FACTORS INFLUENCING CITIZEN’S ADOPTION OF E-GOVERNMENT SERVICES IN SAUDI ARABIA

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I gratefully and sincerely thank Dr. Roger Cook for his great efforts editing this thesis and for his help in setting out the basis for the analysis of the data. I also acknowledge the work of Dr. Alex McKnight for editing this thesis.

I would also express my gratitude and thankfulness to my wife for her patience, care and support through the period of this PhD program.
DEDICATION

To my mother, the one who always desired to see me at the highest of all levels. To her only, I dedicate this work.
DECLARATION

I hereby declare that except where due acknowledgement has been made, this work is my own and it has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of this thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid carried out by a third party, including Study and Learning advisers is acknowledged; and, ethics procedures and guidelines have been followed.

Osama Talal AlMahroqi

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05/07/2012
ABSTRACT

This research explores the factors for citizen’s adoption or rejection of e-government in Saudi Arabia. The broad finding confirms other research into e-government adoption outside the OECD. Weaknesses in public administration and a low level of ICT aptitude in the wider population are argued to combine to limit both the range of services provided and the take-up of these services.

The citizens’ decision to adopt or reject e-government services was studied using the framework of the Unified Theory of Acceptance and Use of Technology (UTAUT) model. This assumes that usage of e-government is related to three factors – personal, technological and transactional. For the most part, the common assumption is that these all have the same effect (i.e. they all immediately influence the actual decision) and many studies identify particular variables as statistically significant. However, this research suggests a different formulation may be correct. In effect, personal factors influence the type of decision process constructed to make the decision to use e-government services. The chosen rule varies according to certain key characteristics and, in this case, sees individuals choosing to rely on ‘usefulness’ or ‘ease of use’ (in other words, the two technological factors) with ‘risk’ (a transactional factor) relegated to a secondary role.

This study suggests that ‘ease of use’ was the dominant decision process for those who lacked either ICT aptitude or had little previous experience with e-commerce. In effect these people were trying to adopt e-government services and finding they lacked the technological skills to deal with the relatively flawed systems on offer. Critically, a number of individuals with this characteristic were able to use e-government services in an OECD country where the demands on the user are lower due to better-designed websites.

‘Usefulness’, in turn, was the decision process adopted by those with the competence to access the systems in Saudi Arabia. In effect, these individuals made the decision to use e-government services on the basis of the value of doing the transaction on-line. More broadly, it was suggested that ‘ease of use’ is the test applied at the point of first use and ‘usefulness’ is the on-going test applied to any potential e-government transaction. Therefore, as often reported, both are relevant criteria but importantly they are used by different people in different situations.
This line of enquiry was informed by the wider decision-making literature that suggests that in any decision situation, individuals will reformulate the problem so that one criterion is dominant and then make the decision on the basis of this formulation (in effect they will use a simplified single-stage decision process, even when the situation notionally calls for a multi-stage complex rule). This finding has two wider implications. First, there is a need to reconsider those studies that suggest that multiple criteria were adopted to explore if different criteria were in use by different parts of the sample (as here), rather than being used simultaneously (as is often assumed to have been the case). The second implication is the importance of ‘ease of use’ as the dominant criterion when e-government is first being introduced. In effect, well-designed websites and clear administrative procedures are critical if e-government is to be adopted in societies where the wider population has relatively low ICT skills or experience. This may be consistent with the more recent studies in OECD countries that suggest that ‘ease of use’, has, over time, ceased to be a relevant factor in e-government services adoption.
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ABSTRACT

This thesis provides a comprehensive understanding of the factors influencing the adoption of e-government services in Saudi Arabia. It aims to explore the adoption process in the context of the Arab Gulf countries and the wider OECD, with a focus on the case of Saudi Arabia.

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Osama Almahroqi, Khan, Shahadat & Brain Corbitt (2011). Role of Situational, transactional and technological factors in the adoption of e-government in developing countries; case study of Saudi Arabia, The 9th ANZAM Conference Proceedings, 16 -17June, Deakin Management Centre, Deakin University, Geelong, Victoria, Australia


**GLOSSARY OF TERMS**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2C</td>
<td>Business to Commerce</td>
</tr>
<tr>
<td>DOI</td>
<td>Diffusion of Innovation Model</td>
</tr>
<tr>
<td>G2B</td>
<td>Government to Business</td>
</tr>
<tr>
<td>G2BC</td>
<td>Government to Business as Commerce</td>
</tr>
<tr>
<td>G2BMKT</td>
<td>Government to Business as a Market</td>
</tr>
<tr>
<td>G2C</td>
<td>Government to Commerce</td>
</tr>
<tr>
<td>G2G</td>
<td>Government to Government</td>
</tr>
<tr>
<td>GCC</td>
<td>Gulf Co-ordination Council</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>ICT</td>
<td>Information Communications Technology</td>
</tr>
<tr>
<td>IS</td>
<td>Information Systems</td>
</tr>
<tr>
<td>ISP</td>
<td>Internet Service Provider</td>
</tr>
<tr>
<td>KSA</td>
<td>Kingdom of Saudi Arabia</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-ordination and Development</td>
</tr>
<tr>
<td>PEOU</td>
<td>Perceived Ease of Use</td>
</tr>
<tr>
<td>PU</td>
<td>Perceived Usefulness</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>UTAUT</td>
<td>Unified Theory of Acceptance and Use of Technology</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
</tr>
</tbody>
</table>
CHAPTER 1

1. INTRODUCTION

1.1 The Scope of this Research

This thesis examines the factors influencing the adoption of e-government services by citizens in the Kingdom of Saudi Arabia (KSA). Contemporary governments seek to regulate activity within their national borders (Rueschemeyer and Evans, 1985), give information to their citizens, facilitate the political process and provide services to their citizens (Rose and Miller, 1992, Evans et al., 1985). The state also retains a coercive role, either implicitly (O’Hara et al., 2009) or explicitly (Francisco, 1995, Lukes, 1974), and organise how the various parts of the state interact and deal with other nation states and multi-national bodies (Cox, 1993). In regimes such as the Kingdom of Saudi Arabia (KSA), the state has retained an important role as provider of services such as banking and in organising the labour force. The research design of the present study focuses on citizens’ responses to the Yesser e-government programme launched by the Saudi Government in 2005, which was designed to radically improve the scope and quality of e-government services in the Kingdom (Al Ghoson, 2010, Al-Fakhri et al., 2008, AlSabti, 2005 ) with the goal of completion by 2010.

The bulk of the early research into e-government adoption was sited within the Organisation for Economic Co-Ordination and Development (OECD) countries (OECD, 2002), with less attention having been paid to the development of e-services in developing countries (Alrawi et al., 2008). Fewer studies have examined the development of e-government services in terms of the decisions of the citizens to use the services provided (Yildiz, 2007) in a developing country and in the Middle Eastern context (Ndou, 2004). Equally, while there has been significant focus on the technological aspects of adoption by the state, there has been less on wider political and social processes (Al-Fakhri et al., 2008, Yildiz, 2007). There has also been little emphasis on when or why citizens might decide to use e-government services (Hung et al., 2006, Wixom and Todd, 2005) if they have a choice, and how they might respond if left with no choice. Equally there have been other recent studies on citizen adoption but based in the OECD (Orgeron and Goodman, 2011). Despite this, the
major existing theoretical models of e-government adoption tend to stress the adoption of the technology (Titah and Barki, 2006) rather than the adoption of the underlying concept or actual process (Venkatesh et al., 2003). However, there has been increasing interest in multi-disciplinary approaches that combine elements of public administration, political science, individual behaviour with the traditional focus on the process of technology adoption (Hardy and Williams, 2011).

The goal of the present research specifically is to address citizen adoption of e-government services. The basic framework for the study was drawn from the theoretical model being developed in areas of behavioural and naturalistic decision making (Klein, 2008, Lipshitz et al., 2001, Payne et al., 1993) linked to emerging themes in the e-government adoption literature. In combination, this led to the development of a view that citizen adoption of e-government services is dependent on three factors: a combination of individual (i.e. relatively fixed personal characteristics) factors; the technological environment (does it deliver a worthwhile service? is it easy to use?); and factors specific to the particular transaction (often framed in terms of risk) being undertaken (Al-Kahtani et al., 2006, Al-Solbi and Al-Harbi, 2008, Carter and Weerakkody, 2008, Das et al., 2009). As a consequence, this approach frames the basic question about the citizen’s decision to adopt and assumes this decision is influenced by situational, personal and technical criteria (Beach, 1990, Kerstholt and Raaijmakers, 1997, Payne et al., 1993). This approach alters some of the assumptions behind more conventional uses of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) model as it offers a development of the decision-making element within that approach to understanding e-government adoption.

Many of the existing models used to study e-government adoption (Davis, 1986, Rogers, 1995, Venkatesh and Davis, 2000, Venkatesh et al., 2003) are basically models of technology adoption. Nonetheless, they do suggest that some or all of the factors suggested above may be relevant but lack a clearly structured model as to how the individual citizen decides to adopt or reject e-government services (assuming they have a choice in the matter). To address this, concepts from the decision-making literature such as Montgomery’s Dominance Structuring model (Montgomery, 2006) have been adopted. This model argues that, when faced by multiple and conflicting criteria and information, individuals will simplify the situation in such a way that a single factor becomes dominant and forms the key to their decision behaviour. In
effect, while a number of factors may be relevant, individuals will focus on one or the other as the critical issue (Montgomery, 2006, Simon et al., 2006) in a particular situation. From this perspective, it is expected that a variety of different factors will be cited by individuals as the basis for their decision, but in most instances, each individual will have one criterion that becomes dominant – in effect the criterion on which they base their decision. Equally, there is no reason to expect these criteria to be the same, either for all potential users or a particular user across different circumstances.

Thus the research question is what factors influence the adoption of e-government services within the KSA. In particular the extent that bringing in the perspective of naturalistic decision models allows a development of the technology adoption models that have been the previous (Titah and Barki, 2006) research in this field.

1.2 State of E-government services in the KSA

In 2005 the Kingdom of Saudi Arabia announced the Yesser e-government initiative that aimed to introduce world-class easily-accessible e-government systems by 2010. However, a small number of early evaluation reports available in the public domain on the introduction and development of e-government services in KSA indicate a patchy implementation far short of the original aims (Al Ghoson, 2010, Al-Fakhri et al., 2008, Al-Gahtani et al., 2007, AlSabti, 2005, Al-Solbi and Al-Harbi, 2008, AmeInfo, 2007). However, KSA government websites reiterated the on-going commitment and indicated continuous improvement in providing services (Ministry of Labour, 2009, Yesser, 2010a, Yesser, 2010b, Yesser (E-Government) Program, 2010). At the time the fieldwork for this study was conducted it was clear that the original goal of an easy to use, comprehensive system had not been met. As such, and this is returned to in the concluding chapter, there is a clear need for further research that updates these conclusions as the Saudi Government has continued to stress its commitment to e-government and a second action plan covering the period 2012-2016 was adopted in 2012 (Kingdom of Saudi Arabia, 2012).

The patchy nature of e-government implementation at the time of this research in the KSA made it difficult to make a complete list of available e-government
services (Yesser, 2010a). Table 1.1 shows examples of some of the existing e-government services in the KSA. In effect, some government services are provided by the government ministries and some are licensed to private providers. The services via private providers include the processes for applying for and awarding religious, visitors’ and commercial visas (Al Alamia, 2010). A second major area has been to administer the state-supervised labour market for Saudi citizens (Ministry of Labour, 2009). This is important in the light of the wider ‘Saudization’ programme designed to replace expatriate labour with Saudi citizens (Al-Dosary and Rahman, 2009, Bozionelos, 2009). One part of this is to use on-line e-government to control the range of jobs offered to expatriate labour and to ensure that Saudi citizens take up the opportunities resulting from the restrictions on expatriate employment. Another major development has been in the state-run billing and banking system (Yesser, 2010b) that is used to regulate the payment of bills for state utilities and between private individuals. The extent of actually available e-government services was addressed as part of the research design and covered in the interview phase. The situation at the end of the empirical field-work is summarised in Table 1.1 below:
Table 1-1 Summary of E-Government Services in the KSA (2012)

<table>
<thead>
<tr>
<th>Description of Available Services</th>
<th>Service Provider</th>
<th>Service Website(s)</th>
<th>Comment (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply for admission to a university</td>
<td>Ministry of Higher Education, Ministry of Education and affiliates</td>
<td><a href="http://www.moe.gov.sa/">www.moe.gov.sa/</a> <a href="http://www.mohe.gov.sa">www.mohe.gov.sa</a></td>
<td>Services offered by MOHE are seen as very good services. Services offered by MOE are seen as acceptable but still limited</td>
</tr>
<tr>
<td>Apply for a scholarship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply for a change of school (primary education)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer of electronic files of a student etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply for a temporary work visa</td>
<td>Ministry of Foreign Affairs Private Agents</td>
<td><a href="http://www.mofa.gov.sa">www.mofa.gov.sa</a></td>
<td>Good services available are through agents; direct services are still very limited</td>
</tr>
<tr>
<td>Different visiting visas including religious visas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administer the state-supervised labour market for Saudi citizens</td>
<td>Ministry of Labour</td>
<td><a href="http://www.mol.gov.sa">www.mol.gov.sa</a></td>
<td>Seen to be good service</td>
</tr>
<tr>
<td>Apply for hospital admission</td>
<td>Ministry of Health and affiliates</td>
<td><a href="http://www.moh.gov.sa">www.moh.gov.sa</a></td>
<td>Services are seen to be limited</td>
</tr>
<tr>
<td>Apply for medical licenses or permits for service providers etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply for pension payment and benefits, checking status of applications, tracking orders etc.</td>
<td>Public Pension Agency General Organization for Social Insurance (GOSI)</td>
<td><a href="http://www.pension.gov.sa">www.pension.gov.sa</a> <a href="http://www.gosi.gov.sa">www.gosi.gov.sa</a></td>
<td>Services range from good to very limited</td>
</tr>
<tr>
<td>Apply for grants etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paying fees for services</td>
<td>Ministry of Interior, Ministerial Agency of Civil Affairs and affiliates</td>
<td><a href="http://www.moi.gov.sa">www.moi.gov.sa</a></td>
<td>Services are still developing and no fully integrated service is available to date</td>
</tr>
<tr>
<td>Checking electronic files, Paying civil infringement notices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications for passports, driving licenses etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserving appointments to attend civil records dept.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply for different permits. Information about the courts applications and procedures etc.</td>
<td>Ministry of Justice</td>
<td><a href="http://www.moj.gov.sa">www.moj.gov.sa</a></td>
<td>Available services allow citizens to complete forms, print them and submit in person</td>
</tr>
</tbody>
</table>

This table was produced after the fieldwork, reported in chapter four, was concluded and represents more recent developments in e-government provision within the KSA. As is clear, it indicates that in some areas, the range and quality of services has continued to improve in particular in terms of education, regulation of the labour
market, passport applications and dealing with the legal system. Other areas, such as health and social welfare, remain more limited and have lagged behind other departments. In general, Table 1-1 reinforces the view discussed both in the literature review and in the empirical work that e-government varies across the KSA bureaucracy and that some departments have adapted to the demands of Yesser more readily than others.

1.3 Review of the Literature

Existing research in the field of e-government adoption and implementation is substantial although a number of gaps continue to exist. The existing research has mostly focussed on adoption and implementation within the OECD. Equally it is based on three related, explanatory models that were initially devised to explain technology adoption, as: the Technology Adoption model (TAM) (Davis, 1986); the Diffusion of Innovation model (DOI) (Rogers, 1995); and the Unified Theory of Adoption and Utilisation of Technology (UTAUT) (Venkatesh et al., 2003). UTAUT in particular is frequently adapted to the study of e-government and Titah and Barki (2006) suggest a model of e-government adoption that draws on different elements from all these models.

