the surveillance mechanisms work. The qualitative phase confirmed and explained these relationships. In brief, the use of government systems affects employees' perception of transparency, so they perceive that they can be held accountable if they do anything wrong. Simultaneously, because employees perceive that their work on the systems is seen by others within the organisation, their compliance increases.

Finally, besides the confirmation and the explanation provided in the second phase of how surveillance mechanisms work, the analysis of the interview data revealed that the surveillance mechanisms as such are not the only factors that make employees change their behaviour and act properly. Employees' personalities, values, and system design are also key determinants of employees' behaviour. These factors are crucial for policy makers and should be taken into consideration when applying e-government systems within public organisations.

6.3. Overall research contributions

A key contribution of this study is the provision of a tested and validated theoretical model of the influence of organisational culture on the use of e-government systems, and the impact of the use of such systems on transparency, accountability, and compliance in public organisations.

This model contributes to the body of knowledge. As demonstrated in Chapter Two, there is a paucity of research on the effect of culture on e-government use from the perception of government employees, especially studies utilising Hofstede's cultural framework (Hofstede et al., 2010). Within Hofstede's cultural dimensions, it is also worth noting that there is very little research examining the effect of restraint culture on the use of e-government systems; the results of this study make a contribution to this body of knowledge.

With regard to the gaps identified in the transparency section, even though there are many studies investigating the effect of e-government on transparency (54 of 98 studies were found related to transparency), the literature largely examines the relationship from the perception of citizens, and there has been little attention on examining this relationship from a government employees' perspective. These gaps have been filled in the current study by examining this relationship through Panopticon Theory (Foucault, 1995) and, in both phases of the study, investigating the impact of e-government use on perceived transparency from the perception of government employees.

While there is considerable prior research on transparency, there is little research on the effect of e-government on accountability or compliance – only 10 studies were found related to accountability and 10 studies related to compliance. This is similar to the citizen-perspective research. Increased transparency for citizens is also only part of the story, since more transparency reduces corruption and makes government more accountable. Citizen research that stops at transparency is not telling the full story, and a little attention has been paid to investigating the relationship from the perception of government employees. The literature also lacks the empirical studies exploring the effect of e-government on compliance. This project has bridged these gaps, and the findings provide several contributions to the knowledge base of e-government, accountability, and compliance.

In summary, this project has made contributions to the body of knowledge on the influence of culture on the use of e-government systems, and the impact of the use of such systems on transparency, accountability, and compliance, looking at these aspects both quantitatively and qualitatively. New insights were revealed by interviewees showing that the use of e-government systems is not the only factor impacting accountability and compliance; this is discussed in more detail in the following two sections.

6.3.1. Theoretical contributions

The findings presented in Chapters Four and Five illustrated how different types of organisational culture (Hofstede et al., 2010) play an important role in using e-government systems. In addition, the findings also demonstrated how the use of e-government systems has, through perceptions of transparency, an essential role to play in terms of the accountability and compliance of government employees. An

important contribution has been made in linking Hofstede's cultural dimensions to the use of e-government systems, transparency, accountability, and compliance. This project is, to the best of the researcher's knowledge, the first to explore the relationships presented in Chapter Four in a holistic way by using the theories of Hofstede's cultural framework (Hofstede et al., 2010) and Panopticon Theory (Foucault, 1995).

In terms of the findings presented in Chapter Five, a valuable contribution has been made to the body of knowledge by confirming and explaining the theoretical bases behind the relationships found in Chapter Four. Although the relationships were found to be statistically significant, the numerical results cannot prove the theoretical reasons behind these relationships, which is where the qualitative phase comes into play. That is, the qualitative phase explained how the use of e-government systems are more likely in organisational cultures that exhibit certain characteristics, and how increased perception of transparency as arising from e-government use impacts workers' behaviour: it makes them more compliant and more aware that they can be held accountable for their actions.

In addition to the way in which transparency accounts for workers' behaviour, their behaviour is also influenced by personality, values, and system design. That is, e-government use does, in fact, create a virtual panopticon for employees – they gain a high perception of transparency and their behaviour becomes more compliant. There are differences from one individual to another because workers' behaviour is also influenced by their values and personalities. Finally, there are also differences from one system to another because the design of the systems themselves can remind workers of transparency to varying degrees, so their awareness of transparency is not the same in every case.

To summarise, it is true that e-government use plays a major role in modifying users' behaviour related to accountability and compliance, but other factors mentioned above are also equally important. All these factors have a significant role to play in guiding users' behaviour, which is a central point to be considered by researchers when conducting research and proposing theoretical frameworks.

6.3.2. Practical contributions

The findings of this project imply that underestimating the role of culture, and especially of organisational culture, may lead to failures – such as systems not being

used and benefits not being utilised. Understanding what type of organisational culture managers or decision makers are in would help increase the use of e-government systems and also make the most of their benefits. The findings of the quantitative study are that different types of culture – such as individualism, restraint, and long-term orientation – positively influence the use of e-government systems within Saudi government organisations.

For instance, since individualism is associated with the use of e-government systems (Merhi, 2018) such that individuals are more work-oriented; the employer's interest is a priority over their own – members in this type of culture are more likely to prefer to use such systems to make their work more efficient. In an individualist culture, promoting decentralisation within e-government systems would increase the effectiveness of decision making. Policy makers should consider such a type of culture when using or updating systems in order to use them successfully.

Because not all organisations are the same in regard to type of culture, there might, as found in the qualitative phase, be some resistance in high uncertainty avoidance cultures. Members in this type of culture are likely to avoid learning new technologies introduced at work because of the ambiguity involved (Sabri et al., 2012; Veiga et al., 2001). So instead of forcing employees to use e-government systems, policy makers may need to seek other ways – such as focusing more on showing the positive side and emphasising the benefits of e-government systems. These findings provide insights for public figures and policy makers, allowing them to better understand the challenges of e-government use in certain organisational cultures and allowing them to gain benefits from e-government. Therefore, besides other factors that bring benefits to e-government, such as adequate telecommunication infrastructure (United Nations, 2020), policy makers should also consider characteristics of the organisational culture when introducing new systems.

Another important implication that can be derived from the findings of this study is that policy makers in government agencies should consider adopting e-government systems in most of their services, since the higher the usage of e-government systems the more an organisation can monitor their employees' work, and this ultimately results in more accountability and compliance. However, more accountability may, for example, lead to unfavourable consequences, such as an increase in the employees' intentions to leave the organisation (Brees et al., 2020)

flowing from the observation that other colleagues are being held accountable. In such cases, policy makers may need to consider the cost of more accountability.

Lastly, although the findings of this study imply that surveillance mechanisms work so long as employees do their work through the systems, and give more accountability and compliance, policy makers should keep in mind that they may not need to micromanage everything employees do. Notwithstanding the fact that e-government systems are needed to keep order, employees should be trusted, an important point illustrated by findings of qualitative study. These findings showed that employees' personalities and values are inner drivers guiding employee behaviour. If employees feel that they are not trusted, this may lead to unfavourable consequences such as some resistance to using the e-government systems. This issue should be considered not only by practitioners such as managers and policy makers, but also by future researchers. This point is discussed in more detail in the Future Research Directions.

6.4. Research limitations

All research is inevitably limited by geography, and in this case the study was conducted in KSA. The extent to which the findings can be generalised to other countries is yet to be established. Some countries in the same region might be similar, but the same should not be assumed for countries in other parts of the world since there are many cultural differences between Arab and Western countries (Hofstede et al., 2010; Parnell & Hatem, 1999). This limitation provides opportunities for future research within the IS field, especially e-government, in which the theoretical framework for e-government use provided in this project can be tested in different contexts.

The sample of this project was drawn from Saudi government organisations in which the unit of analysis was only the government employees; thus, the findings are limited to Saudi government employees. However, the findings could perhaps be applicable in non-government contexts as well. Another possible limitation emerging from Chapter Four is that the quantitative phase was conducted using SEM analysis of survey data. This approach assumes theoretical causal relationships, but in fact survey data is a 'snapshot' in time and the limitation is that the data is not longitudinal in time. Future research and experiments using longitudinal data to explore causality is encouraged to provide further credence to the conclusions made in this study.

The cultural aspects of this study were based on Hofstede's cultural framework (Hofstede et al., 2010). This is not the only cultural framework in existence as there are other cultural frameworks such as the Grid and Group Cultural Theory of Douglas (Douglas, 1996) and the National Culture (GLOBE) of House (House et al., 2004). Additionally, culture may change over time, and significant results at one point might not be significant at a later time (Straub et al., 2002). According to Hofstede et al. (2010), based on a study carried in 2004, Saudi Arabia was within short-term orientation culture, whereas participants in the qualitative phase felt their organisational culture was long-term in nature, but their frame of reference was probably Saudi culture in general. Perhaps the participants' organisational culture was more long-term than in other organisations in Saudi Arabia. It cannot be concluded that Saudi Arabia is really a long-term orientation culture, since the study was about organisational culture not Saudi culture as a whole, and so scholars conducting future research are encouraged to explore this topic and see if this finding can be generalised to Saudi Arabia more widely.

Interviews in the second phase were conducted in English. As discussed in Section 5.4, this is a limitation of the qualitative study as English is not the mother tongue in Saudi Arabia. Lastly, the findings of the qualitative phase confirmed and explained the significant relationships found in quantitative phase. The findings also supported and explained certain relationships that the quantitative study did not find support for. Generalising findings from a qualitative study is not an expected outcome (Leung, 2015), and in this case the findings were not intended to be generalised, but simply intended to explore established relationships in more depth (Johnson & Christensen, 2014). Moreover, since the qualitative phase revealed new additional insights, further quantitative investigation is encouraged to assess whether these qualitative findings can be generalised to wider populations (Creswell & Clark, 2018).

6.5. Future research directions

E-government systems have been promising tools not only for facilitating government employees' experience when doing their jobs, but also for ensuring order for employers. Based on the findings of this project, several directions for future research are identified as follows.

As mentioned in the section above, the quantitative study of this project was done at a single point of time using survey data. Further, it is noted that there were three cultural hypotheses that the quantitative study did not find support for while the qualitative study did – H1a: large power distance, H1d: low uncertainty avoidance, and H1f: femininity (although tentative support was found for the H1a variant of the structural model, albeit with only a two-item construct). In this situation, longitudinal research is encouraged to have better assessment of the cultural factors affecting the use of e-government systems.

The developed model showing the influence of organisational culture in Saudi Public organisation on e-government use, and the impact of such systems on perceived transparency, perceived accountability, and self-reported compliance was tested and validated in this project. Further research applying this framework in other countries with different cultural backgrounds, such as Australia, UK, and USA, or in a different context, such as in businesses, would extend the generalisability of the developed model.