The issue that all these models of technology acceptance have in common is a focus on the adoption of technology rather than the political and social processes that surround public administration (Yildiz, 2007). Other researchers in the field of e-government implementation (Al-Solbi and Al-Harbi, 2008, Avgereou, 2008, Carter and Weerakkody, 2008, Gefen, 2000, Heeks and Stanforth, 2007, Richards, 2012) have suggested that different factors have an impact on the citizens’ adoption of e-government services, including age, gender, previous experience, motivation, socio-cultural pressure, compatibility, newness, trust, risk, usefulness and ease of use.

The three models, TAM, DOI and UTAUT, have a number of factors in common since they are all derived from TAM. TAM suggests that the two key factors leading to adoption are the perceived usefulness and the perceived ease of use of that technology. In effect, something will be adopted if it is either easy to use or the advantages of use outweigh the difficulties of doing so. Early versions of the model assumed that the decision-maker combined the two criteria to reach a weighted judgement, but later versions (Venkatesh and Davis, 2000) take the view that only
'perceived ease of use' is relevant. One study that used TAM, however, suggested that although both criteria were relevant, ease of use influences the initial decision to use e-government services and usefulness the decision to continue to do so (Gefen and Straub, 2000). This particular insight has been important in the development of the present dissertation.

The DOI model extended TAM by arguing that the speed at which a new technology will diffuse (i.e. be adopted) is driven by five factors. These are: relative advantage (i.e. is using the new system worthwhile compared to the older methods?); complexity; compatibility (how closely does the system mirror the existing procedures and the users’ beliefs?); trialability (i.e. can it be tested before full adoption?); and, observability (i.e. can the potential user see the process at work for other people?). There is some overlap with TAM in that relative advantage and complexity can be seen as the equivalents of usefulness and ease of use as they reflect both the perceived benefit to the user and the perceived burden that using the system will impose on the user. However, as with TAM, DOI does not particularly address how the user combines the various criteria, nor how they may chose between them depending on their personal situation or the wider set of dynamics surrounding the decision.

UTAUT was developed to address weaknesses in both TAM and DOI. In particular, it explicitly includes characteristics of the decision-maker (gender, age, previous ICT experience), and of wider social influences as well as the process of adopting the technology under consideration (Venkatesh et al., 2003). The latter aspect relies on two characteristics very similar to TAM: effort expectancy and performance expectancy, which again mirror ease of use and usefulness.

A summary of previous research with respect to the factors identified as influencing the acceptance of e-government services is summarised in Table 1.2 (overleaf)
<table>
<thead>
<tr>
<th>Factor</th>
<th>Comments</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>A complex variable as it is suggested that the likelihood to adopt will increase with age. However, studies in Saudi Arabia have found that older users are less likely to engage with both e-commerce and e-government due to cultural reasons or sometimes resistance to change. (Sciadas 2002), (Sait et al., 2004), (Baker et al., 2007).</td>
<td>(Sciadas 2002), (Sait et al., 2004), (Baker et al., 2007).</td>
</tr>
<tr>
<td>Gender</td>
<td>Women are more likely to use e-commerce within OECD countries if the experience is social and compatible with other modes of commerce. This is not the case in Saudi Arabia where females are often limited in their engagement with state institutions. Some have suggested that females in Saudi Arabia are expected to be more willing to adopt e-government as religious and/or socio-cultural pressures that limit their ability to attend physical offices. (Van Slyke, Belanger et al. 2005), (Sait, Al-Tawil et al. 2004; Baker, Al-Gahtani et al. 2007), (Al-Otaibi and Al-Zahrani 2009).</td>
<td>(Van Slyke, Belanger et al. 2005), (Sait, Al-Tawil et al. 2004; Baker, Al-Gahtani et al. 2007), (Al-Otaibi and Al-Zahrani 2009)</td>
</tr>
<tr>
<td>Previous experience,</td>
<td>Those who already use e-services are more likely to do so again. In this case, the cited reason seems to be a higher degree of trust (perhaps due to having not been defrauded on an earlier transaction). This also referred to as familiarity with technology; (OECD 2007),</td>
<td>(OECD 2007)</td>
</tr>
<tr>
<td>Motivation</td>
<td>Motivation is determined by other factors such as usefulness, enjoyment and social pressure; (Anandarajan, Igbaria et al. 2002),</td>
<td>(Anandarajan, Igbaria et al. 2002),</td>
</tr>
<tr>
<td>Socio-cultural pressure,</td>
<td>Commonly argued to be a major factor in the adoption of e-commerce within environments carrying very strong cultural values and social pressures (Al-Gahtani, Hubona et al. 2007; Dwivedi and Weerakkody 2007; Al-Fakhri, Cropf et al. 2008)</td>
<td>(Al-Gahtani, Hubona et al. 2007; Dwivedi and Weerakkody 2007; Al-Fakhri, Cropf et al. 2008)</td>
</tr>
<tr>
<td>Compatibility</td>
<td>How familiar is someone with this form of transaction and how compatible is it with someone’s existing values or beliefs? As such this could be seen as a reflection of an individual’s resistance to potential change. (Gefen 2000; Sait, Al-Tawil et al. 2004; Al-adawi, Youseafrzai et al. 2005; Dwivedi and Weerakkody 2007);</td>
<td>(Gefen 2000; Sait, Al-Tawil et al. 2004; Al-adawi, Youseafrzai et al. 2005; Dwivedi and Weerakkody 2007);</td>
</tr>
<tr>
<td>Newness</td>
<td>For some people the newness of a concept or technology is a positive reason to adopt it. (Venkatesh et al., 2003), (Al-Asmari 2005; Al-Kahtani, Ryan et al. 2006; Spinelli 2008; Alrawi and Sabry 2009);</td>
<td>(Venkatesh et al., 2003), (Al-Asmari 2005; Al-Kahtani, Ryan et al. 2006; Spinelli 2008; Alrawi and Sabry 2009);</td>
</tr>
<tr>
<td>Trust</td>
<td>Is often cited as being particularly important. It can also be seen as ‘do I trust this vendor to deliver the goods/service as ordered and to keep my details secure?’ (Bélanger and Carter, 2008), (Corbitt, Thanasankit et al. 2003; Kim, Song et al. 2005; Holmes 2007);</td>
<td>(Bélanger and Carter, 2008), (Corbitt, Thanasankit et al. 2003; Kim, Song et al. 2005; Holmes 2007);</td>
</tr>
<tr>
<td>Risk</td>
<td>Individual perceptions of risk are influenced by both the extent that a failure of trust will affect them personally and a view of trustworthiness built up by personal experience, word of mouth and the extent that the technological environment offers reassurance. For some, it might be the same as trust but then adds the idea of how much one might be prepared to risk if the transaction is fraudulent (Corbitt et al., 2003),(Wang and Emurian, 2005), (Yousafzai, Pallister et al. 2003; Sait, Al-Tawil et al. 2004; Al-Diri, Hobbs et al. 2006)</td>
<td>(Corbitt et al., 2003),(Wang and Emurian, 2005), (Yousafzai, Pallister et al. 2003; Sait, Al-Tawil et al. 2004; Al-Diri, Hobbs et al. 2006)</td>
</tr>
<tr>
<td>Usefulness</td>
<td>The underlying value (how useful this technology is) to making use of e-services. Much current research suggests that this has become the dominant factor influencing adoption decisions by individuals. (Venkatesh and Davis 1986);</td>
<td>(Venkatesh and Davis 1986);</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>Originally was equally often postulated as the fundamental factor in any technology adoption situation. It carries the idea of how easy it is for someone to use this technology. Much current research within the OECD suggests that this factor is now less important (as a large</td>
<td>(Venkatesh and Davis 1986 )</td>
</tr>
</tbody>
</table>
In developing a conceptual framework for this research, the factors set out in Table 1.2 were aggregated into the following three broad categories:

a) **Individual (or personal) factors.** These are factors that effectively describe the individual such as age or gender but also their past experiences with ICT, e-commerce and e-government.

b) **Technology factors.** In this case how much the technology adopted is a barrier to, or a help to, adopting a particular e-government system; and

c) **Transactional factors.** These include aspects that are relevant to the particular instance such as how important are factors such as trust and risk?

Table 1-3 below maps the various factors identified in Table 1-.2 onto the simplified structure:

**Table 1-3 Factors influencing E-Government adoption in the literature**

<table>
<thead>
<tr>
<th>Broad Category</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Wider experience with ICT</td>
</tr>
<tr>
<td></td>
<td>Socio-cultural influences</td>
</tr>
<tr>
<td></td>
<td>Motivation</td>
</tr>
<tr>
<td>Technology</td>
<td>Usefulness</td>
</tr>
<tr>
<td></td>
<td>Ease of Use</td>
</tr>
<tr>
<td>Transaction</td>
<td>Risk</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td></td>
<td>Innovation and newness</td>
</tr>
<tr>
<td></td>
<td>Compatibility with previous approaches</td>
</tr>
</tbody>
</table>

**1.4 Research Strategy**

Two main issues drove the research strategy adopted: First, there was a desire to study the issue of e-government adoption outside the OECD in the context of a particular state.; and, second, to understand how individuals describe their decision-making strategy in terms of e-government adoption. In combination, these concerns
led to a research design based on a qualitative approach (Creswell, 2008) with a focus on a sample biased towards those with university degrees and who could also speak English, as other research has indicated these are often enthusiastic adopters (Schuppan, 2009, Wangpipatwong et al., 2008) of new technology in non-OECD countries. In effect, if adoption in the KSA was limited, it was appropriate to concentrate the enquiry on a social grouping known from other studies to be the most likely adopters.

Some previous studies in this field have relied on questionnaires (Hung et al., 2006, Wangpipatwong et al., 2008) with responses being codified and analysed to find out which adoption factors are dominant across the group. Such an analytical model is that can identify salient factors for a complete group but may miss critical variations within that group (Elster, 2007). The desire to avoid this, and to understand which factors were dominant for each individual (and if these varied in a coherent manner), led to the adoption of a research design based around a semi-structured interview (Creswell, 2008). The interview allowed detailed exploration of why the individual used or rejected e-government services and of related themes such as their wider internet usage and whether they also made use of e-commerce.

The data were collected by personal in-depth interviews with thirty (30) Saudi citizens. These were in turn divided across three categories as follows:

i. Saudi natives who had never lived outside the KSA,
ii. Saudi citizen currently (at the time of the data collection) living within OECD countries.
iii. Saudi citizens who had previously lived in an OECD country and returned to the KSA

The sample selection allowed the exploration of variances due to previous experience or exposure to different commercial and governmental systems, and helped in identifying differences in behaviour in and outside KSA and the reasons for any differences. In particular, this offered a control to explore if any resistance to the adoption of e-government in the KSA was mirrored in their usage of e-government outside the KSA. There are separate Saudi government systems that regulate the employment of non-Saudis and these were excluded from this study.
The interviewees were also asked the same questions in the context of e-commerce adoption, in part to understand their previous ICT usage and this also allowed comparison of their adoption criteria for e-commerce and e-government services and whether these differed. The selection of interviewees was biased towards those with at least one university degree and who could speak English, as a previous study (Wangpipatwong et al., 2008) had indicated this group was more likely to engage in both e-commerce and e-government services than was the normal in a non-OECD society.

The interviews were conducted in Arabic, recorded, transcribed and then translated into English (Temple and Young, 2004) by the researcher with help from a professional interpreter. The dangers of losing subtleties in this process were reduced as the interviewer, who is a native Arabic speaker proficient in English, checked both the original tapes and the subsequent English translation for accuracy. The data were analysed primarily in terms of Content Analysis, a form of discourse analysis (Potter and Wetherell, 1994), in particular as to how the respondents organised their answers and the emphasis they placed on their reasoning around e-government services adoption. Additionally, Pattern Matching (Yin, 2009) was used to assist the process of ascribing meaning and structure to the transcripts. In effect, a framework was generated that relied on the literature review which is shown in Table 1-3, and the extent to which the information agreed with or contradicted this was critical to conceptualize and interpret the situation from the transcripts. This required the researcher to make links to the existing literature and research in an attempt to understand how any revealed findings within the sample might have wider significance.

Qualitative Comparative Analysis (Griffin and Ragin, 1994, Rohwer, 2010) was used to deal with the issues of small sample size and to track the interaction of the personal-technological-transactional factors. The approach is to assign a verbal scale (yes/no, strong/intermediate/weak etc) to the variables and then compare these patterns to the outcome (Romme, 1995) to explore how the input variables (individual factors, technological factors and transactional factors) interact, as well as how they affect the decision to adopt or reject e-government services. This is a useful qualitative tool when the need is to combine multiple variables as it allows the researcher to ‘read-across’ to spot patterns. Once a pattern has been identified, the detailed interview transcripts can be used to distinguish between simple correlations.
and those that the interviewees suggested were actually salient in their decision-making process.

Once the interviews were completed, the findings were explored using a three-stage analysis:

a) How do the three factors (personal, technological and transactional) identified in Table 1.3, influence the decision to adopt or reject?

b) When they are combined, is it possible to create an explanatory model that explains the variations within the sample?

c) Once this model has been constructed, is it possible to generalise to e-government adoption in other situations?

This overall research design was adopted to address problems raised by other researchers (Cohen and Eimicke, 2001) who have argued that early research into e-government was methodologically weak with limited attention being paid to gathering primary data, triangulation of findings, and linking the process of model building to the philosophy of science adopted (and, quite often not even discussing such issues).

1.5 Structure of the Thesis

This thesis is divided into six chapters. Chapter Two offers a critical review of the existing literature. This starts by defining what is meant by e-government and explores the reasons that are often hypothesised as leading to the acceptance or rejection of e-government services. The chapter is then structured to discuss reasons for e-government implementation, first in terms of technological factors, then in terms of issues related to the nature of the state and then from a citizen’s perspective. The last section argues that the conventional models used to explain e-government services adoption by relying on a suggested multi-criteria process for e-government services adoption may be too complex. Instead, a more plausible conceptual explanation is that individuals make their decision based on a single, dominant, criterion. A conceptual model is then derived as the basis of the research design. This constructs a model drawn particularly from the Unified Theory of Acceptance and Use of Technology (UTAUT) to not only indicates the factors that are believed to be significant but also to suggest about how they may relate to each other.
Chapter Three discusses both philosophical and practical issues behind the proposed research methodology adopted. This chapter starts with a review of various philosophical models of science and then explores the practical limitations and constraints of each. The key goal here is to explore what the limits and advantages of different approaches in terms of the subsequent interpretation of findings and how to generalise from the results presented. As discussed above, the consequences of adopting an approach that emphasises research in context, using a non-random sample and a semi-structured interview approach all indicated that a phenomenological approach was the appropriate choice.

Chapter three then develops the literature by proposing a detailed adoption model that was subsequently tested in the empirical work. This is important, as not only did it ensure the required data were gathered, it also set the basis for using Yin’s (Yin, 2009) Pattern Matching model as the basis to generalise from the findings based on the research sample. In turn, chapter four reviews the conceptual and theoretical background to this research as well as outlining the research design adopted.

Chapter Five contains the analysis of the data and first sets out some broad findings as to the state of e-government services in the KSA. The approach adopted to analyse the interview results is to first set out the context for e-government services adoption based on the statements of the individuals. Then the various individual factors were reviewed to see if they had any direct effect on the actual take up of e-government services. In this respect, the advantage of the interview design over one based on questionnaires is that it allows exploration of both the reasons offered by the individual for their approach to e-government services and whether they could be related to issues such as their gender, age, previous experience with e-commerce or to the nature of the e-government system under consideration.

The next section of Chapter Five then develops the analysis of the data to conceptualize the relationships between the factors set out in Table 1-3. This combines significant factors from all three elements (individual, technology, transaction) to identify how, in combination, they may influence the decision process of the individual and, if, in turn, the decision process is linked to variations in the actual adoption or rejection of e-government services. The final section then considers whether it is possible to generalise from these findings to the behaviour of the wider Saudi population, and, ideally, to issues that may be common in many non-OECD countries that are implementing e-government services.
Chapter Six summarises the main findings and considers the main issues for e-government services adoption in the KSA. In effect, it combines the main themes from Chapter Two and Chapter Four to re-evaluate the model presented in Chapter Three. It also reviews the current state of Yesser and evaluates its impact.

Finally, Chapter Seven presents the implications for future research in this field and considers gaps in the research as presented. This chapter also identifies limitations in the research presented and a possible direction for further studies.
CHAPTER 2

2. Literature Review

2.1 Introduction

E-government is becoming a key element in the delivery of state services across the world (Traunmuller and Leitner, 2008, Irani et al., 2007, Heeks and Stanforth, 2007, UNDESA, 2009). However, to date most studies used to explore its introduction and adoption have tended to concentrate on the technological aspects (website design, ICT issues, telecommunications structure) and see it as a process of adopting the supporting technology. Such an approach underplays the extent that governance remains a political and social process, regardless of how it is delivered (Yildiz, 2007). Equally, there has been relatively limited attention paid to the reasons for the decision by individual citizens to adopt, or reject, e-government services.

This chapter has been structured to address the perceived imbalance in the existing literature towards technological reasons for accepting or rejecting e-government services. Section 2.2 considers how to define the scope of e-government services and suggests a relatively pragmatic approach in that e-government is the provision of any state services to the citizens using the internet as the basic technological tool. Section 2.3 then examines the general literature on e-government adoption, starting with the political and social processes that may affect the introduction of e-government services, such as the human capacity (of both the state and the citizens) and the bureaucratic nature of the state. Following this, the three main models of: technology adoption (Davis, 1986); Diffusion of Innovation (Rogers, 1995); and, the Unified Theory of Acceptance and Use of Technology (Titah and Barki, 2006) are reviewed. Consideration is then given to how well these models actually capture the individual’s decision to adopt e-government services. This has not been a particularly well-researched area (Hung et al., 2006) therefore some material drawn from wider developments in the literature on individual and social decision-making (Beach, 1990, Montgomery, 2006, Simon et al., 2006, Svenson, 2006) is drawn on to offer useful insights. In particular, such a focus drawn from research into decision making offers a basis for studying the adoption of e-government services from a user perspective. In particular whether the decision
criteria adopted by the individuals vary according to the type of e-government service under consideration.

Section 2.4 then outlines some studies of e-government adoption within the OECD, before Section 2.5 considers the literature on e-government adoption outside the OECD and in particular developments within Saudi Arabia and in the broader Gulf Co-ordinating Committee (GCC) region. Section 2.6 then commences the process of drawing together a model that can be conceptualized on the basis of the literature review. Figure 2-1 shows the layout of this chapter.

**Figure 2-1 Literature Review Flow Chart**
2.2 Defining E-Government

Heeks (2002) and Irani et al (2007) suggest that any practical definition of e-government should simply be to encompass all the services provided by the state to the population, whether as individual citizens or corporations. If this approach is adopted, then it also addresses Yildiz’s (2007, p.650) view that not only is there “not any universally accepted definition of the e-government concept”, but also that many of the definitions in popular use make two mistakes. One is to define e-government more in terms of the technology adopted than the processes (or outcomes), and the second is that a single definition may fail to capture the variety of uses different parts of the state make of e-government. In particular, according to Yildiz (2007) there is no a-priori reason why all elements of a state (i.e. all the constituent elements of central government, all the devolved functions and all branches of local and regional governance) will move to e-government at the same speed or with the same motivation.

To address this issue, Yildiz (2007) suggests the most appropriate approach is to see e-government services as covering a broad continuum capturing the various motivations to introduce the services, the complexity of those services, how they are delivered and how the citizen is integrated into the process. A typology reflecting these variables is shown in Table 2.1 below:

Table 2-1 An E-Government Typology

<table>
<thead>
<tr>
<th>Stage:</th>
<th>Orientation:</th>
<th>Services:</th>
<th>Technology:</th>
<th>Citizens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Emerging Web presence</td>
<td>Administrative</td>
<td>Few, if any</td>
<td>Only web</td>
<td>Going it alone</td>
</tr>
<tr>
<td>2: Enhanced Web presence</td>
<td>Administrative, information</td>
<td>Few forms, no transactions</td>
<td>web, email</td>
<td>Links to local agencies</td>
</tr>
<tr>
<td>3: Interactive Web presence</td>
<td>Information, users, administrative</td>
<td>Number of forms, online transactions</td>
<td>web, email, portal</td>
<td>Some links to state sites</td>
</tr>
<tr>
<td>4: Transactional Web presence</td>
<td>Information, users</td>
<td>Many forms and transactions</td>
<td>web, email, digital signatures</td>
<td>Some links to state sites</td>
</tr>
<tr>
<td>5: Seamless Web presence</td>
<td>Users</td>
<td>Mirror all existing services</td>
<td>web, email, PKI, SSL, advanced technologies</td>
<td>Cross-department and layers of government</td>
</tr>
</tbody>
</table>

Table 2.1 is a useful way to conceive the variety of factors that can surround e-government in particular the way that the various stages of development of state services may reflect both the orientation of the providers and the range of services. In these terms technology is both an enabler (in effect the fifth stage can only be developed with complex technology) and thus a limit (if the ICT infrastructure in a given country cannot support certain desired approaches to service delivery. In effect, Table 2-1 can also be simplified into two key variables of:

a) The nature of the provision with this placed on a continuum from information provision, simple service transactions to conducting all citizen-state transactions on line (Kerby, 2008);

b) The distinction between using e-government for administrative convenience as opposed to a citizen-centric provision.

Graphically these two dimensions (information-service and administrative convenience-service centred) can be combined as follows:

**Figure 2-2 Different Types of E-Government Provision and State Motivation**
As in Yidiz’s typology (Table 2.1 above), Figure 2-2 suggests that ‘Type of Provision’ can range from purely information provision, to the ability to download forms, to isolated services such as on-line bill payment to a fully integrated e-government provision as it becomes more sophisticated. The Motivation axis, on the other hand, tracks the culture of the state, from seeing e-government purely for its own convenience to a fully citizen-centric focus. In this respect, almost any combination of the two axes (Type of Provision and Motivation) could exist. Even a move to full on-line services could be introduced from an administrative convenience perspective, whilst a simple approach based purely on information provision could be developed from a citizen-centric perspective.

The Type of Provision axis is based on the distinction between the provision of information and the provision of services. Once the state starts to supply some services via e-government services (Yildiz, 2007) then there is a continuum between simple provision (payment of bills), some sort of mix between on-line and physical delivery and the move to purely e-government services provision. Information provision and access is a key characteristic of e-government services in its earlier manifestation (Layne and Lee, 2001). Accessible information means that citizens can gain information and services outside the world of government offices and beyond their operating schedules (Aichholzer, 2004) as they rely less on bureaucratic office procedures to send and receive information from public offices (Yang and Rho, 2007). However, even as late as 2005, Reddick (2005, p.41) was able to conclude that in the US “local governments had barely surpassed the information dissemination stage”. Thus, information delivery has often remained the dominant use of e-government with a much slower development of service delivery.

In terms of motivation, it is relatively common to find claims that e-government is introduced for the benefit of citizens (Bekkers and Homburg, 2007, OECD, 2009, O’Hara and Shadbolt, 2008, Pons, 2004, Warf and Vincent, 2007) but there is evidence (Bekkers and Homburg, 2007) that the driver is often administrative convenience, in other words, convenience to the state not to the citizen. However, the motivation to introduce e-government services may vary within a given state from administrative convenience to citizen-centric or even as a political challenge to existing bureaucracies (Ahn and Bretschneider, 2011). Overall, it is too simplistic to seek to reduce a particular state to a single motivation, and this is borne out by wider research within and outside the OECD (Traumuller and Leitner, 2008, Irani et al.,
2007, Ahn and Bretschneider, 2011, Reddick et al., 2011) where different parts of the same administrative state have developed different approaches to the delivery and extent of e-government.

One further difficulty in defining e-government is to separate it from concepts of e-commerce. The OECD (2002) suggests that an electronic transaction is the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organisations, conducted over computer mediated networks. The key element is that the goods and services are ordered online, but the delivery of the good or service may be conducted on- or offline. However, the WorldBank (2005) suggests that e-government is the use of information technologies by government agencies to provide citizens, businesses, and other arms of government with on-line services (WorldBank, 2005). This definition is useful, but in many parts of the world, the state continues to provide services that in OECD countries are in the private sector.

For example, within Saudi Arabia, the state is a major provider of e-banking (SAMA, 2008), and this forms the bedrock of payments to and from the state, to public utilities, between private individuals and between private businesses. Equally, the Saudi state licences various private companies to offer visas to Muslim religious visitors (Al Alamia, 2010). In this, the state is not simply providing a commercial service; it does so through a competitive process that is effectively indistinguishable from any other form of e-commerce (Spinelli, 2008). This supports the argument advanced by Heeks (2002) and Irani et al (2007) that e-government should simply be defined as any process (service or information provision) run directly by, or on behalf of, the particular government being studied.

2.3 E-Government Adoption

2.3.1 State Motivation to implement E-Government

The question of why the state should adopt e-government has tended to be overlooked in the emphasis on studying the adoption of the underlying technology (Yildiz, 2007). In so far as the motivation of the state is discussed then the emphasis has fallen on how the nature, and robustness, of the underlying state structures has a direct correlation to success in developing and introducing e-government (Schuppan, 2009). However, two additional arguments are potentially valid; one is that no single

There is also an issue with “vendor push, where IT vendor firms use their employees in the IT policy networks to influence the decision-making process that leads to the creation and/or shaping of an e-government project” (Yildiz, 2007, p. 657). In effect, the state may well adopt a form of e-government to meet external expectations and this may have a direct effect on the type of provision offered. This also throws a different light on the often-reported failures of e-government projects outside the OECD (Al-Fakhri et al., 2008), as if the proposed, and often externally-imposed (Schuppan, 2009) solution is administratively flawed, then failure does not derive from how the technological aspects were handled. Taken to its logical extreme, this perspective suggests that e-government should be studied more from the perspective of public administration rather than the technologies that may underpin its delivery. Even if this approach is not adopted, this perspective does allow the explanation that different parts of the state may well have different perspectives on e-government.

2.3.1.1 The Motivation to Implement E-Government

Several studies in this field have identified conflicting motivations for e-government adoption by the state. Improving services to citizens (Bekkers and Homburg, 2007) is often cited, as is, less commonly, reducing costs (Heeks and Bailur, 2007). It has also been suggested that international bodies such as the World Bank promote e-government outside the OECD, not with the goal of improving services to that country’s own citizens, but rather to ensure that the state is a full part of the globalised economy (Avgerou, 2008, Rodrik, 2006). Equally, and not only in authoritarian regimes, e-government has the potential to be used for increased surveillance (Belanger and Hiller, 2005, Hoff and Bjerke, 2005, Lee and Rao, 2006, O’Hara et al., 2009, O’Hara and Shadbolt, 2008, Olsson, 2004, Seifert and Chung, 2005, Wheeler, 2009). This can be direct, or simply a side-effect (or benefit) of having more information to hand and being able to screen it using data mining.
techniques (Yildiz, 2007). China, for example, encourages government-citizen interactions through e-government (Seifert and Chung, 2005) but the approach to e-government (Guo et al., 2009) emphasises convenience to the state, as opposed to accessibility or value to the citizens.

This is not solely a feature of openly authoritarian regimes. Yildiz (2007, p.649) suggests that, especially in the context of the US that “the tragic events of September 11, 2001, caused a major shift in the perception of e-government from a tool for increasing the convenience of government service provision, facilitating administrative reform and furthering democratic participation, to a tool of defence against terrorist threats”. From this came not only a greater interest in data sharing between state agencies, but also the use of tools such as data mining (with the precondition of then wanting to gather more data), and taking more steps to protect government systems from potential attack. This shift, especially in the US, was potentially so profound in moving e-government away from serving the citizen to serving the state that “time will tell whether this major shift in focus will jeopardize the potential administrative and political benefits of e-government and its further development” (Yildiz, 2007, p. 649).

Thus within the state, while one part of the bureaucracy may well see it as a means to deliver better services, more effectively, a different part may well see the advantages from the state security perspective of having linked databases. Finally, depending on the nature of the regime, elected politicians may have different agendas to those of permanent officials. In summary:

“For example, it is possible for a project to be initiated partly because other organizations are preparing similar projects or because some vendor firm persuades top-level managers of government agencies that they “need” to implement such a project immediately. In addition, various deals, side-processes, and negotiations taking place within and among e-government policy actors might create an environment of “semi-rational” or garbage-can decision making models in e-government processes” (Yildiz, 2007, p. 657).

In consequence, although it appears likely that the state itself may have multiple reasons for introducing e-government, the commitment to improving services remains the one most often cited. For example, the Saudi Government’s stated goals
in respect of *Yesser* (*Yesser*, 2010a) remain grounded in concepts of value for money and service quality, as follows:

“The e-Government Program - *Yesser* - was launched with the following objectives:

a) Raising the public sector's productivity and efficiency.

b) Providing better and more easy-to-use services for individual and business customers.

c) Increasing return on investment (ROI).”

However, studies also suggest other motivations such as imposition of a particular model of the state (*Avgerou*, 2008) or increased citizen surveillance (*O'Hara* and *Shadbolt*, 2008). Thus the literature suggests a variety of reasons for e-government implementation and these reasons may vary over time, between particular innovations and across the breadth of the state.

2.3.1.2 Preconditions for E-Government Implementation

The preconditions for e-government implementation include both technological capacity and human capital, both of citizens and the state (*Becker et al.*, 2006, *Srivastava* and *Teo*, 2007). The suggestion is that a certain level of competence or expertise in each of these dimensions is an absolute precondition (*Schuppan*, 2009), and even once these thresholds are reached, they will continue to influence the successful adoption and implementation of e-government services (*Bekkers* and *Homburg*, 2007). In other words, a weak ICT infrastructure will be a permanent drag on successful implementation and development (*Aichholzer*, 2004).

Technological capacity (both ICT and the means to carry electronic communications) is a fundamental precondition for any form of e-government implementation (*Helbig et al.*, 2009). A lack of telecommunications capacity will stall any move to e-government, as will low levels of internet access. Ideally, a fairly high level of broadband access is desirable. Societies that continually invest in ICT infrastructure find the implementation and adoption of e-government to be easier (*Jaeger* and *Thompson*, 2003, *Lee* and *Rao*, 2006, *Bélanger* and *Carter*, 2008). Both *Jaeger* (2003) and *Lee* and *Rao* (2006) found that taking care about data security,
accessibility, and perceived confidentiality of information were strong influences on successful e-government adoption.

Human capital, in turn, refers to the readiness of individuals in a society to adopt e-government services and the term applies equally to employees and citizens. In particular, information technology skills are significant influences on an individual’s likelihood to use e-government services (Carter and Bélanger, 2005). As discussed above, Carter and Belanger (2005) argue that perceived ease of use of a new technological system is significantly related to citizens’ intention to use it in the future. In this case, ease of use can be seen as a trade-off between individual IT expertise and the actual design of e-government systems. Equally, younger people with higher levels of income and education have been found to be more likely to successfully seek and access information through e-government (Bélanger and Carter, 2008).

Human capital can also be reflected in the capacity of the state to actually deliver e-government services. This captures both technical expertise and the prevailing culture (Schooley and Horan, 2007, Drake et al., 2004). In this respect, Drake et al (2004) suggest that, within public administration, there are three different types of public administration subcultures with differing effects on the adoption, as follows:

a) Scientific culture – members of this culture view e-government as primarily a means of connecting to bodies of knowledge or communities of practice,
b) Political culture – members of this culture view e-government as primarily a means to influence political processes, and
c) Bureaucratic culture – members of this culture view e-government as a means to manage public administration effectively.