Studies in the literature have discussed the impact of e-government systems on transparency and corruption from different perspectives – such as from the point view of citizens (Faura-Martínez & Cifuentes-Faura, 2020) and from the perception of public officials (Wu et al., 2020) – which the current study did not intend to measure. It can be seen that these findings are consistent with Panopticon Theory. Increased compliance is broader than just reduced corruption, which is just one example of how compliance can be improved. Nevertheless, it is similar to the framework of this study. Therefore, quantitative investigation applying the framework of the current study is encouraged so as to assess the relationship between e-government, transparency, and corruption.

The findings show that the use of e-government systems positively impacts the perceived transparency, perceived accountability, and self-reported compliance. Based on these findings, further research could investigate the impact of the use of e-government systems on workplace variables such as motivation and workload to confirm whether the increased use of e-government systems has implications for such variables. Further research could examine the impact of use of e-government on the employees themselves; would it make them feel stressed all the time if they perceive they are being monitored? Further research could investigate, for example, the impact of accountability not only on the performance of government

organisations (Han, 2020) but also on the employees themselves. That is, one question that could be examined is, as an example, if many employees are held accountable, does that lead to more productivity?

Besides the use of e-government systems, the qualitative phase of this project revealed new insights related to factors that influence accountability and compliance of government employees, personalities, values, and system design. Further research could investigate the impact of users' personalities, values, and design of the system on users' compliant behaviour to confirm whether these factors have impacts such behaviour. That is, a question that could be investigated is: if employees cannot be trusted and their values are disregarded, does this have an impact on the workers themselves and ultimately on their performance? Further research could examine, for example, whether the system design leads to increased accountability and compliance. Further quantitative investigation is encouraged to assess if these factors can be generalised to similar populations or to any other population from the developed or developing countries.

As discussed in Section 5.4, conducting interviews in English in an Arabic speaking country is a study limitation. Although language presents a minimal risk of bias, as discussed in that section, further research is encouraged to investigate whether use of Arabic yields the same conclusions as drawn in this study.

Lastly, the findings of the qualitative study of this project revealed that some government employees have privacy concerns arising from the use of e-government systems where they feel they are being monitored. Further research could investigate the influence of such concerns within the use of e-government systems, or even in different contexts such as business. In electronic systems, privacy is a wicked issue that needs to be tackled (Bargh et al., 2017; Saxena, 2017). Since this is a crucial issue that needs to be addressed, further research could explore the challenges involved in ensuring employee privacy in the workplace. For instance, further research could examine whether striking a balance between dataveillance and privacy (Rosette et al., 2017) has implications for users. A question that could be investigated in this context is: would the awareness of restricted or controlled access to users' information have a positive impact on users' privacy concerns? Finally, further research could also investigate whether employees' trust in an organisation's monitoring policy has any implications for their privacy concerns.

6.6. Thesis summary

This study had four key objectives, which were introduced in Chapter 1 as follows:

- To identify whether organisational culture influences the use of e-government systems within government organisations, and to explore the nature of the influence.
- To identify whether the use of e-government systems impacts the levels of transparency within government organisations, and to explore the nature of the impact.
- To identify whether the use of e-government systems impacts the levels of accountability within government organisations, and to explore the nature of the impact.
- To identify whether the use of e-government systems impacts the levels of compliance within government organisations, and to explore the nature of the impact.

Through rigorous explanatory sequential mixed methods research each of these objectives has been addressed, and it confirms that various cultural aspects do indeed have an influence on the use of e-government in the study location. Moreover, the use of such systems does have an impact on government employees' levels of transparency, accountability, and compliance. The qualitative phase revealed new insights, such as that users' values and personalities play a significant role in directing users' behaviour.

This is one of the first studies worldwide to investigate the impact of e-government use on compliance. It is the first comprehensive study of these issues to use Panopticon Theory, and the findings have implications for both theory and practice, summarised in Sections 6.3.1 and 6.3.2. Research limitations and future research directions have been discussed in Sections 6.4 and 6.5.

Finally, yet most importantly, this study has identified that what might be seen as an individual phenomenon is in fact a holistic phenomenon (Davis, 1971). As set out in Chapter Two, most studies examine the relationship between e-government and transparency, accountability, and compliance as if e-government is the main or only driver. That is, there is a general assumption that the use of technology (e-government systems) affects the perceived transparency and ultimately changes

the behaviour of the users (government employees) in terms of accountability and compliance, and to some extent this was seen to be true. However, what is interesting is that the overall findings of the study show that surveillance mechanisms built into such systems are not the only driver that alters employee behaviour. It was found that users' personalities, values, and the design of the system were also major factors in terms of changing users' behaviour.

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Appendices

Appendix 1. Summary of SLR analysis related to cultural studies

Study	Category	Location	Unit of analysis	Culture on which based: Hofstede, Grid and Group, or other	Findings
(Lean et al., 2009)	Intention to use e-government	Malaysia	Citizens	Hofstede	Uncertainty avoidance (Moderation) has no significant effect on the relation between innovation factors and intention to use e-government.
(Furlong & Al-Karaghoul, 2010)	E-government projects	Global (22 countries)	Secondary data & subject experts	Organisational culture	E-government projects are challenging due to different organisational environments and cultures.
(Seng et al., 2010)	E-government implementation	Malaysia	Government employees	Grid and Group Cultural Theory	Cultural cosmologies enable and constrain successful implementation and operation of e-government.
(Kanungo & Jain, 2011)	E-government performance	India	Government employees	Organisational culture	Culture affects e-government performance in both positive and negative ways.
(Nuridin et al., 2011)	E-government implementation and adoption	NA	Theoretical basis (Literature review)	Organisational culture	There is a link between organisational culture and barriers for adopting and implementing e-government.

Study	Category	Location	Unit of analysis	Culture on which based: Hofstede, Grid and Group, or other	Findings
(Khalil, 2011)	E-government readiness	Global (56 countries)	UN E-government Survey & House et al Index	National Culture of House (GLOBE)	National culture correlates negatively and positively with e-government readiness.
(Zhao, 2011)	E-government development	Global (84 countries)	UN E-government Survey & Hofstede Index	Hofstede	Correlation between e-government development and culture.
(Ahmed et al., 2012)	Transfer of e-government systems	USA & Pakistan	Web analysis & government employees	Organisational culture	Political objectives and cultural difference influence the transfer of e-government system.
(Aladwani, 2013)	E-government use	UK & Kuwait	Citizens	Hofstede	The results showed that there are differences in a cross-cultural setting between UK and Kuwaiti users of e-government systems in terms of interface quality.
(Zhao, 2013)	E-government development	Global (84 countries)	UN E-government	Hofstede	Correlation between e-government development and culture.

Study	Category	Location	Unit of analysis	Culture on which based: Hofstede, Grid and Group, or other	Findings
			Survey & Hofstede Index		
(Zhao & Khan, 2013)	Behavioural intention to use e-government	UAE	Citizens	Hofstede	The results showed that behavioural intention to use e-government in UAE is different from those in the USA, which might be affected by citizens' cultural contexts.
(Rufin et al., 2014)	Intention to use e-government	USA & Spain	Citizens	Hofstede	The findings showed that USA and Spain are culturally different in terms of compatibility and intention to use e-government.
(Zhao, Shen, et al., 2014)	E-government diffusion	Global (55 countries)	UN E-government Survey & House et al Index	National Culture of House (GLOBE)	Culture has an effect on e-government diffusion.
(Franke et al., 2015)	E-government implementation	Saudi Arabia	Non-Saudi subject experts &	Organisational culture	The results showed that cultural themes influence e-government implementation.

Study	Category	Location	Unit of analysis	Culture on which based: Hofstede, Grid and Group, or other	Findings
			secondary data		
(Joseph & Du Plessis, 2015)	E-government adoption	Zambia	Consumers	Culture	Culture has an effect on e-government adoption.
(Rodríguez Bolívar et al., 2015)	Use of technologies "e-government"	OECD member countries	Web analysis	Culture	The findings showed that the use of e-government is different across countries regarding administrative cultures.
(Waller & Genius, 2015)	E-government implementation	Jamaica	Subject experts	Organisational culture	The study proposed that culture might be a barrier for e-government implementation, but the results showed no support for this proposition.
(Wu et al., 2016)	E-government adoption	China	CIOs, business executives, & HR managers	Culture	Culture has an effect on adoption of public cloud computing in e-government.
(Jackson & Wong, 2017)	E-government implementation	Malaysia	Government employees	Grid and Group Cultural Theory	Culture across multiple levels has an effect on e-government.
(Navarro-Galera et al., 2017)	E-government diffusion	10 European countries	Web analysis	Administrative culture	The results showed that there are significant differences in local governments regarding cultural contexts.

Study	Category	Location	Unit of analysis	Culture on which based: Hofstede, Grid and Group, or other	Findings
(Schlæger & Stepan, 2017)	E-government innovation	China	Web analysis	Organisational culture	Organisational culture has an effect on e-government innovation.
(Fusi & Feeney, 2018)	Perception of social media use "e-government"	USA	Secondary data & web analysis	Organisational culture	Results showed that organisational culture positively and negatively influences perceptions of social media related to government organisations.
(Navarro-Galera et al., 2018)	E-government diffusion	Nine European countries	Web analysis	Administrative culture	The results showed that there are significant differences in local governments regarding cultural contexts.
(Zhao et al., 2018)	E-government adoption behaviour	Fiji	Citizens & Residents	Hofstede & House (GLOBE)	Culture has an effect on e-government adoption.
(Jacob et al., 2019)	Behavioural intention to use e-government	NA	Theoretical basis (literature review)	National culture	National culture affects behavioural intention to use e-government.
(Mensah, 2019)	E-government use	China	Foreign students in China	Culture (Language)	Culture has an effect on e-government use.
(Apriliyanti et al., 2021)	E-government adoption and implementation	Eight Southeast Asian nations	Government employees	Culture values	Sufficient infrastructure of ICTs is not the only factor that determines the success of government programs in which culture values

Study	Category	Location	Unit of analysis	Culture on which based: Hofstede, Grid and Group, or other	Findings
					is one of the key factors (amongst others) that the study found to have an influence on the success of e-government projects.