The emphasis on administrative culture, not technology, is supported by Lee and Rao (2006) who noted that the main challenge to developing an effective on-line disaster management system was not the technology, but resolving the differences between the various state agencies involved. In consequence, the social norms (Lee and Rao, 2006) of the agencies become important – in particular how far their internal cultures predispose them to share information and co-operate. (Chen, 2010) has argued that the barrier to full exploitation of e-government is less an issue of
technology or administrative capacity and more one of a willingness by the state to recast its relationship with its populace, and to move to a genuinely citizen-centric orientation. Finally, (Bussell, 2011) has argued that the existing levels of corruption in public administration are a better predictor of the likely success of an e-government initiative than variables such as technological capacity. In particular, this study suggests that national wealth (for non-OECD countries) is a poor predictor of the effectiveness of e-government, so that a poor, but non-corrupt, state can introduce a limited but useful range of e-government services (Bussell, 2011).

The importance of the human capital aspect of e-government implementation in Saudi Arabia is described as follows:

“The Saudi government needs to overcome a fundamental obstacle related to human resources, a shortage of skilled and qualified employees to deal with IT. …, another barrier to successful implementation of e-government in Saudi Arabia is the resistance of employees to change. The Saudi public agencies have a strong conservative streak. Fear of change is largely the result of ignorance, in addition to the normal emotional response associated with imagining the harm that could result to organizations by something they cannot control. Success will depend on breaking down the resistance to change. The e-government program does not only imply a series of changes of a purely technical character; it also suggests changes that are related to the structure of the administration and the bureaucratic procedures” (Al-Fakhri et al, 2008, p. 78).

Human capital also captures “the political nature of the e-government development processes, and a deeper recognition of complex political and institutional environments” (Yildiz, 2007, p. 647). From this perspective, it is as important to consider the administrative processes, political norms and culture as it is to examine appropriate technological solutions to the delivery of e-government. Heeks and Bailur (Heeks and Bailur, 2007) argue that most e-government development projects fail to be adopted and implemented due to gaps between how they are designed and the practical reality of implementation. Some of this problem is due to an over-emphasis on the technology needed to deliver e-government, rather than the complexities of public administration.
What is disputed in this respect is the extent that the existence of rigid bureaucratic rules helps or hinders e-government implementation. Some researchers (Norris and Moon, 2005, Moon and Bretschneider, 2002) claim that government internal structures with extensive red tape are slow and inefficient in their adoption of e-government. However, Pandey and Welch (Pandey and Welch, 2005) argued that red tape is not as great an influence in the adoption of e-government, although it is implicated in the production of poor information quality. Similarly, Norris and Moon (2005) found that smaller governmental agencies were more likely to adopt e-government than larger agencies. A larger agency is expected to have more complex systems and processes which make adoption challenging.

A different view, and one that is sustained by the empirical research in this thesis, is that a goal of e-government, from a citizen perspective, is to reduce the scope for official discretion (Reddick et al., 2011). To many who feel relatively powerless when dealing with state agencies, the idea that e-government will bring impartial, impersonal, administration, rather than having to rely on networks of contacts or good will, is very attractive (Reddick et al., 2011).

In addition, other factors such as trust are often identified in empirical studies and public knowledge of breach of trust can have a major impact on usage (Cavusoglu et al., 2004) of e-government services. This includes the security of data within the system, both in terms of access by other parts of the government as well as the impact of any reported losses to external bodies due to hacking or simple data loss (Tanaka et al., 2005). The fear of loss of data, or unauthorised access to data held on integrated databases, are commonly cited as reasons to slow or stop certain e-government developments (Basu, 2004, Ebrahim and Irani, 2005). Trust in this context has been defined as:

“an essential component in any relationship: interpersonal, in social structures, as well as in business relationships. As an interpersonal relationship, trust is the willingness of one person to increase his or her vulnerability to the actions of another person whose behaviour he or she could not control. As a structural relationship between people in a social system, trust is a collective and institutional attribute that can be drawn on to achieve certain societal goals. Trust in business relationships or economic transactions encourages exchange
partners (agents) to work at preserving relationships through cooperative transactions” (Kim et al, 2005, p. 143).

In its simplest form of information flow from government to citizen about processes and procedures, e-government is vulnerable to failings of information accuracy or failure to keep information up-to-date (Hoff and Bjerke, 2005). Trust in the content of governmental sites is an on-going limitation that governments must continually address (Bekkers and Homburg, 2007). In order to provide services such as legal document issuance, health and legal records, and political participation, governments must gather, organize, and store enormous amounts of citizens’ personal data (Hoff and Bjerke, 2005). Citizens’ trust in the privacy of their information once transmitted to governmental agencies in turn becomes a central issue of importance in the adoption and diffusion of e-government.

In the e-government context, trust takes on a number of dimensions. The first is the re-assurance that the transaction will take place as promised (for example, the payment of a bill is recorded, or a service is delivered), the second is that no unauthorised person will have access to the information (Lee and Rao, 2006) and finally that the government will not use data gathered for one purpose for another (Ciborra, 2005). Lee and Rao (2006, p.157) identify the second dimension as “that individuals’ perception of structural assurance concepts (e.g., 3rd-party seals, Internet security, technical safeguards) can alleviate assessed risks involved in online interactions, which in turn encourage the individuals to provide sensitive information and commit risky transactions.”

2.3.2 Existing Models of E-Government Adoption

Three main empirical theories (Carter and Weerakkody, 2008, Venkatesh and Davis, 2000, Benbasat and Barki, 2007, Davis, 1986) are often cited in literature that looks at the adoption of e-government. These are:

i. Technology Adoption Model (TAM);
ii. Diffusion of Innovation Model (DOI);
iii. Unified Theory of Acceptance and Use of Technology (UTAUT).
DOI and UTAUT are both derived from the original Technology Adoption Model (TAM) (Davis, 1986) which concentrated on understanding why the technological aspects of either e-commerce or e-government might be adopted by users. These are discussed in detail below but a common feature of all these models is an emphasis on the adoption of the underlying technology as either facilitating or hindering the adoption of e-government services. However, there are some differences between them. TAM lacks a model of how the actual decision is to be made, and in particular, how the decision maker is expected to balance between two characteristics (the perceived value of the process and how easy it is to use). DOI theories in turn tend not to discuss how users choose and balance the multiple issues included. However, studies based on UTAUT do sometimes make use of Ajzen’s Theory of Planned Behaviour (Ajzen, 1991). This section discusses and compares these three theoretical models. Section 2.3.3 (below) then draws together various critiques, in particular as to how individuals solve the problem of having multiple criteria to consider and what happens when they are left with no effective choice but to use e-government services.

2.3.2.1 Technology Adoption Model (TAM)

The Technology Adoption Model (TAM) is widely used to understand how people accept technology. The original version, as developed by Davis (1986), studied the adoption of technology by organisations and their employees. However, TAM was then applied to a variety of technology adoption situations and later studies have claimed that TAM explains around 40% of the observed variations in e-commerce and e-government services adoption (Venkatesh and Davis, 2000, Carter, 2008). Within the TAM framework, the decision to adopt a new technology (Davis, 1986) rests on two related criteria: perceived usefulness (PU); and, perceived ease of use (PEOU). PU refers to the extent that an individual believes using the technology will prove to be valuable, and PEOU to the extent that the individual believes that adopting the technology will be free of effort (Davis, 1986). The decision process embedded in the model suggests that there is a threshold that the two factors combine to reach: so if an e-government practice is very useful it might be adopted despite being hard to use, or vice versa (Davis, 1986).
Of importance in TAM, is the perception of value and ease of use, not the actual value or ease of use. These perceptions influence one’s attitude towards system use, which influences one’s behavioural intention to use a system, which, in turn, determines actual system use. After updates and refinements to the model, attitude towards use (PU) was eliminated. In later work (Venkatesh and Davis, 2000) the model has been simplified to stress that perceived ease of use is the single most important criterion.

One issue that is not really explored is the suggestion by Gefen and Straub (2000) that ease of use and usefulness may actually apply to different stages in the adoption of e-commerce/e-government. Therefore, ease of use may be the dominant decision process when first considering the usage of e-commerce or e-government in principle, and usefulness becomes dominant when a particular transaction is under consideration (Gefen and Straub, 2000).

2.3.2.2 Diffusion of Innovation (DOI) Model

The DOI model provides a different view of how users adopt new technologies (Rogers, 1995). DOI postulates that the rate of an innovation’s diffusion is dependent upon five factors of: relative advantage, complexity, fit to existing technology and relative ease with which it can be adopted:

i. **Relative advantage;** refers to the belief that this new system provides benefits beyond the one preceding it,

ii. **Complexity;** refers to the perception by the potential user that the innovation will be difficult to understand and use,

iii. **Compatibility;** refers to the degree to which the new system is compatible with presently held beliefs, experiences, and needs of the user,

iv. **Trialability;** refers to the degree to which the user can experiment with the new system on a limited basis, and

v. **Observability;** refers to the degree to which the user can see the results of the new system.

From these building blocks, the model (Rogers, 1995) proposes takes a more complex view of technology adoption than was offered within TAM. DOI stresses
compatibility with current practice (e.g. many e-commerce systems use images from conventional physical shopping such as shopping carts and cashiers). It also suggests that an idea can be adopted when it either reaches critical mass in a particular social group, or if it is viewed as new and exciting. In an e-government sense, what then matters is that the process of completing a transaction, for example, an on-line tax return, is broadly similar to that of doing so manually (Hung et al, 2006) and, as Hung et al (2006) confirmed, that users were likely to cite colleagues and friends as an important influence.

However, like TAM, the DOI model also does not focus on how decision makers might combine the various categories or what their response might be if an innovation is badly flawed in one respect, but appears to satisfy their concerns in other respects. Equally, there is little attention to the possibility that different criteria (such as advantage, complexity and compatibility) might have different degrees of importance to early, as opposed to late, adopters.

2.3.2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT was developed due to the perceived weaknesses in both TAM and DOI, and sought to integrate both consumer and provider viewpoints with technological issues to explain adoption (Norris and Moon, 2005, Wixom and Todd, 2005, Venkatesh et al., 2003). From this broad perspective, different factors (such as age, gender and previous experience) were considered as to a range of variables that might affect adoption. Subsequent work has concentrated on testing of the model and refining the variables in order to explain a greater proportion of the variance (Corbitt et al., 2003, Gefen and Straub, 2000, Kim et al., 2008, Kumar et al., 2007) but the underlying assumptions regarding citizen decision-making remain relatively under-developed.

A typical structure adopted within the broad UTAUT framework (Lean et al., 2009) is set out below in Figure 2-3:

Figure 2-3 Factors captured by UTAUT
As Figure 2-3 shows, the model captures a range of issues including the characteristics of the individual (gender, age, previous experience), the extent to which genuine choice exists, the expected gains and effort involved, as well as social influences. The model assumes these factors combine to create an intention to act in a particular way (Behavioural Intention) and this intent then determines the chosen action (Use Behaviour). Some research has supported the importance of the following three potential variables (Venkatesh et al., 2003):

i. **Effort expectancy** – similar to perceived ease of use in TAM or complexity in DOI,

ii. **Performance expectancy** – similar to perceived usefulness in TAM or relative advantage in DOI, and

iii. **Social influence** – points to the degree to which an individual believes important others think he or she should use the new technology.

However, other research (Benbasat and Barki, 2007) argues that perceived usefulness is the only construct that actually explains observed variances (Carter, 2008). On the other hand, when individual, as opposed to aggregate, views are the focus, other research has found that a variety of factors are important for different individuals (Dulle and Minishi-Majanja, 2011). Therefore it is important to note that different factors are cited in terms of their behavioural intention as opposed to the

Reproduced from: Lean et al, 2009, p. 46, based on Venkatesh et al., 2003
reason cited for actual usage. This is important, and calls into question the common view that the intention and action are the same issue, as in Ajzen’s theory of planned behaviour (Ajzen, 1991). This distinction, and a discussion of Ajzen’s theory, is returned to below as part of the development of a model of adopter decision-making.

2.3.2.4 Evaluation and Comparison

This section evaluates and compares the above three models. Figure 2-4 (below) explains the relationship between the existing models and shows their differences and similarities. Two variables re-appear in each version, with perceived ease of use (TAM), Effort Expectancy (UTAU) and complexity (DOI) mapping onto each other, as do Perceived Usefulness (TAM), Performance Expectancy (UTAU) and Relative Advantage (DOI).

Figure 2-4 Comparison of TAM, DOI, UTAUT

<table>
<thead>
<tr>
<th>TAM</th>
<th>UTAU</th>
<th>DOI</th>
</tr>
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<tbody>
<tr>
<td><strong>PERCEIVED EASE OF USE</strong></td>
<td><strong>EFFORT EXPECTANCY</strong></td>
<td><strong>COMPLEXITY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>SOCIAL INFLUENCE</strong></td>
<td><strong>TRIALABILITY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PERCEIVED USEFULNESS</strong></td>
<td><strong>PERFORMANCE EXPECTANCY</strong></td>
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<td></td>
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<td><strong>OBSERVABILITY</strong></td>
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<td></td>
<td></td>
<td><strong>RELATIVE ADVANTAGE</strong></td>
</tr>
</tbody>
</table>

The three models TAM, DOI and UTAUT have a number of factors in common since they are all derived from TAM. TAM suggested that the two key factors in leading to adoption are the perceived usefulness of the new technology and the perceived ease of use of that technology. In effect, something will be adopted if it is either very easy to use or the advantages of use outweigh the difficulties of doing so. Early versions of the model assumed that the decision maker combined the two criteria to reach a weighted judgement; later versions (Venkatesh and Davis, 2000) take the view that only ‘perceived ease of use’ is relevant.

DOI ‘Diffusion of Innovation’ extends TAM by arguing that the speed at which a new technology will diffuse (i.e. be adopted) is driven by five factors. These are: relative advantage (i.e. is using the new system worthwhile compared to the older methods); complexity; compatibility (how closely does the system mirror the existing
procedures and the users’ beliefs); trialability (i.e. can it be tested before full adoption); and, observability (i.e. can the potential user see the process at work for other people?). There is some overlap with TAM in that relative advantage and complexity can be seen as the equivalents of usefulness and ease of use.

UTAUT was developed to address weaknesses in both TAM and DOI (Venkatesh et al., 2003). In particular, it explicitly includes characteristics of the decision maker (gender, age, previous ICT experience), of social influences as well as the process of adopting the technology under consideration (Venkatesh et al., 2003). The latter aspect relies on two characteristics very similar to TAM of effort expectancy and performance expectancy again mirroring ease of use and usefulness. In UTAU, the concepts of effort expectancy can be mapped onto ease of use (TAM) and complexity (DOI) and of performance expectancy to usefulness (TAM) and relative advantage (DOI).

In practice, research using either DOI or UTAU as the research framework tends to start from the assumption that a range of factors may affect the citizen’s decision to adopt e-government including:

a) Gender;
b) Age;
c) Wider experience with ICT;
d) Social influences;
e) Cultural influences and norms;
f) Usefulness;
g) Ease of Use
h) Risk;
i) Trust;
j) Innovation and newness;
k) Compatibility with previous approaches.

2.3.3 A critique of existing models of Technology Adoption

This section reviews the core problem with all of TAM, DOI and UTAUT. This is that they all posit multiple criteria (even TAM just with usefulness and ease of use) that may affect technology adoption but do not offer a method by which the individual adopter chooses either which criteria to adopt, or how they might cope with
a multi-stage, multi-criteria decision. Section 2.3.3.2, in particular, suggests that this gap can be addressed by drawing on the conceptual developments in terms of decision making. This will also help to address the strength in both DOI and UTAUT is that they tend to identify a range of potential factors that might explain e-government adoption (Wixom and Todd, 2005) but with the problem that they do so as a list with no or little exploration as to which might be relevant in a particular instance. In fact, it is common to see many factors identified as having relevance (including age, gender and usage of ICT) but little attention is paid to how these factors may interact. Other concerns include:

i. the extent to which the models distinguish between acceptance and agreement (Klein, 1998), in other words how they deal with situations where there is no choice;
ii. the extent to which such multi-stage, weighted decision processes are actually used in practice (Beach, 1990, Montgomery, 2006);
iii. whether the assumption of a clear linkage between intention and action is valid (Slovic et al., 2006); and,
iv. if these factors have the same impact when applied to the adoption of e-government services as opposed to e-commerce.

These three concerns are developed in turn in the following sections.

2.3.3.1 E-Government Adoption with no effective choice

The potential difference between agreement (i.e. liking and agreeing to something) and acceptance (i.e. using it when you have no choice) is often overlooked in the existing models of technology adoption (Reddick, 2005). Thus e-government can become accepted (i.e. used) due to simple coercion (Francisco, 1995) or the removal of alternative arrangements (March, 1988, Dada, 2006). However, although such approaches might be effective in the short term, they are unlikely to foster trust, or a long-term commitment to e-government as anything other than an administrative convenience (Horst et al., 2007).

There is thus a useful distinction between agreement and acceptance (Cook, 2002, Titah and Barki, 2006). Many models of decision-making assume they are one and the same thing – people do not do things they disagree with – but such a mind-set
fails to take account of power relationships (March, 1988) that can leave little choice in practice, especially when related to government services. As a result, adoption can occur without widespread agreement, if either internal (power) dynamics or external constraints leave little choice, or if the outcomes are more or less acceptable (i.e., it is not worth challenging the outcome, despite concerns with the process or the underlying decision). Consequently, in such circumstances it may be useful to make a distinction between accepting a technological approach and being motivated to make the best use of it (Hall, 2001, Hall and Widén-Wulff, 2008).

2.3.3.2 A Decision-Making Critique

In so far as TAM, DOI and UTAUT employ a model of decision-making it is, as in early versions of TAM, some form of additive weighting between the variables. Within TAM, the criteria are: (a) the perceived value of such an approach; and, (b) the relative ease of use of adoption. In such an approach, the two factors are assumed to be weighted together, and if this (subjectively) weighted value surpasses a particular threshold then the technology will be adopted. This is a variation of the classic economic and early psychological model of Subjective Expected Utility (von Winterfeldt and Edwards, 1986).

However, the potential weakness of a weighted system like TAM is that decision-making is more a sequential process, each stage being resolved by a separate ‘adopt/do not adopt’ outcome (Beach, 1990) rather than weighting all the variables to produce a composite criterion. When faced with a situation that calls for multi-stage decision-making, a common heuristic is to treat one of the stages as ‘dominant’ (Montgomery, 2006) and to base the decision on the viability of that criterion, while more or less ignoring other factors.

This process of ‘Dominance Structuring’ can be seen as a particular development of the older concept of bounded rationality (Simon, 1961, March, 1994). This concept argued that task complexity, lack of time (Maule et al., 2000) and lack of cognitive processing capacity meant that individuals simplified and restructured the decision and in doing so violated the assumptions of rational decision-making embedded in classical economic theory (Slovic et al., 2002, von Winterfeldt and Edwards, 1986). In effect, it is a tool for simplifying a complex situation where the decision is either multi-stage or has many potential variables (Beach, 1990).
Dominance structuring is an important element in psychological theories and may offer one way to understand why different researchers either find that different factors influence adoption of e-government or consistently suggest that more than one factor is relevant. In effect, the dominant criteria will vary according to the actions and beliefs of different people in different situations deciding which particular criteria were dominant for their own decision. In consequence, the decision strategy is informed by both the characteristics of the individual and of the particular situation being addressed (Shafir and LeBoeuf, 2008, Johnson and Busemeyer, 2010). In turn, the problem formulation and the adopted decision strategy can have an effect on the likely decision (Payne et al., 1993). This suggests that characteristics of individuals and situations lead to variances (both between individuals and between situations) in their decision to engage with e-government services. Key in this case, is the argument that each decision is restructured so that one single criterion is made into a ‘dominant’ (DeKay et al., 2009, Simon et al., 2006, Montgomery, 2006, Kerstholt and Raaijmakers, 1997) factor and the entire decision is made on that basis. What is also appealing is there is no a-priori reason for an individual decision-maker to always rely on the same dominant characteristic (McAndrew et al., 2009).

Montgomery, and his colleagues (DeKay et al., 2009, Montgomery, 2006), argue that the key to understanding any actual choice is first to understand how the decision-maker structures the problem to enable them to make a decision. In this respect, the ‘pre-decisional’ phase consists of two elements. It starts with a pre-editing phase where “the decision maker attempts to simplify the decision by selecting those alternatives and attributes that should be included in the representation of the decision situation” (Montgomery, 2006, p. 343). From this list a ‘promising alternative’ is selected for closer consideration. In effect, in terms of the UTAUT structure, the decision-maker reviews all the criteria identified (for example in the list at the end of section 2.3.4 above) and then selects one as the potential basis on which the decision will be made.

The next phase is to review this ‘promising alternative’ and the preferred criterion is that it dominates all the others on all the available criteria (Shafir and LeBoeuf, 2008, Simon et al., 2006). Critically, if the ‘promising alternative’ fails to meet a particular criterion, conventional decision theory, such as SEU, assumes there will be a reversion to the search phase, for a new alternative, or some sort of multiple criteria comparison will take place (von Winterfeldt and Edwards, 1986) to trade off
attractiveness on one criterion with perceived weaknesses against other criteria. Instead, Montgomery (Montgomery, 2006) suggests that the decision-maker will restructure the problem so as to try to ensure the ‘promising alternative’ is the most appropriate. A critical part of the selection of the ‘promising alternative’ is, especially in conditions of uncertainty, to make perceived reduction of risk an important criterion (DeKay et al., 2009). These techniques can include ignoring negative attributes, conflating criteria so as to remove complications, or simply ignoring the perceived disadvantage. Such strategies are potentially flawed and can lead to what is sometimes described as post-decisional regret (Svenson, 2006), when a deliberately overlooked issue undermines the perceived validity of the choice made.

However, many theories that fall into the broad field of naturalistic decision-making (McAndrew et al., 2009) are stronger at explaining why a decision-maker acted as they did rather than predicting how they will act (Montgomery, 2006). Equally, dominance structuring captures the verbal processes that people report but downplays how the individual might intervene after they have made their initial choice to ensure they achieve their desired outcome. Finally, in its conventional form, it tends to ignore the reasons why individuals may undertake dominance structuring and why they may prefer one ‘promising alternative’ over another.

This formulation of the decision process in use has interesting implications for how the decision-maker may make use of the various characteristics hypothesised in UTAUT and DOI to decide to adopt or reject e-government services. Not only is it to be expected that one criterion will be ‘dominant’ for a given individual, but this may also vary between individuals depending on their past experiences (Johnson and Busemeyer, 2010, Simon et al., 2006, Svenson, 2006), such as knowledge, skills, expertise, and attributes of the particular situation and/or decision being made (Beach, 1990).

2.3.3.3 The gap between Intention and Action

The second approach to decision-making sometimes used in the literature relies on Ajzen’s (Ajzen, 1991, Ajzen, 2001, Hung et al., 2006) contested (Fischoff, 2001, Eiser and van der Pligt, 1988) assumption of a direct link (both ways) between intent and action, something that has been absent in psychological theories since the large scale rejection of behaviourist theories of psychology (Skinner, 2002).
From an intuitive perspective, treating intention and action as the same thing seems to be a reasonable assumption. However, research in the psychology of choice offers a somewhat counter-intuitive perspective. This research is based on attribution theory (Brown, 1986) and is applied in work on preference reversal (Schkade and Johnson, 2006) and affect or mood (Slovic et al., 2006). Psychologists find that intention and action often diverge, with this divergence occurring when a person commits to an action that is initially seen to be desirable (either for personal or social reasons) but later discards the action when negative consequences are revealed, the level of effort required is too great, or commitment to the intention is rescinded for affective reasons. Slovic et al. (2006, p.452) describe affect as “both wondrous and frightening: wondrous in its speed, subtlety, sophistication and ability to lubricate reason; frightening in its dependency on context and experience, allowing us to be led astray or manipulated, inadvertently or intentionally, silently and invisibly”.

Thus there is no linear link between thought and action (Yzerbyt et al., 1988, Lories et al., 1998), as even memory, the core element to any structured thought process is “itself a reconstructive process, there is always the potential for manipulation after the fact” (Lories et al., 1998, p. 9). This in turn reinforces the importance of adopting a model of choice behaviour that allows for differences between individuals to influence the criteria they adopt for their decision-making.

2.3.3.4 The difference between Adoption and Continuation Decisions

One additional useful concept in the decision-making literature is the difference between an adoption and a continuation decision (Beach, 1990). The former is the decision to do something for the first time and the second is the decision to continue with an already adopted course of action. This may partially explain the consistent finding that prior experience with ICT in general and e-government services in particular is positively correlated to a willingness to do so again (Evans and Yen, 2006). It may also have some bearing on the suggestion (Gefen, 2000, Gefen and Straub, 2000) that different decision criteria may be applied when using e-government for information searching as opposed to conducting actual transactions.

The concept has a considerable history, stretching back to the economic concept of ‘sunk costs’, in other words previous investment in a course of action will make the decision-maker less likely to abandon it (Beach, 1990). The psychological
development of this, is that an on-going choice will be subject to less stringent tests (Kerstholt and Raaijmakers, 1997) as, in effect, rejection will mean also rejecting both the original decision (Svenson, 2006, Tversky et al., 2006) as well as making a new one. A final consequence is that, in part to avoid this type of outcome, negative information will be down-played so as to minimise the apparent clash with the existing choice (Allison, 1971, Janis, 1982, Klein, 1998).

2.4 E-government Adoption within the OECD

E-government adoption within the OECD can be broken down into three related issues: the type of services on offer; the quality of those services; and citizen take-up of those services (OECD, 2009). Although there are variances between states, the OECD is of the view (OECD, 2009) that the main barrier to take-up is not citizen attitude, nor the usefulness of the services on offer, but that in most states such services are still fragmentary and often remain at the level of information provision or allowing simple transactions (such as on-line payment of bills). In this respect, while there has been a shift in tone to citizen-centric services, in reality administrative convenience remains a major driver (Seifert and Chung, 2005). An on-going barrier in many countries is the internal administrative divisions between state, regional and local government and the way in which related services are delivered by different state entities (OECD, 2008). This leaves a major challenge in terms of how to ensure that all e-government services reach a comparable standard (Traunmuller and Leitner, 2008), with a longer term vision that the concept of e-government loses any real meaning in that electronic provision, and on-line take-up, of government services become the norm.

Actual levels of citizen take-up remain variable across the OECD countries. For example, a 2009 survey for the EU as a whole, found that 35% of those with access to the internet make use of e-government, 37% are interested in using e-government and the remaining 28% are not interested (European Commission, 2010). However, this average masks considerable variance between even closely-related countries. For example, e-government is used by 22% of the population in Belgium and 53% in the neighbouring Netherlands (European Commission, 2010). Overall, actual users are most likely to be well-educated, a finding confirmed by studies in
Australia and New Zealand (Goldfinch et al., 2009). Of those making no use of e-government, the loss of personal contact was the primary reason cited by 35% of internet users, as shown in Figure 2-5:

**Figure 2-5 Barriers to E-Government adoption in the EU**

![Bar Chart]

(Source: European Commission, 2010)

The European Union study revealed little interest by citizens in the provision of integrated services (European Commission, 2010), despite this often being promoted by organizations such as the OECD as a desirable end-goal (OECD, 2009). A number of respondents, however, expressed concern at the privacy and civil liberties implications of such ‘joined-up’ government (European Commission, 2010). This confirms the consistent finding that user acceptance is critical to large scale e-government adoption (Verdegem and Verleye, 2009) and it is not something that happens automatically just because services are made available.

In addition to on-going citizen resistance to adoption, various studies within the OECD continue to stress the weaknesses in provision at the local government level (Torres et al., 2005), which have been reported consistently across multiple studies (Scott, 2005). Finally, some states have particularly complex administrative structures that are mirrored in their e-government arrangements. For example, within the EU, Belgium is particularly affected in this respect as it is not only officially bilingual but there is an almost complete split between the Dutch and French-speaking administrative units (Verdegem and Verleye, 2009).

Overall, even recent studies of e-government take-up within the OECD suggest a large proportion of the population makes little or no use of the services on offer. This may be partly related to the quality and range of services on offer, but
mostly it appears to stem from citizen resistance. Users will adopt e-government when it is convenient for them (Verdegem and Verleye, 2009) and this resistance is increased due to the fractured nature of public administration at local, regional, national or linguistic (it is notable that Belgium with its low level of adoption is a bi-lingual state with in effect two systems of public administration) levels. This is supported by Irani et al (Irani et al., 2007) who note that despite considerable expenditure on ICT, e-government in the UK remains fragmented, in part due to the constantly changing regulatory environment (driven by both national and supranational bodies) and in part due to the desire to share data between systems and the practical and privacy-driven, constraints on this (Irani et al., 2007).

2.5 E-government Adoption outside the OECD

The adoption of e-government outside the OECD countries often tends to emphasise the importance of both technological and human factors in undermining the process (Al-Fakhri et al., 2008, Carter and Weerakkody, 2008, Dada, 2006). One frequent suggestion is that these initiatives often fail, and fail badly (Al-Fakhri et al., 2008):

“Results indicated more than one third of e-government projects in developing or transitional countries are total failures; half are partial failures; and roughly one-seventh are successes” (Al-Fakhri et al., 2008, p. 60).

This raises the questions whether non-OECD countries face different problems to those within the OECD, or whether the differences be explained purely in terms of wealth, previous experience or precise stage in the process of introducing e-government services. In simple terms, is the problem one of trying to implement an inappropriate solution (Heeks and Bailur, 2007) or of underlying capacity to handle e-government? This question has some bearing on how to interpret the substantial literature on the failings of e-government outside the OECD, when by contrast it may be more useful to frame such judgements, not against some arbitrary goal but against the stated intent of the particular country (Ndou, 2004). In fact, the imposition by bodies such as the World Bank of a particular model of development (Williamson, 2005) has led to a search for good practice that can then be replicated out of context.
(Avgerou, 2008) and any flaws may be ascribed to the failures of the recipient state. An alternative explanation (Avgerou, 2008) is to concentrate on:

“the process of innovation in situ, thus tracing the cognitive, emotional, and political capacities that individuals nurtured in their local social institutions bring to bear on unfolding innovation attempts. Through this approach the socially embedded innovation discourse sheds light on what, regarding an attempted innovation, is locally meaningful, desirable, or controversial, and therefore how innovation emerges (or is retarded) from the local social dynamics” (Avgerou, 2008, pp 5-6).

Thus something as apparently non-contentious as the Jordanian government’s development of the computerisation of the issue of driving licences can be usefully explored from this perspective (Ciborra, 2005). In this case, the stated goal was clear: greater efficiency and better service to Jordanian citizens through the use of ICT. However, the underlying agenda was different, as the process was funded and structured so as to move the issue of driving licences away from the Jordanian state and to the private sector – in other words, the context was the imposition of a particular model of the state and economic order. From this perspective, an initiative that appears to have failed badly (Ciborra, 2005), as the service became worse, was in fact quite successful. The state had been removed, and thus, in the World Bank’s economic model (Williamson, 2005), this, not service to consumers, was the real success. The new arrangements also made it easier for agencies of the state to share information on Jordanian citizens, both internally and with other countries (Ndou, 2004, O’Hara and Shadbolt, 2008, Yildiz, 2007).

On the other hand, Heeks (2002) suggests that the basic reasons are a combination of a mismatch between the Information Systems solution proposed and local capacity to successfully use this level of technology, combined with an over-emphasis on technology rather than system or individual aspects. In effect, as others have suggested (Yildiz, 2007), the focus on an externally-driven ICT specification (both as to purpose and as to the type of technology) leads to an attempt to impose something that is inappropriate in the particular context (Ndou, 2004). In this respect, the political and social norms of a given country are important elements in
determining the success or failure of an e-government implementation (Heeks and Stanforth, 2007).