Appendix 2. Summary of SLR analysis related to transparency studies

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Lodge, 2009)	NA	NA	Europe	European parliaments	NA	The paper concluded that ICTs enhance transparency and accountability, but the issue is with those who are in power using the ICTs to put other values such as liberty and security at risk.
(Ogbomo, 2009)	ICTs in government "e-government"	NA	Oshimili North (Nigeria)	Citizens	Theory of Trying	The use of ICTs in government enhances transparency and citizens' participation.
(Azad et al., 2010)	Transparency of corporate governance	E-government development	60 countries	Secondary data	Control Model & National Governance Institutions	Transparency of corporate governance has an effect on e-government development.
(Bertot et al., 2010)	NA	NA	NA	NA	NA	E-government along with social media can promote transparency.
(Christensen & Læg Reid, 2010)	ICTs in government "e-government"	Transparency	Norway	Government employees	–	There is a positive effect of ICTs (e-government) on transparency.
(Hirwade, 2010)	NA	NA	India	Web analysis (601 e-government portals)	NA	One of the benefits resulting from using e-government is increasing the transparency of government.
(Jaeger & Bertot, 2010)	NA	NA	USA	NA	NA	In order to have greater impact of the e-government transparency, policy needs to focus not only on technology but on citizens as well. The government needs to be citizen-centric when developing and implementing e-government systems.
(Bekkers & Moody, 2011)	NA	NA	Netherlands	Key figures	NA	Visualising information on government web sites helps improve transparency in terms of government–citizen interactions.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Johri & Nair, 2011)	NA	NA	India	System designers & other sources	Value Sensitive Design (VSE)	In order to have an impact of e-government systems on transparency and reduce corruption, system designers should balance ideals with realistic values.
(Shan et al., 2011)	Evaluation of e-government	Transparency of government	China	Subject experts	Socio-Technical model & Stakeholder Theory	Based on the assessment of e-government, e-government leads to transparency of government affairs.
(Al-Aama, 2012)	NA	NA	Saudi Arabia	E-procurement system	NA	As the municipality adds more information on their web site and makes it more collaborative, these improve the transparency of the portal to beneficiaries, businesses, other government agencies, citizens, and contractors.
(Bertot et al., 2012)	NA	NA	USA	Web analysis & other sources	NA	The paper concluded that social media along with the effort of public members not only enhance transparency and accountability but also reduce corruption.
(Bhattacharya et al., 2012)	Transaction transparency	E-service quality of government portals	India	Citizens	TAM & D&M IS Success Model	Transaction transparency positively influences service quality of government portals.
(Camay et al., 2012)	NA	NA	USA	Web analysis (three cases)	NA	The paper concluded that a clear communication between government and beneficiaries can ultimately increase transparency with the government.
(Ganapati & Reddick, 2012)	NA	NA	USA	Chief Information Officers (CIOs)	NA	The study concluded that a high degree of transparency is attained by adopting e-government.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Harrison et al., 2012)	NA	NA	USA	Web analysis	Public Value Framework	With regard to transparency, participation, and collaboration, this paper concluded that the efforts of OG may have an impact when creating more valuable outcomes for stakeholders.
(Asogwa, 2013)	NA	NA	Nigeria	Web analysis, lecturers, librarians, government employees & others	NA	Results showed that e-government enhances transparency in government ministries.
(Chen, 2013)	NA	NA	USA	NA	NA	The paper concluded that the e-government implementation of eXtensible Business Reporting Language (XBRL) promotes not only transparency but accountability as it allows stakeholders to monitor the government sector related to finance.
(García-Sánchez et al., 2013)	NA	NA	Spain	Web analysis	NA	Based on the analysis, Spanish municipalities demonstrate high transparency regarding to information related to economy, environment, and social matters.
(Halachmi & Greiling, 2013)	NA	NA	NA	NA	NA	This paper concluded that the use of ICTs increases governmental transparency and accountability. However, the openness of government might be not favourable as it may decrease the operational capacity of the government. Therefore, this challenge should be balanced.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Katz & Halpern, 2013)	Transparency	Electronic participation & Information access	Global (82 countries)	Secondary data	–	The study did not find support to the hypothesis stating that countries with high levels of transparency have high levels of e-participation and information access.
(Alcaraz-Quiles et al., 2014)	E-government	Information disclosure	Spain	Web analysis	–	The findings showed that access to internet along with other factors may promote the transparency of regional government regarding to environmental sustainability.
(Bertot et al., 2014)	NA	NA	USA	Web analysis and other sources	NA	Although open government partnership through big data initiatives seeks to promote transparency and accountability of the government, there are nine challenges in terms of open policy that need to be addressed.
(Ganapati & Reddick, 2014)	NA	NA	USA	Chief Administrative Officers (CAOs)	NA	This study concluded that transparency, participation, and collaboration have been achieved by adopting e-government.
(Jun et al., 2014)	E-government use patterns	Perceived transparency	China	Citizens	–	The findings showed that the use of e-government web sites improves citizens' satisfaction with government transparency.
(Svärd, 2014)	NA	NA	Belgium	Government employees	Information Culture Framework	In order to have an e-government development, information culture is needed. Information management should be effective and efficient to be transparent. That is, archiving is a must for e-government to be transparent.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Van der Meer et al., 2014)	NA	NA	NA	NA	NA	The study concluded that the effect to implement e-government services" and "e-Democracy" in terms of transparency, openness and engagement has started but needs more time to be completed.
(Veljković et al., 2014)	NA	NA	USA	Secondary data	Open Government model	Based on the analysis, the study concluded that open government describes government transparency and data transparency in which data transparency needs more work to be achieved.
(Li & Mao, 2015)	Communication style similarities	Perceived transparency	China	Citizens	Similarity-attraction Theory	The results showed that the intelligent advisory system "communication style similarity" is positively associated with perceived transparency.
(Rodríguez Bolívar et al., 2015)	NA	NA	OECD member countries	Web analysis	NA	The study concluded that even though the disclosure of budgetary information via e-government promotes transparency and government accountability, the selected countries show no disclosure of all information produced.
(Sun et al., 2015)	NA	NA	Korea, Antigua and Barbuda, and Ecuador	Secondary data	Service-oriented Architecture (SOA)	The study proposed a framework of e-government 2.0 that would uphold transparency and accountability.
(Xinli, 2015)	Use of monitoring systems "transparency"	Perceived net benefits "corruption reduction"	China	Government employees	D&M IS Success Model	The results showed that the use of electronic monitoring systems positively impacts corruption reduction. While the use of the systems reduce corruption, the organisations and the employees play great role in doing so.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Zhao & Xu, 2015)	Development of e-government	Level of corruption	Global (80 countries)	Secondary data	Principal-Agent Theory	The study found that there is a positive relationship between e-government readiness and perceived corruption, meaning that when the e-government readiness is high, the cleanness and transparency are also high within a country.
(Hansson et al., 2016)	NA	NA	Post-soviet countries	NA	NA	The paper concluded that besides other ideologies the main emphasis of OG within post-soviet countries is on transparency and accountability.
(Song & Lee, 2016)	Use of social media in government	Perceptions of government transparency	USA	Secondary data "citizens"	–	The results showed that there is a positive association between citizens' use of social media as an e-government service and perceptions of government transparency.
(Alryalat et al., 2017)	NA	NA	NA	NA	NA	Based on the analysis of the literature related to e-government, it was found that transparency is one of the most frequent themes studied.
(Bargh et al., 2017)	NA	NA	NA	NA	Transitional Action Design Research (TADR)	When it comes to preserving privacy, transparency as a means of e-government seems to be a wicked problem.
(Navarro-Galera et al., 2017)	NA	NA	European countries	Web analysis	NA	Regarding e-government, the results showed that Anglo-Saxon local governments' web sites are the most transparent ones.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Saxena, 2017)	NA	NA	Oman	Web analysis	NA	As e-government is evolving in Oman to promote government transparency, privacy concerns remain an issue that needs to be tackled.
(Kumar et al., 2018)	NA	NA	India	Citizens	TAM, Diffusion of Innovations (DoI) theory, & Web Trust theory	Along with other factors, transparency strengthens e-government adoption.
(López-López et al., 2018)	E-government development	Transparency	Spain	Web analysis	–	The results showed that e-government development positively influences transparency.
(Navarro-Galera et al., 2018)	NA	NA	European countries	Web analysis	NA	With regard to e-government, the results showed the Anglo-Saxon and Nordic local governments web sites are the most transparent ones.
(Chen et al., 2019)	Digital government	Transparency	USA	Web analysis	Technology-Organization-Environment (TOE)	Digital government positively relates to fiscal transparency
(Valle-Cruz, 2019)	Transparency and access to public information	Public value in e-government	Mexico	Citizens	Public Value theory	The results showed that transparency and access to public information are correlated with public value in e-government.
(Dias, 2020)	NA	NA	NA	NA	Diffusion of Innovation theory (DOI)	Based on the review and analysis of the literature, the findings of the study showed that the e-transparency is one the factors of e-government implementation.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Faura-Martínez & Cifuentes-Faura, 2020)	NA	NA	EU	Secondary data "citizens"	NA	The study concluded by stating that through the citizens' participation in government actions through ICTs "e-government", transparency is increased, and corruption is decreased.
(Kirat Rai et al., 2020)	Transparency	Behavioural intention of the users to accept e-government system	Nepal	Government officials & employees	Unified Model for E-Government Acceptance (UMEGA)	The study found that transparency has a significant influence on the behavioural intention to use government-to-government (G2G) system.
(Singh et al., 2020)	NA	NA	NA	NA	NA	The study found that one of the most dominant constructs used in e-government studies is transparency.
(Tejedo-Romero & Araujo, 2020)	Citizens' access to Internet	Level of municipal transparency	Portugal	Secondary data	Legitimacy, Agency and Neo-Institutional Theories	It was found that citizens' access to Internet has a positive relationship with transparency level of municipalities
(Wu et al., 2020)	NA	NA	China & India	Mid- and senior-level officials in the public sector	NA	The findings of the study show that China and India public servants believe that technology plays positive role in terms of transparency and corruption reduction. This positive role depends on willingness of public figures, the readiness of the infrastructure and inequality of income.
(Kerr & Khorana, 2021)	NA	NA	EU countries & Vietnam	NA	NA	The study concluded by showing how e-government procurement through the institutional reform can be a tool to promote transparency and accountability in EU and Vietnam.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Sabani, 2021)	Transparency	E-government adoption	Indonesia	Citizens	UTAUT	The analysis of 314 responses showed that transparency among other factors was found to be the strongest influencer for e-government adoption by Indonesian citizens.
(Sandoval-Almazán et al., 2021)	NA	NA	Mexico	Government employees	NA	The analysis of 67 responses showed that transparency is one of the highly perceived concept as an advantage and the reason of implementing OG in municipalities by Mexican public servants.
(Sapraz & Han, 2021)	NA	NA	Sri Lanka	Citizens	Value Sensitive Design (VSD)	Based on the analysis of data collected from 30 citizens, the findings of the study revealed that transparency, accountability and others are crucial values in designing a DGCP.
(Xu et al., 2021)	NA	NA	China	NA	NA	The findings showed that the implementation of the 2016 Charity Law did not make a significant change in transparency scores of charities in China.