All these factors can inhibit the successful implementation of e-government (Carter and Weerakkody, 2008, Bekkers and Homburg, 2007). The automation of bad systems does not mean any improvement in service (Evans and Yen, 2006), – in fact service may become worse as the individual contact is lost and with this an alternative means to negotiate the rules and regulations. As with adoption in the OECD, it is useful to divide the process between the decision of citizens to adopt and of the state to provide such services.

2.5.1 Citizen Adoption of E-Government outside the OECD

So far, there have only been a relatively small number of studies that have reviewed citizen adoption of e-government services outside the OECD. For example, Hung et al. (2006) studied the move to introduce e-payment of tax in Taiwan. They sought to test a psychological model of technology acceptance, in this case Ajzen’s Theory of Planned Behaviour (Ajzen, 2001, Ajzen, 1991). This can be seen as essentially a sub-set of those psychological theories of choice where revealed actions are held to be closely related to the underlying beliefs and attitudes (von Winterfeldt and Edwards, 1986) of the decision-maker.

To carry out the research, Hung et al. (2006) obtained completed electronic questionnaires from 1099 of over 8,500 registered taxpayers, and the questionnaire was analysed to gather information on individual attitudes, perceived social norms and perceived behavioural control. The latter concept does not reflect a limitation on choice but instead “the perceived ease of difficulty of performing the behaviour and it is assumed to reflect internal and external constraints on behaviour” (Lean et al., 2009, p. 462). The analysis suggests that the overall specification explains 72% of the variation in the intention to use the on-line process, with individual attitudes by far the dominant component in this decision.

Their model assumed that issues such as perceived usefulness, perceived risk, trust and personal interest in innovation all form part of the underlying attitudes (and with increasing risk having a negative impact ) to the adoption of e-government services. In turn, external influences (of varying types) constitute the subjective norms, and technological ease of use forms the behavioural element. In turn, these
three broad constructs can be combined to determine intention. When Hung et al. (2006) compared the attitudes of ‘adopters’ with ‘non-adopters’ they particularly noted that social influences had a strong influence on the decision to adopt, and that non-adopters were reacting against what they saw as ‘perceived behavioural control’ (in other words some construct around ease of use).

Therefore, for a relatively simple transactional form of e-government (completing tax returns), this study suggests that the citizen’s decision is driven for the most part by the attitudes of the individual. However, especially those who did adopt the process were heavily influenced by the attitudes of friends, colleagues and family. Overall, this can be seen as a useful study of the citizen adoption of a simple e-government transaction under conditions of free choice.

Lean et al (2009) looked at the overall adoption of e-government in Malaysia (Lean et al., 2009) and provided an early evaluation of the Malaysian’s government’s approach to e-government, launched in 2004 as:

“Electronic Government (e-government) was initiated in Malaysia on 24 February 2004. The Vision of e-government is to transform administrative process and service delivery through the use of IT and multimedia. The Malaysian government has launched a website to collate all the services provided from one roof or portal rather than having separate websites for respective services provided” (Lean et al., 2009, p. 459).

Unlike in Hung et al.’s (2006) study, the sample was not random and consisted of “colleagues, course mates, friends and neighbours” (Lean et al., 2009, p. 465), of whom 197 were approached and 150 useable responses were received. From this sample the researchers suggest that trust (both trust in the accuracy of the individual interaction and trust about other uses of the data provided) are important, but this was not expressed in terms of the technical issues (user authentication etc.) but more as an unstructured judgement and general feeling. Other important factors included the views of friends and colleagues as well as ease of access.

This study is that, unlike Hung et al., (2006) does not capture the opinions of non-adopters and, moreover respondents were drawn from close friends and neighbours rather than being indicative of the social make-up, or range of opinion, across Malaysian society.
A study conducted in Thailand (Wangpipatwong et al., 2008) concentrated on the decision of users to continue to use e-government websites and services, rather than the initial decision to do so. The sample of 614 was limited to those who already possessed a bachelor's level degree and the decision to continue to use e-government was framed in terms of the criteria of TAM (Davis, 1986, Venkatesh et al., 2003) but with the addition of a measure to capture level of IT confidence. Due to the sample formation, the population covered was skewed to relatively high (in Thai terms) income earners and those under 30. In this case, the researchers found that all three of the measures (ease of use, perceived usefulness and IT literacy) contributed to the decision to continue to use e-government services. Perceived usefulness was the single most important factor as shown in the Figure 2-6:

**Figure 2-6 Reasons to continue to use E-Government**

However, in their discussion of the findings, what is not discussed is that the model as specified captures only 43% ($R^2=0.435$) of the observed variance. In statistical terms, this implies that the equation is under-specified (i.e. that additional criteria would reduce the level of residual variance) and thus add to the explanation (Everitt and Wykes, 1999, Gujarati, 1978). A second weakness in the discussion is that no account is taken of the considerable amount of research from a decision-making perspective that indicates that different criteria are applied when deciding to continue with a choice, as opposed to making a new choice (Beach, 1990, Einhorn, 2000, Klein, 1998, Payne et al., 1993, Rosman et al., 1994, Svenson, 2006). From this perspective, the main issues are that less stringent criteria are applied to what
Beach (1990) calls a progress decision (i.e. the decision to continue once a particular option has already been adopted), in part due to inertia (Klein, 1998) and in part due to the concept of ‘sunk costs’ (Svenson, 2006).

Other studies, such as that by Shareef et al., (2009) of e-government adoption in Bangladesh suggest a widespread desire to use e-government services, but this desire is frustrated in part by what is available and in part by technological problems (both of access and the design of the e-government systems). A similar study of e-government adoption in Zambia (Weerakkody et al., 2007) using a survey-based methodology argued that there was little consistent effort by the state to address the barriers to adoption, such as lack of knowledge, lack of human capital and weaknesses in infrastructure. In effect, effort had been put into the initial creation of some elements of e-government, but none into enabling widespread adoption among the population.

2.5.2 E-Government Adoption in the KSA and the wider GCC

2.5.2.1 Contextual Information

Before considering in detail the adoption of e-government in the KSA, it is useful to quickly present some contextual information on the country and relevant developments elsewhere in the GCC. The modern state of Saudi Arabia was formed as part of the post-World War 1 division of the Middle East following the defeat of the Ottoman Empire (Beling, 1979), although the region had been de facto independent since the early 1800s under the rule of the family of Al-Saud and heavily influenced by the then new Wahabist interpretation of Islam (Beling, 1979). It was a relatively poor country until the large-scale discovery and extraction of oil in the mid-1930s and the government still essentially consists of a single extended family who control the state (Beling, 1979). Recently, the state has sought to both increase the extraction of other minerals and to diversify the country’s industrial base. However, oil continues to generate 90% of all export earnings, producing around 35% of the GDP and generating about 75% of tax revenues (SAMIRAD, 2010). However, the economy has stagnated over the last 6-8 years, and this, combined with an increasing population, has influenced the government’s economic policy (SAMIRAD, 2010).
Part of this change has been to seek to ensure more jobs go to native Saudi citizens rather than being taken up by expatriate labour (Ministry of Labour, 2009).

Although oil has been the foundation of the Kingdom’s current wealth, it is also seen as having fostered a culture of corruption and entitlement (Dekmejian, 1994). The Saudi state has been under considerable pressure, especially since the Second Gulf War at the start of the 1990s, from radical interpretations of Islam (Dekmejian, 1994). The net effect of these various dynamics has been to leave a state that scores very poorly on various international comparators of both press and individual freedom, with particular restrictions placed on women (Freedom House, 2006, UNICEF, 2009) and which is often accused of human rights abuses (Amnesty International, 2010).

Saudi Arabia is a reasonably prosperous country with a relatively urbanised population, and has fairly successful education and health care systems. However, population growth is significantly out-stripping economic growth, and this may be one reason why the e-government developments place so much emphasis on economic efficiency. Table 2-2 (below) presents some information on the KSA, the United Arab Emirates (UAE) as the richest (on a per-capita basis) of the states that form part of the Gulf Cooperation Council (GCC) and Australia, as an example of a relatively typical OECD country.

Table 2-2 Saudi Arabia, Basic Indicators (2008)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Saudi Arabia</th>
<th>UAE</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNI (Gross National Income for each individual)</td>
<td>$15,500</td>
<td>$26,210</td>
<td>$40,350</td>
</tr>
<tr>
<td>Economic Growth (per annum)</td>
<td>0.4%</td>
<td>-0.1%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Population</td>
<td>25m</td>
<td>4.5m</td>
<td>21m</td>
</tr>
<tr>
<td>Adult Literacy</td>
<td>85%</td>
<td>90%</td>
<td>98%</td>
</tr>
<tr>
<td>Literacy under 18</td>
<td>97%</td>
<td>99%</td>
<td>98%</td>
</tr>
<tr>
<td>Female Literacy</td>
<td>81%</td>
<td>89%</td>
<td>98%</td>
</tr>
<tr>
<td>Life Expectancy at Birth</td>
<td>73</td>
<td>77</td>
<td>82</td>
</tr>
<tr>
<td>Population Growth</td>
<td>2.4%pa</td>
<td>4.1%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>
(all values are in US $, and are derived from the UNICEF statistical series (UNICEF, 2010)

### 2.5.2.2 Adoption of the Internet

One issue that has affected the introduction and take-up of both e-government and e-commerce is the relatively recent increase in internet usage. This is partly due to the lack of support for non-Latin scripts by the main browsing software until 2000 (Pons, 2004) and in part as the Saudi authorities were unsure whether the internet would allow the inflow of westernised ideas and values (Hedley, 1998). The result was that in 2000 it was estimated there were around 200,000 internet users in the KSA (Kingdom of Saudi Arabia, 2010) and this had grown to around 2.5 million by 2005.

**Table 2-3 Internet Users in Saudi Arabia since 2000**

<table>
<thead>
<tr>
<th>Date</th>
<th>Approximate users</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2000</td>
<td>200,000 users</td>
</tr>
<tr>
<td>April 2001</td>
<td>690,000 users</td>
</tr>
<tr>
<td>December 2001</td>
<td>900,000 users</td>
</tr>
<tr>
<td>July 2002</td>
<td>1,110,000 users</td>
</tr>
<tr>
<td>December 2002</td>
<td>1,453,000 users</td>
</tr>
<tr>
<td>September 2003</td>
<td>1,462,000 users</td>
</tr>
<tr>
<td>December 2003</td>
<td>1,500,000 users</td>
</tr>
<tr>
<td>December 2005</td>
<td>2,540,000 users</td>
</tr>
<tr>
<td>December 2006</td>
<td>4,800,000 users</td>
</tr>
</tbody>
</table>

(Source: Kingdom of Saudi Arabia, 2010)

Even by 2008, the KSA was lagging behind both the Middle East on average and other GCC states in terms of take-up and in particular in terms of access via broadband, as shown in Table 2.4:

**Table 2-4 Internet Take-Up, Selected Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Internet Users</th>
<th>% of Population</th>
<th>Broadband Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East</td>
<td>57.4m</td>
<td>28.3</td>
<td>2,720,500</td>
</tr>
<tr>
<td>Oman</td>
<td>465,000</td>
<td>13.6</td>
<td>15,200</td>
</tr>
</tbody>
</table>
There are obvious differences between the relatively poor Omani and authoritarian Syrian regimes (14-17% of the population as internet users) and the averages for the Middle East (around 28-29%), with Saudi Arabia slightly below the average. Pons (2004) suggests that the differences between Saudi Arabia and the neighbouring UAE are due to the Saudi regime being more worried about the implications of the internet, especially that it would bring in foreign (i.e. Western) influences, quoting Al Abed and Smadi (1996) as suggesting:

“There is a sense of fear among the Saudis that the use of English entails Westernisation, detachment to the country, and a source of corruption to their religious commitment” (Pons, 2004, p. 80).

In particular, the relatively low take-up of broadband has been argued to be a combination of geographical and technological problems, but more linked to a perception of value by both the authorities and potential users (Dwivedi and Weerakkody, 2007). However, other research is starting to suggest (Naqvi and Al-Shihi, 2009) that a more appropriate technological base to develop e-government services in poor developing countries is based on mobile phone rather than computer-linked internet access.

The growth in the number of internet users from around 200,000 in late 2000 to almost 5 million by the end of 2006 has been matched by a steady growth in the number of Saudi registered domain names. In December 2001, there was a single domain registered to .sa, and by 2006, there were over 30,000, most having a commercial domain name:

**Figure 2-7 Spread of domain names in Saudi Arabia (2006)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Users</th>
<th>Users %</th>
<th>Total Domain Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>7.7m</td>
<td>26.8</td>
<td>218,200</td>
</tr>
<tr>
<td>UAE</td>
<td>2.9m</td>
<td>60.9</td>
<td>240,600</td>
</tr>
<tr>
<td>Syria</td>
<td>3.6m</td>
<td>16.4</td>
<td>5,600</td>
</tr>
<tr>
<td>Kuwait</td>
<td>1m</td>
<td>37.1</td>
<td>25,000</td>
</tr>
</tbody>
</table>

(Source: Internet Statistics Compendium, 2009)
Figure 2-7 shows that almost 80% of the sites by 2006 were commercial (.com), with government sites comprising around 9-12% (i.e. .edu, .gov and .sch). In this case this early growth in e-commerce was seen as a precondition for the Yesser developments (Al-Fakhri et al., 2008).

While the internet may well open up the possibilities for open communication (not something welcomed by every government), the dominant language is English, at least until the recent explosion of Chinese-speaking users (Internet World Stats, 2009), and the dominant culture is seen to be American (Hedley, 1998). The KSA government has remained ambivalent about internet adoption due to concerns that open access to information might lead to the loss of local culture, and social and religious norms as citizens absorb a US-centric view of the world. Despite these concerns, there has been large-scale growth in usage with many Saudis using the internet for communication and social networking. However, there are still gaps in technological awareness and expertise (Al-Fakhri et al., 2008), coupled with relatively poor internet access arrangements (Alsheha, 2007), and, especially outside the main cities, very little access to broadband (Dwivedi and Weerakkody, 2007).

It has also been suggested that the motivation of many users of the internet in the Arab World is to avoid (or escape) state control, not to engage with the state (Wheeler, 2009). This suggests an important issue for e-government adoption that has wider implications beyond Saudi Arabia. Many governments wish to use the internet as a vehicle for economic growth and administrative convenience, but do not wish to see it used in a libertarian manner (Wheeler, 2009). Thus, while the advantage to the
government of e-government adoption may be clear, the advantage to individual citizens (especially if they have fears about civil liberties or data theft) is much less so (Yang and Rho, 2007, Kim, 2007). Kim (2007) argues that those governments that acknowledge the civil liberties implications of e-government are also those most successful in terms of implementation and adoption. However, the Saudi regime has remained ambivalent on this point:

“In spite of the existence of national policies and strategies to foster the growth of ICT in Saudi Arabia, outside observers and Saudi officials believe that there is resistance to the Internet among some community leaders, therefore slowing down the pace to progress” (Al-Fakhri et al., 2008, p. 62).

A second important underlying factor limiting the development of e-government is the widespread perception that government services in Saudi Arabia are bureaucratic, run on rigid lines for the convenience of employees not citizens, inefficient and often corrupt (Alsaffar et al., 2009). Due to this bureaucratic model, the adoption of e-government services by agencies, employees, and citizens represents a challenge to traditional views of commerce and government (Alsaffar et al., 2009). In practice, these obstacles include infrastructure and security challenges, educational issues, and governmental and socio-cultural attitudes to e-commerce transactions (Aladwani, 2003, Al-adawi et al., 2005, Al-Sebie and Irani, 2005, Ke and Wei, 2006). These concerns range from fear of identity theft, increased probability of government monitoring and potential loss of property and social criticism (Sait et al., 2004). This combination of official unease about the impact of the internet and inefficient state systems, means that the wider take-up of ICT, and thus of e-government by the state has been hampered (Al Ghoson, 2010).

2.5.2.3 Adoption of E-Government

The Saudi Government launched an ambitious e-government implementation programme in 2005, called ‘Yesser’ (Al Ghoson, 2010). This was to be fully implemented in five years (i.e. 2010), despite the background of weak existing
provision in terms of the existing quality of e-government (Al Ghoson, 2010, Al-Fakhri et al., 2008, AlSabti, 2005). The stated aims of Yesser were that:

“By the end of 2010, everyone in the Kingdom will be able to enjoy – from anywhere and at any time – world-class government services offered in a seamless, user-friendly and secure way by utilizing a variety of electronic means” (Al Ghoson, 2010, p. 1).

The project was based around six main areas:

I. e-government network project,
II. e-government integration infrastructure project,
III. e-government portal project,
IV. Internet portal project,
V. e-services shared data project, and
VI. inter-operable framework project

The overall plan was to ensure that the network capacity and operating protocols were in place before developing systems to share data. Once this was developed, each Government department was then expected to develop its own systems, based on a hierarchy as explained below:

“The Front-end layer contains agencies’ websites and portals, e-government portal, and corporate systems … . The Middle layer is an E-services integration infrastructure which consists of user interaction toolkit, integration bus, user security gateway, and payments gateway. The Back-end layer is the agencies’ back-end system” (Al Ghoson, 2010, p. 3).

In moving from the provision of information to the provision of services, control of the labour market was an early focus. This involved moves to match Saudi citizens to the available vacancies by registering on-line, and another early focus was on the provision of services for expatriate workers (work permits and labour approvals). This combination placed the Ministry of Labour at the forefront of introducing Yesser (Ministry of Labour, 2009), reflecting Saudi concerns at the
performance of a relatively sluggish economy leading to under-employment of Saudi citizens. It is clear that at least part of the reasoning is as much to regulate the labour market as to use e-government services to facilitate individual labour search, as the Ministry website sets out:

“The labour market in the Kingdom suffers from some phenomena and practices that destabilize the market and impede the process of nationalizing jobs, especially the penmen of trading in visas that help expatriate workers flow into the kingdom without an actual need for them or specific work to do, and at the same time, they impair the reputation of the Kingdom. There is also the penmen of some employers who register Saudi citizens in their records of employees to deceitfully imply that they have achieved the required rate of employing Saudi citizens, or placing expatriate workers in occupations exclusive to Saudis.” (Ministry of Labour, 2009)

As this quotation shows, a major element of the early development of Yesser was informed by the perceived need of the state as opposed to being developed from the perspective of the citizens.

In theory, this meant that by the time the fieldwork for this research was conducted in 2010, Yesser should have been fully implemented. However, there was a lack of evidence as to recent progress, and while the main Saudi website (Yesser, 2010a) continues to list the projects undertaken within the framework, and to provide information to potential users (Yesser (E-Government) Program, 2010), the latest evaluation reports were published in 2008, and thus cover only the earliest implementation phase (Yesser, 2010b). Nonetheless, as is clear in Table 1-1, progress has continued beyond the notional end date for Yesser.

In summary, e-government is a relatively recent innovation for Saudi Arabia, in part due to the slow adoption of the internet and delays in creating an effective telecommunications network. As noted above, the first purely Saudi sites did not exist until 2001 and it was not until 2002 that there were more than 1 million users (out of a population of 26-27 million). The early usage of e-government was essentially at the level of providing information rather than services. However, between 2005 and 2010, the stated goal was to shift to a fully-integrated, easy-to-use, citizen-centric model of e-government.
It is also useful to compare e-government in the wider GCC region and specifically with that in the KSA. E-commerce and e-government effectively did not exist in the KSA before 2000 and were very limited elsewhere in the GCC (Al-Khouri and Bal, 2006). Most studies suggest that the fundamental reason for e-government implementation was a perceived desire to foster economic growth and modernisation as well as a desire to meet perceived citizen expectations (Al-Khouri and Bal, 2006). However, particularly in Saudi Arabia, resistance from some parts of society has remained strong:

“In spite of the existence of national policies and strategies to foster the growth of ICT in Saudi Arabia, outside observers and Saudi officials believe that there is resistance to the Internet among some community leaders, therefore slowing down the pace to progress” (Al-Fakhri et al, 2008, p. 62).

The belief that the introduction of e-government is being hampered is supported by a review of Saudi government workers:

i. “Half of the total participants either agree or strongly agree that senior management resists any change in the way an agency accomplishes work”;  
ii. “Fully 65% of all respondents agreed with the statement that “fear of consequences and results of the process of transition to e-government” is one of the obstacles to implementing e-government”;  
iii. “Forty-seven per cent of respondents consider providing the same services among the government agencies as an obstacle to implementing e-government successfully” (all quotes from Al-Fakhri et al, 2008, p. 72).

The other problem that influenced the early introduction of e-government in Saudi Arabia as opposed to neighbouring UAE is the relatively larger scale use of English in the Emirates than in Saudi Arabia (Pons, 2004). It has been estimated that some 80% of the population of the UAE are expatriates, and many of these come from the Indian sub-continent and other areas with a tradition of English use (Pierre-Louis et al., 2004). This has led to the widespread use of English as a second language to facilitate communication between the various expatriate communities and natives of the UAE. The UAE was the first state in the region to adopt e-government services
(Evans and Yen, 2006, Al-Fakhri et al., 2008) and this advantage stemmed from prior long-term investment in ICT, a social and political culture that was open to the world, and a well-educated domestic population (Abanumy and Mayhew, 2005).

(Al-Fakhri et al., 2008) argue that the UAE’s provision of e-government services is far richer than that available in Saudi Arabia. The UAE was quicker to move from providing information to providing services and also provides far more information, more logically ordered for potential users. This relative advantage has been sustained (UNDESA, 2009) with provision in both Kuwait and the UAE outstripping developments in Saudi Arabia and Oman, and with only minimal provision in Yemen, by far the poorest GCC country.

Table 2-5 Relative Quality of E-government within the GCC

<table>
<thead>
<tr>
<th>Country</th>
<th>2008 Index</th>
<th>2005 Index</th>
<th>2008 Ranking</th>
<th>2005 Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Arab Emirates</td>
<td>0.6301</td>
<td>0.5718</td>
<td>32</td>
<td>42</td>
</tr>
<tr>
<td>Cyprus</td>
<td>0.6019</td>
<td>0.5872</td>
<td>35</td>
<td>37</td>
</tr>
<tr>
<td>Bahrain</td>
<td>0.5723</td>
<td>0.5282</td>
<td>42</td>
<td>53</td>
</tr>
<tr>
<td>Jordan</td>
<td>0.5480</td>
<td>0.4639</td>
<td>50</td>
<td>68</td>
</tr>
<tr>
<td>Qatar</td>
<td>0.5314</td>
<td>0.4895</td>
<td>53</td>
<td>62</td>
</tr>
<tr>
<td>Kuwait</td>
<td>0.5202</td>
<td>0.4431</td>
<td>57</td>
<td>75</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>0.4935</td>
<td>0.4105</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>Oman</td>
<td>0.4681</td>
<td>0.3405</td>
<td>84</td>
<td>112</td>
</tr>
<tr>
<td>Syrian Arab Republic</td>
<td>0.3814</td>
<td>0.2871</td>
<td>119</td>
<td>132</td>
</tr>
<tr>
<td>Iraq</td>
<td>0.2690</td>
<td>0.3334</td>
<td>151</td>
<td>118</td>
</tr>
<tr>
<td>Yemen</td>
<td>0.2142</td>
<td>0.2125</td>
<td>164</td>
<td>154</td>
</tr>
<tr>
<td>World</td>
<td>0.4514</td>
<td>0.4287</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Adapted from UNDESA, 2009, p. 35).

To put these values in context, Australia had a value of 0.81 and was ranked 8th in the world in the 2008 report (UNDESA, 2009). Generally, the KSA lags behind other GCC regimes and even relatively poor countries such as Jordan. This forms the background to Yesser (Al Ghoson, 2010), and the Saudi government has had to both address the issue of internet access, and move individual parts of the government from information provision to service provision.

One early focus of Yesser was to improve the telecommunication network (Yesser, 2010a) with a combination of land lines, terrestrial microwaves, satellite communications and submarine cables. Although the geography of the country dictates such a diverse approach, the technical solutions adopted also limit the availability of broadband (Alsheha, 2007). The growth in mobile phone technology
and the related capacity for wireless access to the internet were early preconditions for the successful implementation of e-government (Communications and Information Technology Commission, 2005). Since the majority of Saudis remain reliant on dial-up rather than broadband access, the KSA government introduced ‘Easy Net’ to reduce the costs to those of a local call and to eliminate any requirement for a separate (to other telephone) payment for internet access. The relatively low take-up of broadband is a particular concern, as it limits the range of transactions that can be supported (Dwivedi and Weerakkody, 2007). Overall, the KSA has experienced substantial growth of internet connectivity in recent years (Sait et al., 2004), with individual Saudi citizens making increasing use of the internet.

In terms of introducing e-government, one important measure has been the introduction of a new National Identity Card to replace a range of existing cards. This development is common across the Gulf Cooperation Council (GCC) countries (Saudi Arabia, Kuwait, Qatar, Bahrain, United Arab Emirates (UAE), and Oman) and is designed to replace passports for citizens of those countries moving within the region. However, other aspects are specific to Saudi Arabia, such as the process of issuing visas for Muslims wishing to visit Saudi Arabia for religious reasons (Al Alamia, 2010). The existing e-payment (SADAD) system was brought within the Yesser process and aims to facilitate e-purchasing by consumers of a range of services, including utility and phone bills as well as payments for government services (SAMA, 2008). In effect, it is a government-organised e-banking system that is used both for private commercial transactions and purchases and/or payments using the e-government portals.

Despite the government’s efforts, the e-government services are still seen as inefficient (Abanumy and Mayhew, 2005, Al-Fakhri et al., 2008) and e-commerce practices are not progressing at the expected rate (Al-Otaibi and Al-Zahrani, 2009). There are also enduring concerns about internet security, and even within government circles (Al-Fakhri et al., 2008) only 19% believe that the systems introduced had the basic check of an ‘electronic signature’ to verify who had entered, altered or accessed data. It is therefore no surprise that almost two-thirds (64%) of the respondents believed that “the lack of security and safety of information is considered one of the challenges facing implementing e-government programs in Saudi government” (Al-Fakhri et al., 2008, p. 72).
Researchers speculate that these failings may be related to socio-cultural (Al-adawi et al., 2005, Aladwani, 2003, Al-Kahtani et al., 2006) or demographic reasons (Aladwani, 2003, Al-Kahtani et al., 2006). It is also notable that Saudi e-commerce practices are generally immature, and many critical drivers are either missing or very weak (Abanumy et al., 2005, Al-Otaibi and Al-Zahrani, 2009).

**2.5.3 Summary**

It is a common assumption in the e-government literature that provision within the OECD is more advanced and more widely adopted than outside (UNDESA, 2009). However, Sections 2.4 and 2.5 above indicate that there are large divides within both groups and enduring problems in the OECD of convincing citizens that e-government is in their interests as well as overcoming administrative barriers between layers of government. It is also common to find e-government described as citizen-centric when the underlying driver is administrative convenience (Bekkers and Homburg, 2007, Rose and Miller, 1992, Seifert and Chung, 2005, Verdegem and Verleye, 2009).

From the above discussions, a preliminary map (Figure 2-8) is constructed mapping various provisions (inside and outside the OECD) onto the proposed in Figure 2-2 above. This shows a range of variations in terms of hypothesised level of provision and motivation onto the structure, as shown in the figure below:

**Figure 2-8 Different Types of e-government**
Any such structure can only be schematic as even within individual states there are differences between departments and between local and regional institutions (European Commission, 2010). However, broadly it suggests that provision in the KSA is still linked to administrative convenience and the provision of fewer isolated services than has become the norm in neighbouring UAE and, in turn, much less than is now expected in the OECD. However, it also indicates that within the EU at least, e-government, despite claims to the contrary, is still mostly provided for administrative convenience and mostly consists of isolated services. There is also little evidence that citizens are particularly looking for more integrated provision (European Commission, 2010, Goldfinch et al., 2009).

2.6 Conclusions

This section draws together the research discussed above by considering the various factors often identified in the literature and the way in which they can be grouped to distinguish between personal, technological and transactional factors that may lead the decision-maker to adopt one decision process or another, or to make a particular criterion dominant in their subsequent decision-making. This section takes the
structure of Table 2.6 above and explores just what the individual, technological and transactional factors might consist of. In particular, this chapter has set out the issues and conceptual basis around the adoption of e-government services from the perspectives of technology adoption, and public administration as a process of individual choice. This is a large and complex field, not least in that it draws material from sources as diverse as information systems (Avgerou, 2008), political science (Heeks and Bailur, 2007, Lukes, 1974), public administration (Lee, 1988), models of individual decision-making (Beach, 1990) as well as theories of technology adoption. To date, the technology adoption approach has tended to dominate the study of e-government services adoption (Yildiz, 2007) which may explain some of the gaps in the current theories of e-government services adoption discussed in Section 2.3. In effect, not only may the reason for adoption vary, but the actual criteria used to determine adoption may also vary according to these dynamics (Kerstholt and Raaijmakers, 1997). Thus, in some circumstances adoption may be decided by a trade-off between ease of use and value (Davis, 1986), while in others, for the citizen there may be little choice, and in other situations the critical criterion may be trust (Taylor et al., 2008).

However, the current literature has a number of gaps. In particular, there have been a considerable number of studies that have looked at the introduction of e-government services in developing countries in general (Kim, 2007, Avgerou, 2008, Basu, 2004, Chen et al., 2009, Dada, 2006, Jaeger and Thompson, 2003, Ndou, 2004, Schuppan, 2009), and the Arab Middle East (Abanumy et al., 2005, Abdullah et al., 2008, Alsaffar et al., 2009, Kostopoulos, 2004, Pons, 2004, Wheeler, 2009) in particular. These studies have taken the approach of reporting (Abanumy et al., 2005, Abdullah et al., 2008, Al-Fakhri et al., 2008, Kostopoulos, 2004, Pons, 2004) and theory testing (Al-Solbi and Al-Harbi, 2008, Dada, 2006) as to the factors that assist or impede e-government adoption.

However, there is a relative disconnect between the reasons for e-government introduction in the main theoretical models and those advanced in the more empirical work (Yildiz, 2007). Thus the models, themselves derived from theories of technology adoption in firms, have tended to stress ease of use (presumably for the citizen) as the main factor (Wangpipatwong et al., 2008, Wixom and Todd, 2005). The empirical work points to issues such as trust, and in the context of e-government services, the nature of central government bureaucracies and public administration
remain important issues (Bekkers and Homburg, 2007, Bélanger and Carter, 2008, Guo et al., 2009).

The other weakness in the formal models is that they propose a multi-criteria decision process, and assume the citizen has a choice, to explain the adoption decision. Fundamentally this is at variance with contemporary decision theory, with its emphasis on how individuals rely on single stages in their decision behaviour (Allison, 1971, Beach, 1990, Lichtenstein and Slovic, 2006, Montgomery, 2006, Rosman et al., 1994, Svenson, 2006, Tversky et al., 2006) and, if the process does involve multiple stages, they are sequential not simultaneous. One possible interpretation is that the theoretical models are conflating the decision processes used at different points in e-government adoption into a single yes/no decision to use e-government. In this perspective, there may be, at least, two essentially separate decisions for the citizen:

i. Shall I use e-government services at all? What factors must exist to convince me to do so?

ii. Shall I use this particular e-government service? Why might I use one service but not another?

For the state, a similar hierarchy of decisions could be posited:

a) Why might we seek to introduce e-government? What is the advantage to either the ruling political party or the underlying state bureaucracy (assuming there is any difference between the two)?

b) Why might we introduce this particular service?