Appendix 3. Summary of SLR analysis related to accountability studies

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Petrakaki et al., 2009)	NA	NA	Greece	Government employees "public officials, supervisors, and staff"	Social Constructionist	Unlike the mainstream literature related to e-government, this study concluded that performance monitoring technology, e-government, does not always lead to accountability.
(Pina et al., 2010a)	Internet financial reporting	Disclosure of information or contents, qualitative characteristic, usability	EU countries	Web analysis	Agency theory & Institutional theory	The study concluded that despite the level of e-government not being up to par in these countries, accountability would not be improved without public organisation reform.
(Smith et al., 2010)	NA	NA	–	Secondary data	–	The study concluded that ICTs impact accountability in many ways. It was also mentioned that people may blame the technology to avoid sanctions, so there needs to be a suitable adjustment to accountability in order to avoid such dysfunctions.
(Ray, 2012)	NA	NA	India	Web, system analysis & systems analyst	TAM & UTAUT	The study identified six ICTs factors that enhance accountability.
(Rotchanakitumnuai, 2013)	E-procurement	Accountability	Thailand	Government employees "electronic procurement professionals"	–	The results showed that transparent electronic government procurement has a positive impact on accountability.
(Ruano de la Fuente, 2014)	NA	NA	Spain	Web analysis	Path Dependency	The study concluded that e-government does not lead to accountability. The government web sites seem to be used as information dissemination of their political agenda.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Lourenço et al., 2017)	NA	NA	NA	NA	Accountability theory of information	The study found that of 290 articles related to open data and accountability, only 12 papers addressed open data and accountability theory at the same time. Additionally, of 155 papers related to public accountability, only 25 discussed the process of accountability, and seven set out the stages of the accountability process. Lastly, only one paper that focused on the complete accountability process.
(Al-Shbail & Aman, 2018)	NA	NA	Jordan	Senior, middle, and operational employees from public and private sectors, documents reviews and observation	Multiple accountabilities disorder model	With regard to e-government, the study found that there are three contexts that would reduce the dysfunctions of accountability, organisational, technological, and environmental aspects.
(Petrakaki, 2018)	NA	NA	NA	NA	NA	The paper concluded that ICTs in the era of e-government make the relationship between officials and citizens horizontal, so that officials can be held accountable based on their use of technologies (unlike in the past where the relationship between them was hierarchical). However, the technology does not make the accountability better or worse; it only shifts the location of accountability and puts it on the public sector side.
(Lee et al., 2019)	Social media competency & trust in government	Intention to use e-government for (information & interaction)	Korea	Citizens	E-government Adoption Model (GAM)	The study concluded that accountability can be fulfilled by engagement of both sides, the government and citizens, and these two sides are complementary.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Clarke, 2020)	NA	NA	NA	NA	NA	The study found that accountability is one of the highlights that scholars should address when assessing Digital Government Units (DGUs).

Appendix 4. Summary of SLR analysis related to compliance studies

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Lee & Rao, 2009)	Trust in e-government & web site quality	Intention to use web site (information & transaction)	USA	Citizens & non-citizens "students"	UTAUT, TAM & E-commerce trust model	The study constructed a model of e-government compliance services by applying technology acceptance and trust approaches.
(Kuzma, 2010)	NA	NA	UK	Web analysis	NA	The findings showed that the majority of the e-government web sites related to UK members of Parliament display no compliance with the UK's DDA or WCAG.
(Samuel & Lowen, 2010)	NA	NA	NA	NA	Principal-Supervisor-Agent model	The study concluded that, along with noncorrupt supervisors, technology increases compliance.
(Ray et al., 2011)	NA	NA	Global (21 countries)	NA	Government Interoperability Frameworks (GIFs)	Besides other criteria, the study found that the compliance policy of UK e-GIFs is very comprehensive one while the GIFs compliance policy of Malaysia, South Africa, and Sri Lanka are superficial.
(Srivastava, 2011)	E-government	Compliance	NA	NA	Stakeholder theory	The study provided a framework that identifies three government areas in which e-government might have an impact on including compliance.
(Chen, 2012)	NA	NA	USA, the Netherlands, AU, Singapore	Subject experts, project managers & document review	TAM, UTAUT	This comparative study found differences related to the outcome of implementing XBRL in the four countries to promote information transparency and accountability in which entities are to comply with regulatory reporting. It also found that Singapore is the only country that has a mandatory reporting policy.

Study	Category of IV	Category of DV	Location	Unit of analysis	Theory	Findings
(Im et al., 2014)	E-government use	Citizens' compliance	Korea	Secondary data "citizens"	–	The study found that the more use of internet by citizens, the lower the degree of trust and the lower the level of compliance with government.
(Saghafi et al., 2016)	Access to information	Transparency & responsiveness in government	Iran	Experts in e-government	Value-focused Thinking (VFT)	The study found that access to information has an effect on transparency and responsiveness (answerability) in government.
(King et al., 2017)	NA	NA	NA	NA	Multi-level governance	The study posed the problem of how to make lower levels comply with higher level institutions, and proposed computerised e-government framework to solve this problem.
(Wang et al., 2020)	Use of government Apps	Citizens' compliance	Guangzhou, Wuhan, and Chengdu	Citizens	NA	The study found that the use of government applications cannot directly impact citizens' compliance
(Qi & Azmi, 2021)	Electronic invoice adoption	Compliance	China	Users	Technological, organisational and environmental framework (TOE)	Based on the analysis of 276 users' responses, the study showed that the adoption of electronic invoice positively associates with process efficiency of tax compliance.

Appendix 5. Grouped version of the survey

Section One: Demographic information

Age:

- (19 or under)
- (20 - 29)
- (30 - 39)
- (40 - 49)
- (50 - 59)
- (Over 60)

Gender:

- Male
- Female

Education:

- High school or less
- Diploma
- Bachelor's Degree
- Higher Diploma
- Master
- Doctorate

Organisation Type:

- Ministry
- Authority
- Agency
- Municipality
- University
- Center
- Fund
- Other

Organisation Size:

- Small (1 - 50) employee

Medium (51 - 200) employee

Large (201 - 500) employee

Very Large (Over 501) employee

Section Two: Cultural Dimensions Items

Code	Question
PD1	I easily conform to the wishes of someone in a higher position than mine.
PD2	It is difficult for me to refuse a request if someone senior asks me.
PD3	I tend to follow orders without asking any questions.
PD4	I find it hard to disagree with authoritative figures.
PD5	People in higher positions have more power those in lower positions.
IC1	I cannot feel happy if any of my member of my immediate family is unhappy.
IC2	I usually do what I feel is best for me, no matter what others say.
IC3	Ideally, I would like to work by myself or run my own company.
IC4	I deeply resent any invasion of my personal privacy.
IC5	My first duty is to ensure the well-being of my immediate family.
IC6	My happiness depends on my state of mind, regardless of how those around me feel.
FM1	I usually do not let others know how I am feeling.
FM2	I do not show emotions because it would mean that I am weak.
FM3	In difficult times, I try to be tough.
FM4	I should not cry even when something really bad happens.
FM5	When there is something I want, I will take risk to get it.
FM6	I should be independent and not get attached to others.
UA1	I find it difficult to function without clear directions and instructions.
UA2	I prefer specific instructions to broad guidelines.
UA3	I tend to get anxious easily when I don't know an outcome.
UA4	I feel stressed when I cannot predict consequences.
UA5	I feel safe when I am in my familiar surroundings.
UA6	I get confused easily when dealing with complex problems.

- LSO1 Respect for tradition is important to me.
- LSO2 I plan for the long term.
- LSO3 Family heritage is important to me.
- LSO4 I work hard for success in the future.
- LSO5 I do not mind giving up today's fun for success in the future
- LSO6 Persistence is important to me
- IR1 This organisation places more importance on proper conduct than on happiness at work.
- IR2 This organisation values restraint at work.
- IR3 I believe that emotions should not be shown at work.
- IR4 I wait for the right time to do something at work.
- IR5 I maintain rigid codes of beliefs and behaviour.
- IR6 Society enables its members to enjoy their lives and have fun.

Section Three: E-government Use and other variables related

- | Code | Question |
|------|---|
| EgU1 | I am currently a heavy user of the system. |
| EgU2 | I am currently a light user of the system. |
| EgU3 | I often use the system to do my job. |
| EgU4 | Using e-government applications is mandatory to do my job. |
| EgU5 | My use of the system is mandatory. |
| EgU6 | Using the system is certainly compulsory in my job. |
| EgU7 | The use of e-government application at work cannot be circumvented |
| PT1 | I am aware that my activities at work are monitored. |
| PT2 | My organization knows what I am doing on the system. |
| PT3 | I am conscious that my organization knows what I am doing. |
| PT4 | I know that what I do is visible to others within the organisation. |
| PT5 | When I make decisions, my organization gives others within the organization the ability to know about it. |
| PT6 | My work is like a glass building in which everything I do is visible for others within the organization to see. |
| PT7 | My organization puts everything I do "out on the table" for others within the organization to see. |

- SRC1 I comply with corporate policy.
- SRC2 I follow the procedures established by my organization.
- SRC3 I comply with work-related procedures.
- SRC4 I comply with organizational policy.
- SRC5 I seek information about appropriate organization policies and procedures before acting.
- SRC6 I perform my jobs according to defined procedures.
- PA1 I am accountable for my actions at work.
- PA2 I often have to explain why I do certain things at work.
- PA3 There is a likelihood that doing the wrong thing would lead to consequences.
- PA4 Colleagues at my organization are accountable for their actions.
- PA5 Colleagues at my organization have to explain why they do certain things.

Appendix 6. Randomised version of the survey

Section One: Demographic information

Age:

(19 or under)

(20 - 29)

(30 - 39)

(40 - 49)

(50 - 59)

(Over 60)

Gender:

Male

Female

Education:

High school or less

Diploma

Bachelor's Degree

Higher Diploma

Master

Doctorate

Organisation Type:

Ministry

Authority

Agency

Municipality

University

Center

Fund

Other

Organisation Size:

Small (1 - 50) employee

Medium (51 - 200) employee

Large (201 - 500) employee
Very Large (Over 501) employee

Section Two: Cultural Dimensions Items

Code	Question
IC3	Ideally, I would like to work by myself or run my own company.
PD1	I easily conform to the wishes of someone in a higher position than mine.
IR2	This organisation values restraint at work.
LSO6	Persistence is important to me
FM6	I should be independent and not get attached to others.
UA5	I feel safe when I am in my familiar surroundings.
IC5	My first duty is to ensure the well-being of my immediate family.
PD2	It is difficult for me to refuse a request if someone senior asks me.
IR1	This organisation places more importance on proper conduct than on happiness at work.
LSO2	I plan for the long term.
UA2	I prefer specific instructions to broad guidelines.
PD5	People in higher positions have more power those in lower positions.
IC6	My happiness depends on my state of mind, regardless of how those around me feel.
IR3	I believe that emotions should not be shown at work.
LSO1	Respect for tradition is important to me.
FM5	When there is something I want, I will take risk to get it.
UA1	I find it difficult to function without clear directions and instructions.
IR4	I wait for the right time to do something at work.
PD3	I tend to follow orders without asking any questions.
IC1	I cannot feel happy if any of my member of my immediate family is unhappy.
LSO4	I work hard for success in the future.
FM1	I usually do not let others know how I am feeling.
UA3	I tend to get anxious easily when I don't know an outcome.
IC2	I usually do what I feel is best for me, no matter what others say.

- IR5 I maintain rigid codes of beliefs and behaviour.
- FM3 In difficult times, I try to be tough.
- LSO5 I do not mind giving up today's fun for success in the future
- PD4 I find it hard to disagree with authoritative figures.
- UA4 I feel stressed when I cannot predict consequences.
- IC4 I deeply resent any invasion of my personal privacy.
- FM4 I should not cry even when something really bad happens.
- IR6 Society enables its members to enjoy their lives and have fun.
- LSO3 Family heritage is important to me.
- FM2 I do not show emotions because it would mean that I am weak.
- UA6 I get confused easily when dealing with complex problems.

Section Three: Items of E-government Use and other variables related

- | Code | Question |
|------|--|
| PA4 | Colleagues at my organization are accountable for their actions. |
| SRC5 | I seek information about appropriate organization policies and procedures before acting. |
| PT3 | I am conscious that my organization knows what I am doing. |
| EgU3 | I often use the system to do my job. |
| SRC4 | I comply with organizational policy. |
| PA5 | Colleagues at my organization have to explain why they do certain things. |
| PT1 | I am aware that my activities at work are monitored. |
| EgU4 | Using e-government applications is mandatory to do my job. |
| PA3 | There is a likelihood that doing the wrong thing would lead to consequences. |
| SRC1 | I comply with corporate policy. |
| EgU5 | My use of the system is mandatory. |
| PT2 | My organization knows what I am doing on the system. |
| SRC2 | I follow the procedures established by my organization. |
| PA1 | I am accountable for my actions at work. |
| EgU6 | Using the system is certainly compulsory in my job. |

- PT4 I know that what I do is visible to others within the organisation.
- PA2 I often have to explain why I do certain things at work.
- SRC3 I comply with work-related procedures.
- PT5 When I make decisions, my organization gives others within the organization the ability to know about it.
- EgU1 I am currently a heavy user of the system.
- PT6 My work is like a glass building in which everything I do is visible for others within the organization to see.
- EgU7 The use of e-government application at work cannot be circumvented
- SRC6 I perform my jobs according to defined procedures.
- PT7 My organization puts everything I do "out on the table" for others within the organization to see.
- EgU2 I am currently a light user of the system.

Information Statement

Dear Sir/Madam

We are conducting research to explore the impact of organisational culture and E-government use in terms of transparency, accountability and compliance in public organisations in Saudi Arabia in which the study targets government employees who use e-government systems and applications to perform their job. "E-government use" is the use of the Internet applications in order to foster accessibility and delivery of service and information provided by government to employees, in which the use of these application is mandatory for them to do their job.

Your assistance in this research will be invaluable and is greatly appreciated. Participation involves completing a survey, which will take approximately 15-20 minutes. Participation in this research is completely voluntary and your responses will be completely anonymous. Participants may withdraw at any time without prejudice or negative consequences, and does not need a reason to be provided. By clicking next you, are providing your implied consent to participate in the research project.

Any information provided by you through the survey will be held as strictly confidential. Data collected by this survey will be stored securely for 7 years before being destroyed, and will not be disclosed to any parties besides the researchers unless required to do so by law.

Your interest and consideration are greatly appreciated. If you need any additional information from us, please let us know by P.T.Dell@curtin.edu.au, richard.baskerville@curtin.edu.au or abdullah.aldarazi@postgrad.curtin.edu.au

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number HRE2019-0699). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.

Thank you for considering to participate in this study.

Sincerely,

Associate Professor Peter Dell
School of Management
Curtin University, Perth, Western Australia
Email: P.T.Dell@curtin.edu.au

Professor Richard Baskerville
School of Management

Curtin University, Perth, Western Australia
Email: richard.baskerville@curtin.edu.au

Abdullah Aldarazi
Ph.D. Candidate, School of Management
Curtin University, Perth, Western Australia
Email: abdullah.aldarazi@postgrad.curtin.edu.au

Appendix 8. Declaration, Phase one recruitment material, Phase one information statement, and 65 items

MUEEN ALBREIHI		
NAATI ACCREDITED TRANSLATOR [ENGLISH<=> ARABIC] AT LEVEL 3.	NAATI No: CPN9PL59Q	
Mobile: 0412 209 977	Email: amueen@gmail.com	
Address: 5 Kuringai Way Wollert 3750		

English Translation of Questionnaire in the Arabic Language Translator's Declaration

13 September 2019

I, Mueen Albreihi, of 5 Kuringai Way Wollert Vic 3750, declare that I am a NAATI certified translator in the Arabic-English languages, both directions. I certify herein with that I have translated, to the best of my knowledge and ability, a research project from the Arabic language into the English language that was requested by Mr Abdullah Aldarazi, of 112A Station Street, East Cannington WA 6107. The research project is 6 pages in total in the Arabic language, and the English translation of which is also 6 pages. True copies of the Arabic research project and the translation of which are stamped with my NAATI stamp and signed by me. A hard copy of the stamped and signed documents will be posted to Mr Aldarazi's address nominated above, and I will scan a pdf copy to him through his email. Also, I will email a copy in world format to Mr Aldarazi as requested by him.



Information Statement

Dear Sir/Madam

We are conducting research to explore the impact of organisational culture and E-government use in terms of transparency, accountability and compliance in public organisations in Saudi Arabia. Your support and help in this research will be invaluable and is greatly appreciated.

Participation involves the completion of a survey, which will take approximately 15-20 minutes. Participation in this research is optional and your responses will be totally anonymous. Participants may withdraw at any time without bias or penalties and they are not required to give a reason as to why does not need to be provided. By clicking next, you are providing your consent to participate in this research project.

Any information provided by you through the survey will be held as strictly confidential. Data collected by this survey will be stored securely for 7 years before being destroyed and will not be divulged to any parties aside from the researchers, unless required to do so by law.

Your interest and consideration are greatly appreciated. If you need any additional information from us, please let us know by P.T.Dell@curtin.edu.au, richard.baskerville@curtin.edu.au or abdullah.aldarazi@postgrad.curtin.edu.au

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number XXXXXXXX). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.

Sincerely,

Associate Professor Peter Dell
School of Management
Curtin University, Perth, Western Australia
Email: P.T.Dell@curtin.edu.au

Professor Richard Baskerville
School of Management
Curtin University, Perth, Western Australia
Email: richard.baskerville@curtin.edu.au

Abdullah Aldarazi
Ph.D. Candidate, School of Management
Curtin University, Perth, Western Australia
Email: abdullah.aldarazi@postgrad.curtin.edu.au



General Information:

Age:

- (19 or under)
- (20 - 29)
- (30 - 39)
- (40 - 49)
- (50 - 59)
- (Over 60)

Gender:

- Male
- Female

Education:

- High school or less
- Diploma
- Bachelor's Degree
- Higher Diploma
- Master/Doctorate

Organization Type:

- Ministry
- Authority
- Agency
- Municipality
- University
- Center
- Fund
- Other: Please specify
- Non-governmental organization

Organization Size:

- Small (1 - 50) employee
- Medium (51 - 200) employee
- Large (201 - 500) employee
- Very Large (Over 501) employee



	Perceived Accountability:	Strongly Agree			Strongly Disagree
1	I am accountable for my actions at work.				
2	I often have to explain why I do specific things at work.				
3	There is a possibility that doing the wrong thing would lead to consequences.				
4	At my organization, colleagues are accountable for their actions.				
5	At my organization, colleagues are required to explain why they do certain things.				

	Self-Reported Compliance:	Strongly Agree			Strongly Disagree
6	I comply with the corporate policy.				
7	I abide by the procedures established by my organization.				
8	I comply with work-related procedures.				
9	I comply with organizational policy.				
10	I seek information about relevant organizational policies and procedures before acting.				
11	I complete my duties in accordance with defined procedures.				

	Perceived Transparency:	Strongly Agree			Strongly Disagree
12	I am aware that my work activities are supervised.				
13	My organization is aware of what I am doing on the system.				
14	I am conscious of the fact that my organization knows what I am doing.				
15	I know that what I do is visible to other people within the organization.				
16	My organization allows others within the organization to know when I make decisions.				
17	My work is like a glass building in which everything I do is visible for others within the organization to see.				
18	My organization publicizes everything I do to be "out on the table" for others within the organization to see.				

	E-government Use:	Strongly Agree			Strongly Disagree
19	I am currently a heavy user of the system.				
20	I am currently a light user of the system.				
21	I often use the system to do my job.				
22	Using e-government applications is obligatory in doing my job.				
23	It is mandatory that I use the system.				
24	Using the system is most definitely compulsory in my job.				
25	The use of e-government application at work cannot be skipped.				

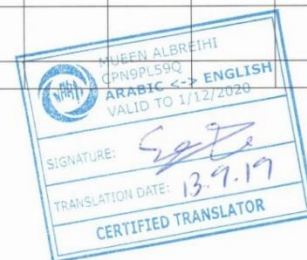


	Power Distance: Items	Strongly Agree				Strongly Disagree
26	I easily adapt to the needs of someone in a higher position than mine.					
27	It is difficult for me to refuse a request if a senior person asks me.					
28	I tend to follow orders without asking any questions.					
29	It is difficult for me to disagree with figures of high authority.					
30	People in higher positions have more power those in lower positions.					

	Individualism/Collectivism:	Strongly Agree				Strongly Disagree
31	I cannot feel happy if any member of my immediate family is unhappy.					
32	I typically do what I feel is best for me, regardless of what others say.					
33	It would be ideal for me to work individually or run my own company.					
34	I despise any invasion of my privacy.					
35	My first duty is to ensure the well-being of my immediate family.					
36	My happiness is dependent on my state of mind, regardless of how those around me feel.					

	Indulgence/Restraint:	Strongly Agree				Strongly Disagree
37	It is more important for this organization to conduct work properly than to be happy at work					
38	This organization values restraint at work.					
39	I believe that emotions should not be exposed at work.					
40	I wait for the right time to do something at work.					
41	I uphold rigid codes of beliefs and behaviour.					
42	Society enables its members to enjoy their lives and have fun.					

	Long-term/Short-term Orientation:	Strongly Agree				Strongly Disagree
43	Respecting tradition is important to me.					
44	I plan for the long-term.					
45	Family heritage is important to me.					
46	I work hard for success in the future.					
47	I do not mind sacrificing today's fun for success in the future.					
48	To me, it is important to be persistent.					



	Uncertainty Avoidance:	Strongly Agree				Strongly Disagree
49	I find it difficult to function without clear directions and instructions.					
50	I prefer specific instructions rather than broad guidelines.					
51	I tend to get anxious easily when I don't know an answer.					
52	I feel stressed when I cannot foresee potential consequences.					
53	I feel safe when I am in familiar surroundings.					
54	I easily get confused when dealing with difficult problems.					

	Femineity/Masculinity:	Strongly Agree				Strongly Disagree
55	I do not usually let others know how I am feeling.					
56	Showing emotions means that I am weak					
57	In difficult times, I try to be tough.					
58	I should not cry even whenever something bad happens.					
59	When there is something I want, I will take risks to get it.					
60	I should remain independent and not get attached to others.					



بيان معلومات البحث

سيدي العزيز / سيدي العزيزة

نحن نجري بحثاً لاستكشاف تأثير الثقافة التنظيمية واستخدام الحكومة الإلكترونية بخصوص الشفافية والمساءلة والالتزام في المؤسسات العامة في المملكة العربية السعودية. مساعدتكم في هذا البحث لا تقدر بثمن وتحظى بتقدير كبير.

تتضمن المشاركة إكمال دراسة استقصائية تستغرق حوالي من 15 - 20 دقيقة. المشاركة في هذا البحث تطوعية تماماً وستكون إجاباتك سرية تماماً. يمكن للمشاركين الانسحاب في أي وقت دون ضرر أو عواقب سلبية، حيث أن المشاركون لا يحتاجون إلى تقديم أي سبب لذلك. عند الضغط على "التالي"، هذا يدل على الموافقة الضمنية للمشاركة في البحث.

سيتم الاحتفاظ بأي معلومات مقدمة من خلال الاستبيان بسرية تامة. سيتم تخزين البيانات التي تم جمعها بواسطة هذا الاستبيان بشكل آمن لمدة 7 سنوات قبل تدميرها، ولن يتم الكشف عنها لأي أطراف إلى جانب الباحثين إلا إذا كان ذلك مطلوباً بموجب القانون.

ممتنين جداً لاهتمامك. إذا كنت بحاجة إلى أي معلومات إضافية منا، فالرجاء مراسلتنا عن طريق البريد الإلكتروني التالي:

P.T.Dell@curtin.edu.au

richard.baskerville@curtin.edu.au

abdullah.aldarazi@postgrad.curtin.edu.au

تمت الموافقة من قبل لجنة أخلاقيات البحوث الإنسانية بجامعة كيرتين (HREC) على هذه الدراسة (رقم HREC XXXXXXXX). إذا كنت ترغب في مناقشة الدراسة مع شخص ليست له علاقة بالدراسة، على وجه الخصوص، أو أي أمور تتعلق بإجراء الدراسة أو حقوقك كمشارك، أو إذا كنت ترغب في تقديم شكوى سرية، يمكنك الاتصال بمسؤول الأخلاقيات على (08)92669233

أو مدير النزاهة البحثية على (08)92667093

أو البريد الإلكتروني hrec@curtin.edu.au

مع خالص التحيات،

أستاذ مشارك بيتر ديل

كلية الإدارة

جامعة كيرتين، بيرث، أستراليا الغربية

البريد الإلكتروني: P.T.Dell@curtin.edu.au

البروفيسور ريتشارد باسكرفيل

كلية الإدارة

جامعة كيرتين، بيرث، أستراليا الغربية

البريد الإلكتروني: richard.baskerville@curtin.edu.au

عبد الله الدرازي

طالب دكتوراه، كلية الإدارة

جامعة كيرتين، بيرث، أستراليا الغربية

البريد الإلكتروني: abdullah.aldarazi@postgrad.curtin.edu.au



تقوم الحكومات في كل مكان بتطبيق الحكومة الإلكترونية حيث أنها أصبحت رئيسية في العمل اليومي لموظفي الحكومة ، ولكن هناك القليل من الدراسات حول كيفية تأثيرها على الموظفين الذين يستخدمونها. هل تجعلهم أكثر كفاءة في العمل؟ هل هم أكثر سعادة نتيجة لذلك ، أم أن هناك بعض النتائج الأخرى؟

أقوم بإجراء استبيان للمساعدة في فهم رأي الموظفين في هذه القضايا. سيستغرق الاستبيان حوالي 15 دقيقة من وقتك ، وهو طوعي وسري.

للمشاركة في الاستبيان ، يرجى <النقر هنا>. إذا لم يعمل هذا الرابط ، فيرجى لصق العنوان التالي في متصفحك:
<http://some.url.here>

تمت الموافقة من قبل لجنة أخلاقيات البحوث الإنسانية بجامعة كيرتين (HREC) على هذه الدراسة (رقم HREC XXXXXXXX). إذا كنت ترغب في مناقشة الدراسة مع شخص ليست له علاقة بالدراسة ، علم ، وحده الخصص ، ، أه أي أمور تتعلق بإجراء الدراسة أو حقوقك كمشارك ، أو إذا كنت ترغب في تقديم شكوى سرية ، يدا (+61)892669223 الأخلاقيات على (+61)892667093

أو مدير النزاهة البحثية على

أو البريد الإلكتروني hrec@curtin.edu.au

مع خالص التحيات،

عبدالله الدرازي



معلومات عامة:

العمر:

(19 فأقل)

(20 - 29)

(30 - 39)

(40 - 49)

(50 - 59)

(60 فأكثر)

الجنس:

ذكر

أنثى

المستوى التعليمي:

ثانوية أو أقل

دبلوم

بكلوريوس

دبلوم عالي

ماجستير/دكتوراه

نوع الجهة:

وزارة

هيئة

مؤسسة

أمانة

جامعة

مركز

صندوق

أخرى: الرجاء التحديد

جهة غير حكومية

حجم الجهة:

صغيرة (1 - 50) موظف

متوسطة (51 - 200) موظف

كبيرة (201 - 500) موظف

كبيرة جداً (أكثر من 501) موظف



لا أوافق بشدة	أوافق بشدة	إدراك المساءلة
		1 أنا مسؤول عن أفعالي في العمل.
		2 غالباً ما يجب علي شرح سبب قيامي ببعض الأشياء في العمل.
		3 وهناك احتمال أن فعل الشيء الخطأ من شأنه أن يؤدي إلى عواقب.
		4 زملائي في المنظمة مسؤولون عن أعمالهم.
		5 يتعين علي زملائي في المنظمة أن يوضحوا سبب قيامهم بأشياء معينة.

لا أوافق بشدة	أوافق بشدة	الإبلاغ الذاتي عن الالتزام
		6 التزم بسياسة المنظمة.
		7 أتبع الإجراءات التي وضعتها منظمتي.
		8 التزم بالإجراءات المتعلقة بالعمل.
		9 التزم بالسياسة التنظيمية.
		10 أسعى للحصول على معلومات حول سياسات وإجراءات المنظمة قبل التصرف.
		11 أقوم بوظائفي وفقاً للإجراءات المحددة.

لا أوافق بشدة	أوافق بشدة	إدراك الشفافية
		12 أدرك أن أنشطتي في العمل تتم مراقبتها.
		13 تعلم منظمتي ما أقوم به على النظام.
		14 أدرك أن منظمتي تعلم بما أقوم به.
		15 أعلم أن ما أقوم به مرني من قبل الآخرين داخل المنظمة.
		16 عندما أتخذ القرارات ، تمنح منظمتي الآخرين داخل المنظمة القدرة على معرفة ذلك.
		17 عملي يشبه مبنى زجاجي حيث كل ما أقوم به يكون مرئياً للآخرين داخل المنظمة.
		18 تضع مؤسستي كل ما أقوم به "على الطاولة" ليراها الآخرون داخل المنظمة.

لا أوافق بشدة	أوافق بشدة	استخدام الحكومة الإلكترونية
		19 حالياً استخدم النظام بشكل كبير.
		20 حالياً استخدم النظام بشكل بسيط.
		21 غالباً ما أستخدم النظام للقيام بعملتي.
		22 استخدام تطبيقات الحكومة الإلكترونية إلزامي للقيام بعملتي.
		23 استخدامي للنظام إلزامي.
		24 استخدام النظام بكل تأكيد إلزامي للقيام عملي.
		25 لا يمكن التحايل على استخدام تطبيق الحكومة الإلكترونية في العمل.



لا أوافق بشدة	أوافق بشدة	مؤشر مسافة السلطة
		26 أتوافق بسهولة مع رغبات شخص أعلى مني في المرتبة الوظيفية.
		27 من الصعب علي رفض طلب موجه من شخص أقدم مني في المنظمة.
		28 أميل إلى اتباع الأوامر دون طرح أي أسئلة.
		29 أجد صعوبة في الاختلاف مع أشخاص ذو سلطة.
		30 يتمتع الأشخاص الذين يشغلون مناصب عليا بمزيد من القوة في المناصب الدنيا.

لا أوافق بشدة	أوافق بشدة	مؤشر الفردية مقابل الجماعية
		31 لا أشعر بالسعادة إذا كان أي فرد من أفراد أسرتي المباشرة غير سعيد.
		32 عادة أفعل ما أشعر أنه الأفضل بالنسبة لي ، بغض النظر عن ما يقوله الآخرون.
		33 في الوضع المثالي ، أفضل أن أعمل بمفردي أو أن أدير شركتي الخاصة.
		34 أستاذ بشدة من أي انتهاك لخصوصيتي.
		35 واجبي الأول هو ضمان رفاهية أسرتي المباشرة.
		36 تعتمد سعادتني على حالتي الذهنية ، بغض النظر عن شعور من حولي.

لا أوافق بشدة	أوافق بشدة	مؤشر الاسترسال مقابل ضبط الذات
		37 تولي منظمتي أهمية أكبر للسلوك المناسب أكثر من الاهتمام بالسعادة في العمل.
		38 تقدر منظمتي ضبط الذات في العمل.
		39 اعتقد أنه لا ينبغي إظهار المشاعر في العمل.
		40 انتظر الوقت المناسب لفعل أي شيء في العمل.
		41 أحافظ على القواعد الصارمة في المعتقدات والسلوك.
		42 يتيح المجتمع لأعضائه الاستمتاع بحياتهم.

لا أوافق بشدة	أوافق بشدة	مؤشر التوجه طويل المدى مقابل قصير المدى
		43 احترم التقاليد مهم بالنسبة لي.
		44 أخطط على المدى الطويل.
		45 التراث الأسري مهم بالنسبة لي.
		46 أنا أعمل بجد لتحقيق النجاح في المستقبل.
		47 لا مانع من التخلي عن متعة اليوم لتحقيق النجاح في المستقبل.
		48 المثابرة مهم بالنسبة لي.



لا أوافق بشدة			أوافق بشدة	مؤشر تجنب عدم الفين	
				أجد صعوبة في العمل دون وجود توجيهات وتعليمات واضحة.	49
				أفضل تعليمات محددة للتوجيهات العامة.	50
				أميل إلى القلق بسهولة عندما لا أعرف حصيلة عملي.	51
				أشعر بالتوتر عندما لا أستطيع التنبؤ بالعواقب.	52
				أشعر بالأمان عندما أكون في محيطي المألوف.	53
				أشعر بالحيرة بسهولة عند التعامل مع المشاكل المعقدة.	54

لا أوافق بشدة			أوافق بشدة	مؤشر الذكورية مقابل الانوئية	
				عادة لا أدع الآخرين معرفة شعوري.	55
				لا أبدي المشاعر لأن ذلك يعني أنني ضعيف.	56
				في الأوقات الصعبة ، أحاول أن أكون قوياً.	57
				لا ينبغي لي البكاء حتى عندما يحدث شيء سيء جداً.	58
				عندما يكون هناك شيء أريده ، سأخاطر للحصول عليه.	59
				يجب أن أكون مستقلاً وألا أكون متعلق بالآخرين.	60



Appendix 9. Phase one HREC ethics approval



15-Oct-2019

Name: Peter Dell
Department/School: Curtin University
Email: P.T.Dell@curtin.edu.au

Dear Peter Dell

RE: Ethics Office approval
Approval number: HRE2019-0699

Thank you for submitting your application to the Human Research Ethics Office for the project **The relative impact of organisational culture and e-government adoption on transparency, accountability and compliance in public organisations in Saudi Arabia.**

Your application was reviewed through the Curtin University Low risk review process.

The review outcome is: **Approved.**

Your proposal meets the requirements described in the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research (2007)*.

Approval is granted for a period of one year from 15-Oct-2019 to 14-Oct-2020. Continuation of approval will be granted on an annual basis following submission of an annual report.

Personnel authorised to work on this project:

Name	Role
Aldarazi, Abdullah	Student
Dell, Peter	CI
Baskerville, Richard	Supervisor

Approved documents:

Document

Standard conditions of approval

1. Research must be conducted according to the approved proposal
2. Report in a timely manner anything that might warrant review of ethical approval of the project including:
 - proposed changes to the approved proposal or conduct of the study
 - unanticipated problems that might affect continued ethical acceptability of the project
 - major deviations from the approved proposal and/or regulatory guidelines
 - serious adverse events
3. Amendments to the proposal must be approved by the Human Research Ethics Office before they are implemented (except where an amendment is undertaken to eliminate an immediate risk to participants)

4. An annual progress report must be submitted to the Human Research Ethics Office on or before the anniversary of approval and a completion report submitted on completion of the project
5. Personnel working on this project must be adequately qualified by education, training and experience for their role, or supervised
6. Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation that bears on this project
7. Changes to personnel working on this project must be reported to the Human Research Ethics Office
8. Data and primary materials must be retained and stored in accordance with the [Western Australian University Sector Disposal Authority \(WAUSDA\)](#) and the [Curtin University Research Data and Primary Materials policy](#)
9. Where practicable, results of the research should be made available to the research participants in a timely and clear manner
10. Unless prohibited by contractual obligations, results of the research should be disseminated in a manner that will allow public scrutiny; the Human Research Ethics Office must be informed of any constraints on publication
11. Approval is dependent upon ongoing compliance of the research with the [Australian Code for the Responsible Conduct of Research](#), the [National Statement on Ethical Conduct in Human Research](#), applicable legal requirements, and with Curtin University policies, procedures and governance requirements
12. The Human Research Ethics Office may conduct audits on a portion of approved projects.

Special Conditions of Approval

Nil

This letter constitutes low risk/negligible risk approval only. This project may not proceed until you have met all of the Curtin University research governance requirements.

Should you have any queries regarding consideration of your project, please contact the Ethics Support Officer for your faculty or the Ethics Office at hrec@curtin.edu.au or on 9266 2784.

Yours sincerely



Amy Bowater
Ethics, Team Lead

Appendix 10. Host organisation approval in Arabic

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



المملكة العربية السعودية
معهد الإدارة العامة
مركز البحوث والدراسات

(مذكرة داخلية)

التاريخ : ٧/٣/١٤٤١ هـ

من : مدير عام مركز البحوث والدراسات .
إلى : سعادة الأستاذ/ عبدالله بن إبراهيم الدرازي .
بشأن : تطبيق بحث على المعهد .

السلام عليكم ورحمة الله وبركاته،،،

إشارة إلى طلبكم تطبيق بحث بعنوان " تأثير الثقافة التنظيمية واستخدام الحكومة الإلكترونية بخصوص الشفافية والمساءلة والالتزام في المؤسسات العامة في المملكة العربية السعودية" على متدربي المعهد، نفيدكم بموافقة سعادة نائب المدير العام للبحوث والاستشارات على تطبيق البحث المذكور أعلاه على الفئة المستهدفة، علماً أن مركز البحوث والدراسات ليس معنياً بجمع البيانات الخاصة بهذا البحث.

وتقبلوا وافر التحية و التقدير، ، ،



مدير عام مركز البحوث والدراسات



د. وسيم بن سلمان النصير

-صورة لمساعدة مدير إدارة الدعم المنهجي والإحصائي-

Appendix 11. Mann-Whitney Test

	Test Statistics^a									
	Power Distance	Individualism Collectivism	Indulgence Restraint	Long-term Short-term Orientation	Uncertainty Avoidance	Femineity Masculinity	E-government Use	Perceived Transparency	Perceived Accountability	Self-Reported Compliance
Mann-Whitney U	17885.500	18402.000	18639.500	17822.500	19154.500	18201.500	18709.500	17383.500	18215.000	18997.000
Wilcoxon W	27201.500	27718.000	59394.500	27002.500	28745.500	57822.500	27889.500	26161.500	27260.000	28177.000
Z	-1.340	-.672	-.874	-1.227	-.377	-.670	-.167	-1.085	-.823	-.153
Asymp. Sig. (2-tailed)	.180	.502	.382	.220	.706	.503	.867	.278	.411	.879

a. Grouping Variable: Host organisation or Social media

Appendix 12. Phase two HREC ethics approval



Research Office at Curtin

GPO Box U1987
Perth Western Australia 6845

Telephone +61 8 9286 7863
Facsimile +61 8 9286 3793
Web research.curtin.edu.au

28-Aug-2020

Name: Peter Dell
Department/School: School of Management
Email: P.T.Dell@curtin.edu.au

Dear Peter Dell

RE: Ethics Office approval
Approval number: HRE2020-0481

Thank you for submitting your application to the Human Research Ethics Office for the project **The Relative Impact of Organisational Culture and E-government Adoption on Transparency, Accountability and Compliance in Public Organisations in Saudi Arabia - Phase 2**.

Your application was reviewed through the Curtin University Low risk review process.

The review outcome is: **Approved**.

Your proposal meets the requirements described in the National Health and Medical Research Council's (NHMRC) *National Statement on Ethical Conduct in Human Research (2007)*.

Approval is granted for a period of one year from 28-Aug-2020 to 27-Aug-2021. Continuation of approval will be granted on an annual basis following submission of an annual report.

Personnel authorised to work on this project:

Name	Role
Aldarazi, Abdullah	Student
Dell, Peter	Supervisor

Approved documents:

Document

Standard conditions of approval

1. Research must be conducted according to the approved proposal
2. Report in a timely manner anything that might warrant review of ethical approval of the project including:
 - proposed changes to the approved proposal or conduct of the study
 - unanticipated problems that might affect continued ethical acceptability of the project
 - major deviations from the approved proposal and/or regulatory guidelines
 - serious adverse events
3. Amendments to the proposal must be approved by the Human Research Ethics Office before they are implemented (except where an amendment is undertaken to eliminate an immediate risk to participants)
4. An annual progress report must be submitted to the Human Research Ethics Office on or before the anniversary of approval and a completion

- report submitted on completion of the project
5. Personnel working on this project must be adequately qualified by education, training and experience for their role, or supervised
 6. Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, that bears on this project
 7. Changes to personnel working on this project must be reported to the Human Research Ethics Office
 8. Data and primary materials must be retained and stored in accordance with the [Western Australian University Sector Disposal Authority \(WAUSDA\)](#) and the [Curtin University Research Data and Primary Materials policy](#)
 9. Where practicable, results of the research should be made available to the research participants in a timely and clear manner
 10. Unless prohibited by contractual obligations, results of the research should be disseminated in a manner that will allow public scrutiny; the Human Research Ethics Office must be informed of any constraints on publication
 11. Approval is dependent upon ongoing compliance of the research with the [Australian Code for the Responsible Conduct of Research](#), the [National Statement on Ethical Conduct in Human Research](#), applicable legal requirements, and with Curtin University policies, procedures and governance requirements
 12. The Human Research Ethics Office may conduct audits on a portion of approved projects.

Special Conditions of Approval

It is the responsibility of the Chief Investigator to ensure compliance with the <https://www.nhmrc.gov.au/guidelines-publications/e72> as to the latest available advice from the Government or the University regarding COVID-19.

This letter constitutes low risk/negligible risk approval only. This project may not proceed until you have met all of the Curtin University research governance requirements.

Should you have any queries regarding consideration of your project, please contact the Ethics Support Officer for your faculty or the Ethics Office at hrec@curtin.edu.au or on 9266 2784.

Yours sincerely



Amy Bowater
Ethics, Team Lead

Appendix 13. Phase two recruitment material

Governments everywhere are rolling out e-government applications and they're becoming central to government employees' daily work, but there has been very little research into how they affect the employees who use them. Do they make people more efficient at work? Are they happier as a result, or is there some other outcome?

I am conducting an interview to help understand what employees think about these issues. The interview will take about an hour to an hour and half, and is voluntary and anonymous.

To participate in the interview, please contact me via email provided below.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number HRE2020-0481). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on +61-8-9266-9223 or the Manager, Research Integrity on +61-8-9266-7093 or email hrec@curtin.edu.au.

Yours sincerely,

Abdullah Aldarazi
Ph.D. Candidate, School of Management
Curtin University, Perth, Western Australia
abdullah.aldarazi@postgrad.curtin.edu.au

Appendix 14. Phase two information statement



Information Statement

Dear Sir/Madam

We are conducting a Ph.D. research to explore the impact of organisational culture and E-government use in terms of transparency, accountability and compliance in public organisations in Saudi Arabia. Your assistance in this research will be invaluable and is greatly appreciated.

Participation involves participating in an interview which will take approximately an hour to an hour and half. Apart from giving up your time, we do not expect that there will be any risks or inconveniences associated with taking part in this study. Interviews will be audio-recorded and transcribed by the researcher prior to analysis. The interviewee has the right to request that the audio record be turned off at any time during the interviews. The information we collect will be kept under secure conditions at Curtin University for seven years after the research is published and then it will be destroyed. Participants' real names and details will remain confidential and will not appear in any publications resulting from the research. Participation in this research is completely voluntary and your responses will be completely anonymous. Participants may withdraw at any time without prejudice or negative consequences, and does not need a reason to be provided. Any information provided by you through the interview will not be disclosed to any parties besides the researchers unless required to do so by law.

Your interest and consideration are greatly appreciated. If you need any additional information from us, please let us know by abdullah.aldarazi@postgrad.curtin.edu.au or P.T.Dell@curtin.edu.au.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number HRE2020-0481). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.

At any time you have the right to:

- Decline to participate
- Decline to answer any particular question
- Withdraw from the study
- Ask any questions about the study at any time during participation
- Provide information on the understanding that your name will not be used unless you give permission to the researcher
- Be given access to a summary of the project findings upon your request
- If you agree to participate, please sign the Consent Form attached and email it back to the Abdullah's email provided below

Sincerely,

Abdullah Aldarazi
Ph.D. Candidate, School of Management
Curtin University, Perth, Western Australia
abdullah.aldarazi@postgrad.curtin.edu.au

Associate Professor Peter Dell
School of Management Curtin University,
Perth, Western Australia
P.T.Dell@curtin.edu.au

Appendix 15. Phase two consent form

E-government Use Project



CONSENT FORM

HREC Project Number:	<i>HRE2020-0481</i>
Project Title:	<i>E-government Use Project</i>
Chief Investigator:	<i>Associate Professor, Peter Dell, Principle Supervisor</i>
Student researcher:	<i>Abdullah Aldarazi</i>
Version Number:	<i>1</i>
Version Date:	<i>21/08/2020</i>

- I believe I understand the purpose, extent and possible risks of my involvement in this project.
- I voluntarily consent to take part in this research project.
- I have had an opportunity to ask questions and I am satisfied with the answers I have received.
- I understand that this project has been approved by Curtin University Human Research Ethics Committee and will be carried out in line with the National Statement on Ethical Conduct in Human Research (2007).
- I understand I will receive a copy of this Information Statement and Consent Form.

<input type="checkbox"/> I do	<input type="checkbox"/> I do not	consent to being audio-recorded
-------------------------------	-----------------------------------	---------------------------------

Participant Name	
Participant Signature	
Date	

Declaration by researcher: I have supplied an Information Letter and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent and possible risks of their involvement in this project.

Researcher Name	
Researcher Signature	
Date	

Note: All parties signing the Consent Form must date their own signature.

Appendix 16. Interview guide

Name: Number: Date:

Start Time: Finish Time: Duration:

Reminders:

- *Appreciation of accepting to participate*
- *Disclosure of research intent*
 - *As you have been through the Information Statement, do you have any question about i.e. “terminologies”?*
- *Ethics, informing participants that no harm is associated “Confidentiality and Anonymity.*
- *Participants’ right to:*
 - *Decline to answer any particular question*
 - *Withdraw from the study*
 - *Ask any questions about the study at any time during participation*
- *Anticipated duration: Break it down to two sessions if they want to.*
- *No wrong answers*
- *It is fine to say I do not know.*

Section 1: Further rapport development: (Leech, 2002; Spradley, 1979)

- How the day has been?
- How is the weather in Saudi Arabia?
- Current news events in Saudi Arabia;
- Etc.

Section 2: (Type of questions: *Grand tour and introducing* questions: (Qu & Dumay, 2011; Spradley, 1979))

- Can you describe a typical day in your department?
- Can you please tell me what your department’s organisational structure?
- How long has your department been using e-government systems?
- Etc.

Section 3: Organisational culture (Type of questions: *Opening, then Follow up, Probing, Specific, Example, and Specifying questions*: (Leech, 2002; Liamputtong, 2012; Qu & Dumay, 2011; Spradley, 1979))

(Power Distance)

- Is hierarchy important in your organisation? Can you please explain?
- Are people in your organisation generally comfortable approaching people above them in the organisation structure with bad news? Can you explain please?
- Is power centralised in a few hands in your organisation? Can you please give examples?
- So, do you think that in this type of environment “when they are asked to” will there be more use of e-government systems or not? And why?

(Individualism/Collectivism)

- Is the relationship between employees strong within your department? Can you explain please?
- Do employees prioritise work over their relationships? Can you please give examples?
- Do employees pursue employer interest if it conflicts with theirs? Can you explain please?
- So, do you think that as employees prioritise work, when it comes to using e-government system, will they use it or not? And why?

(Indulgence/ Restraint)

- Are people in your organisation generally enjoying their times at work? Can you please give examples?
- Is maintaining orders a priority within your organisation? Can you explain please?
- Is freedom of speech is accepted in your organisation? Can you please give examples?
- So, do you think that in this type of environment “when they are asked to” will there be more use of e-government systems or not? And why?

(Uncertainty Avoidance)

- Are people in your organisation rule oriented? Can you please give examples?
- Are people in your organisation comfortable accepting change? Can you please give examples?
- Do people feel I okay if they cannot predict consequences? Can you explain please?
- So, do you think that as employees accept change, when it comes to using e-government system, will they use it or not? And why?

(Long-term / Short-term Orientation)

- Are employees in your organisation future oriented? Can you explain please?
- Do people in your organisation usually plan for future? Do they may give up today's fun for success in the future? Can you please give examples?
- So, do you think that as employees and organisation plan for future, when it comes to using e-government system, will they use it or not? And why?

(Femininity/Masculinity)

- Is showing emotions and feelings something common in your organisation? Can you please give examples?
- Are people in your organisation cooperative? Can you please give examples?
- So, do you think that in this type of culture, when it comes to using e-government system, will they use it or not? And why?

Section 4: FFM Personality traits (Boyle et al., 2008; McCrae & Costa, 2003)
:(Type of questions: *Specifying questions, Example, then Follow up, and Probing*: (Leech, 2002; Liamputtong, 2012; Qu & Dumay, 2011))

(Conscientiousness)

- Is achievement a need for you? Can you please explain?
- Do you like learning new stuff? Can you please give examples?
- Do you usually finish what you started? Can you please give examples?
- As a person who likes to achieve things and to learn new stuff, do you think that when it comes to using e-government system, will you "he or she" use it or not? And Why?

(Agreeableness)

- Do you find yourself a helpful and cooperative person? Can you please give examples?
- Do you usually comply with rules, follow orders? Can you please explain?
- As a person who cooperative and helpful, do you think that when it comes to using e-government system, will you "he or she" use it or not? And Why?

(Extraversion)

- Do you usually look at things positively? Can you please give examples?
- Do you usually stand up for yourself and other people's rights? Can you please give examples?
- Do you usually strive to get what you want? Can you please give examples?

- As a person who looks at thing “ issues” positively and strives to get what you “ he/she” wants, do you think that when it comes to using e-government system, will you “he or she” use it or not ? And why?

Section 5: Use of e-government systems: (Type of questions: *Experience:* (Spradley, 1979))

- What happens when new policy comes in?
- What happened when the new systems came in?
- Was there resistance at first when the new systems came in? Can you please give examples?
- Is your work mainly done through the systems? Can you explain please?
- Could you please tell me your experience with using e-government systems?
- Etc.

Perceived Transparency (Type of questions: *Examples, Task-related, and Experience:* (Leech, 2002; Spradley, 1979))

- Do you think that what you do on the system is being monitored? Can you please give examples?
- So, you are aware that you work is being monitored! Can you please describe?
- How do feel about knowing your work is being monitored?
- Etc.

Perceived Accountability (Type of questions: *Task-related, Mini-tour, and Example:* (Leech, 2002; Liamputtong, 2012; Qu & Dumay, 2011; Spradley, 1979))

- Because of use of the systems, do you think that that employees can be hold accountable?
- Could you please describe how the use of the systems can help holding someone accountable?
- Besides using the systems, are there any other reason(s) where employees could be held accountable? Could you please name some?
- Could you please share any situation where someone try to avoid using the systems, so no one can hold them accountable?
- Could you please share any story where someone was held accountable because of the use of the systems?
- Etc.

Self-reported Compliance: (Type of questions: *Task-related, Mini-tour, and Example:* (Leech, 2002; Liamputtong, 2012; Qu & Dumay, 2011; Spradley, 1979))

- Do you think the use of the systems increase compliance with rules and regulations?

- Could you please describe how the use of the systems increases compliance with rules and regulations?
- Is there any other reason that would make employees comply with the rules and regulations? Could you please name some?
- Could you please share any situation where someone try to avoid using the systems, so they do not comply with the rules and regulations?
- Etc.

Section 6: Demographic information:

Gender: (Male) (Female) (prefer not to say)

Age group: (≤19) (20-29) (30-39) (40-49) (50-59) (> 60) (prefer not to say)

Educational level: (High school or less)-(Diploma)-(Bachelor's Degree)-(Higher Diploma)-(Master)-(Doctorate) (prefer not to say)

Organisation Type: (Ministry)-(Authority)-(Agency)-(Municipality)-(University)-(Center)-(Fund)-(Other) (prefer not to say)

Reminders:

- *Show appreciation*
Do you have any question concern?
- *If they would like to get the findings of the study*
- *Could introduce the researcher to anyone might be interested in such study*