The main outcome sought in this context is to improve the understanding of how the nature of the state, the particular type of e-government initiative, the characteristics of the individual and their perception of a given situation might combine to influence the adoption of e-government services. However, by moving from an essentially technology-driven view of e-government to situating the question in terms of politics, public administration and social culture, this research might also help to address how or if:
“non-governmental policy actors such as IT vendor firms are abusing their powers in the policy-making process and serving private interests rather than public interest, then public administration is faced with an alarming situation. If this is indeed the case, precautions that would increase the transparency of the policy-making processes and accountability of non-government policy actors need to be taken. This line of inquiry connects e-government research with those of newer research areas such as non-profit organizations, (policy) networks, third party government, governance, and globalization” (Yildiz, 2007, p. 661).

A second set of potential outcomes will come from the use of concepts in decision theory to explain the citizen’s response. As discussed above, research in this field to date has been hampered by either not considering this process or by reliance on models that equate thought and action. The use of a richer model drawn from decision-making will improve the process of interpreting the findings.
CHAPTER 3

3. CONCEPTUAL MODEL OF E-GOVERNMENT ADOPTION

This literature review can also be used to create a conceptual model of e-government adoption. Table 1-2 summarised the literature on e-government services adoption and the range of factors hypothesised by others or identified as having an influence. In developing a conceptual basis for the present research, the list of factors were set out in Table 1.3 and grouped into the following three broad categories:

- **Individual (or personal) factors.** These would be factors that effectively describe the individual such as age or gender but also their past experiences with ICT, e-commerce and e-government.
- **Technology factors.** In this case how much the technology adopted is a barrier to, or a help to, adopting a particular e-government system; and
- **Transactional factors.** These include aspects that are relevant to the particular instance, such as how important are factors such as trust and risk.

These summary categories can be mapped onto the wider group as follows:

<table>
<thead>
<tr>
<th>Broad Category</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Wider experience with ICT</td>
</tr>
<tr>
<td></td>
<td>Socio-cultural influences</td>
</tr>
<tr>
<td></td>
<td>Motivation</td>
</tr>
<tr>
<td>Technology</td>
<td>Usefulness</td>
</tr>
<tr>
<td></td>
<td>Ease of Use</td>
</tr>
<tr>
<td>Transaction</td>
<td>Risk</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td></td>
<td>Innovation and newness</td>
</tr>
<tr>
<td></td>
<td>Compatibility with previous approaches</td>
</tr>
</tbody>
</table>

These issues are quickly reviewed in the next sections and then drawn together in Figure 3-1 (below) to set out the conceptual model.
3.1 Individual Factors

The Diffusion of Innovation (DOI) theory and the Unified Theory of Acceptance and Use of Technology (UTAUT) both added the idea that characteristics of the individual are potential influencing factors on the adoption of e-government. These individual factors are commonly seen as gender, age and/or wider experience of ICT (Venkatesh et al., 2003). However, the evidence for any correlation between these factors and the adoption of e-government is often ambiguous. For example, some early studies (Sciadas, 2002) suggest that greater consumer age tends to correlate positively with use of e-government services due to increased relative purchasing power and access to the requisite technology. However, it is now more common to find studies that suggest it is those under 25 who are more likely to adopt e-government services or e-commerce (Al-Otaibi and Al-Zahrani, 2009, Alrawi and Sabry, 2009). Baker et al., (2007) found that older users in Saudi Arabia were less likely to use e-services possibly due to cultural reasons that result in resistance to change.

Gender is another demographic factor that shows differing effects in OECD countries and Saudi Arabia. Although early studies suggested an almost total exclusion of women from e-commerce and e-government services in the KSA (Baker et al., 2007, Sait et al., 2004), later studies suggest a high take up of e-services in order to avoid the religious and socio-cultural pressures that limit their ability to attend physical offices (Al-Otaibi and Al-Zahrani, 2009).

Attitudinal factors and personal beliefs can also play a role in the adoption of e-commerce practices. Consumers who have already used e-government in the past are likely to do so again, possibly due to a higher trust in the system after an initial successful experience (OECD, 2002). Finally, social influences to use e-government are often identified in both DOI and UTAUT. In effect, individuals, at least in part, reflect social norms and influences on their decision-making.

Past experience of either e-commerce or e-government and ICT aptitude have also been suggested as relevant factors (OECD 2007). The suggestion is that either broad ICT competence, or prior practical experience, will have the effect of making an individual more likely to use e-government services in the future.

The role of socio-cultural pressure on the usage of e-government services is complex (Al-Gahtani, Hubona et al. 2007, Dwivedi and Weerakkody 2007, Al-Fakhri,
Cropf et al. 2008). In some instances the suggestion is that pressure, or encouragement, to use e-government services is an important factor leading to use. However, the reverse is less clearly the case, and individuals may well choose to use e-government services despite social or familial pressure to the contrary.

### 3.2 Technological Factors

In this context, the technological factors are ways in which the technology of e-government support or undermine usage. The term captures what in TAM is described as usefulness and ease of use, and in other models as the expected value and the effort needed. These factors have already been discussed at length in Section 2.3 above, but revolve around the extent to which the technology adopted to deliver e-government services is itself a facilitator or barrier to adoption. In Section 2.4 this was extended to suggest a relationship between the individual’s ICT competence and the complexity of the e-government technology. In effect, the less competent users are, the less likely they are to adopt a complex system. This is consistent with Gefen and Straub’s (2000) argument that ease of use is particularly important when considering the initial adoption decision. In this case, the technological factors are effectively separated between those which emphasise ‘ease of use’ (in other words the importance of a relatively low technological barrier to acceptance) and those which emphasise ‘usefulness’ (in other words are primarily concerned that the technology delivers a service they find personally of value).

### 3.3 Transactional Factors

Transactional factors relate to the factors associated with the transaction being done in a new form. Research suggests that the following factors may have a direct impact on the adoption of e-government services; even if a citizen accepts the e-government concept and intends to implement the transaction, these factors could facilitate or hinder his or her adoption (Alrawi and Sabry, 2009, Gefen and Straub, 2000):

1. **Compatibility**, in effect how similar is the new, e-government, transaction to the older form. Greater compatibility should yield higher rates of adoption (Al-adawi et al., 2005, Dwivedi and Weerakkody, 2007, Gefen, 2000, Sait et al., 2004)
ii. **Newness**, which is also sometimes called social compatibility. This factor assesses social motivation to try something that is seen to be new and exciting (Al-Asmari, 2005, Al-Kahtani et al., 2006, Alrawi et al., 2008, Spinelli, 2008);

iii. **Trust**, which is the critical issue. In this case it reflects two related issues: can an individual trust the government to carry out the transaction as agreed (i.e. not lose their personal data or fail to deliver the goods)? and can they trust the government not to abuse the data gathered as part of e-government for further surveillance? (Corbitt et al., 2003, Holmes, 2007, Kim et al., 2005, O’Hara et al., 2009, Bélanger and Carter, 2008, Wheeler, 2009);

iv. **Risk** can be seen as similar to trust but includes an assessment of the damage that would be experienced if the transaction was fraudulent or sensitive information was compromised (Al-Diri et al., 2006, Sait et al., 2004, Yousafzai et al., 2003).

In many ways this list is reminiscent of the factors often discussed within the context of UTAUT models of technology adoption (Hung et al., 2006). Of this group, trust is the major factor in affecting consumer perception of e-government (Warkentin et al., 2002). Broadly, Carter and Belanger (2005) found that the perception of trust significantly encouraged citizens to use e-government services. Recent cross-cultural research (Das et al., 2009) has confirmed this finding across a number of different states.

### 3.4 An Integrated Model

An integrated model of the influences on individual citizens can be derived from this tripartite structure to form the basis of the research design and the empirical analysis reported in Chapter five. The goal in this research is to determine which factor(s) can explain the current state of citizen adoption of e-government services in the KSA.

Figure 3-1 brings together the three groups of factors gathered together under the rubric of personal, technological and transactional. At this stage it is simply suggests that individual decision-makers will identify a dominant criterion from one
of these groups and use that criterion to decide to adopt or reject e-government. A major refinement of this model in Chapter Four is to argue that the personal characteristics of the decision-maker will influence the decision process they use (with these rules drawn from ‘ease of use’, ‘usefulness’ and ‘trust’) to decide whether or not to adopt e-government services. The empirical data suggest both that the same individual may shift decision process in different circumstances, and that they make a different decision using the same decision process in different circumstances.

**Figure 3-1 Conceptual Model of Citizen Adoption**

- **Personal and Situational**
  - Age
  - Gender
  - Previous experience
  - Motivation
  - Socio-cultural
  - Type of vendor
  - ICT Aptitude and Experience

- **Technological**
  - Usefulness
  - Ease of Use

- **Transactional**
  - Compatibility
  - Newness
  - Trust
  - Risk

**Adoption of E-Government services**
3.5 Research Objectives

As such, figure 3-1 also formulates the research direction for the empirical phase. In particular, chapter two has argued that the factors that influence the citizen’s adoption of e-government services in Saudi Arabia; therefore, the following three objectives were broken down of the main research question:

a) Identifying the individual factors that influence the citizen adoption of e-government services in Saudi Arabia,

b) Identifying the technological factors that influence the citizen adoption of e-government services in Saudi Arabia,

c) Identifying the transactional factors that influence the citizen adoption of e-government services in Saudi Arabia,

As discussed above, these three objectives were drawn together to build a conceptual model that relates the characteristics of the individual with a perception of the value of the technology and the dynamics of the particular transaction to affect the decision to adopt, or reject e-government services.

This research aims to contribute the understanding of e-government services in three ways. First, the process of citizen adoption has not often been studied and when it has, the information is limited due to the sampling process used or the model of decision-making applied to interpret the findings. Second, there is an on-going need for such research outside the OECD, and, in particular, to relate the findings to the nature of the state in the particular country.

A final advantage is that the empirical field-work will take place at the end of the Yesser initiative within Saudi Arabia. Thus it will offer an early opportunity to evaluate that process from a citizen adoption perspective. The main Saudi website (Yesser, 2010a) continues to list the projects undertaken within the framework, and to provide information to potential users (Yesser (E-Government) Program, 2010). However, the latest evaluation reports were published in 2008, and thus cover only the earliest implementation phase (Yesser, 2010b). Given the importance of the programme and the ambitious goals, the lack of on-going evaluation is a potential weakness. From this comes one potentially valuable outcome of this research. The
empirical work was carried out when Yesser should have been delivering the ambitious goals.

Section 2.6.2, in particular uses the material produced to date to present a conceptual framework for the implementation and adoption of e-government services (from the perspective of both the state and the citizen) that captures the major themes discussed to this point. The key is to present this model in such a way that it can then be conceptualized, in particular by placing the outcomes in context (Avgerou, 2008). The goal is to use the structure to allow interpretation of the empirical findings and also to use the empirical data to inform the resultant theory (Chen et al., 2009). In effect, the aim is to move from theory to data and back to theory as follows:

“The entire process was highly iterative. The iterative process ended when saturation was reached, with new data further explained the process of e-government implementation” (Chen et al., 2009, p. 204).

In the case of the present research, the data were gathered from a single country (Saudi Arabia) at a particular point in time. Hence, it does not test the state adoption on a multi-country or longitudinal basis (Basu, 2004, Dada, 2006, Jaeger and Thompson, 2003, Kim, 2007, Kostopoulos, 2004, Yildiz, 2007). However, by carefully linking aspects of the Saudi Government to the existing concepts and to the survey results, it is still possible to suggest from the particular case study (Yin, 2009) and the philosophical and practical steps for this are covered in Chapter Three.
4. RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The primary research focus was to apply the model briefly sketched out in Chapter three. This had implications for the research design, leading to the adoption of a qualitative, in-context, research approach, since an experimental research design was not appropriate for this study. Having accepted this basic approach, the main question remaining was how best to gather the data needed. A particular goal was to be able to track the logic of individual choices, both as to the criteria used to decide whether or not to use e-government and the consequences (i.e. the actual choice made).

To date, e-government research has tended to use one of three approaches: a survey, usually based on existing published research, of the success or otherwise of implementation, a questionnaire administered to a number of citizens in the country in question or, less commonly, un-structured interviews of citizens on a particular question. One strength of the first approach is that it allows cross-country comparisons of major trends, and of the second is that it potentially captures the views of a large number of participants as to what factors influence their approach to e-government. The advantage of the interview approach is that it allows a deeper explanation of why the individual has adopted a particular approach. This fits closely with the research goal explored in Section 3.5, where it was suggested that not only might different individuals use different criteria in their decision-making but also that these may vary in different situations.

The logic behind this choice of methodology is set out in the rest of this chapter. This starts with a discussion of the underlying philosophical assumption behind this research design. It then reviews the process of case study design and interpretation before exploring in detail how these concepts have been dealt with in this thesis.
4.2 Philosophy of Research

This section commences with a short discussion of the philosophical process of interpreting the data gathered in the research process and how that interpretation can then be used to support model building. Resolving this underlying question is a critical step in model testing and building (Lipton, 2004, Woodward, 2002). It sets out how to ensure that a particular piece of research has both relevance (it explores something worthwhile) and rigour (it explores it in a way that is robust). As such, the options chosen (both for data collection and data interpretation) are reflected in the research design adopted in this case.

The various philosophies of science can be grouped into one of two broad camps (although within each, there are substantial differences). An empirical, positivist model stresses that the process of interpretation and theory building can only come from controlling for extraneous variables so that any observed variances are related to clearly-defined factors. On the other hand, a phenomenological model stresses that theory building can only come usefully from understanding the wider context, and that science (especially social science) removed from its social setting is flawed (Kincaid, 2002, Sokolowski, 2000, Worrall, 2002).

In general, positivist approaches tend to rely on “a logically unified body of knowledge, ideally as a closed, axiomatic, deductive system in which propositions can be derived from theories describing empirical facts” (B. and L. de Jong, 2006, p. 8). A number of consequences flow from this, including that the observer is neutral and has no impact on the observed behaviour (Banaji and Crowder, 1994) and that any changes in the dependent variables will stem from changes in the independent variables. One reason why an experimental setting is often preferred is that this allows this degree of control and isolation so as to avoid external influences.

However, there are significant differences within the positivist community. For example, the psychologists who developed Behavioural Psychology in the 1940s and 1950s (Mills, 2000) insisted on several key assumptions:

i. That what they observed in terms of action was a direct response to the stimulus provided; and
ii. That there was no such thing as independent cognition, so there is a direct link between revealed actions and implied thinking.

Thus they relied heavily on purely experimental settings, usually using animals, as there was no need to study human behaviour as the cognitive process was claimed to be a philosophical illusion and this led their research design to share much with the biological and natural sciences (Mills, 2000). Other approaches within the empirical tradition instead use the concept of an “approximate truth” (Psillos, 1999, p. 70). From this perspective the argument is that a well-designed experiment comes close to revealing the underlying reality, and repeated studies and refining of the experimental design will either edge science nearer to full understanding or to the refutation of the original theory. In this context, Popper’s view (Bernays, 1998, Worrall, 2002) that the purpose of science is to disprove existing theories makes sense.

A wide variety of theories can be included under the rubric of phenomenology, including both modernist and post-modernist theories of science. All would start from the assumption that “reality is socially constructed rather than objectively determined” (Easterby-Smith et al., 1991, p. 24). However, it is in the context of this statement that a fundamental division in phenomenology exists. On one hand, there are those who argue that both how something is described, and what is being described are equally constructed. This has a long tradition stretching back to Descartes (Sokolowski, 2000) and forms the basis of post-modernist theories. The alternative is to accept that the language and concepts used to describe something are subjective, but the object being described is real (Bem and Looren de Jong, 2006). This subject-object distinction forms the basis of the majority of phenomenological models that can be broadly grouped under the rubric of modernism (Worrall, 2002). In this conceptual structure (Bem and Looren de Jong, 2006), the language and concepts used to explain a phenomenon are culturally influenced but the object under consideration is real and concrete. In this research, the key consequence is that the object (e-government services in the KSA) is real, and could feasibly be described in very precise terms. However, the logic to adoption (or rejection) by the individuals is personal and needs to be understood in the terms that they themselves frame the debate.
Within the broadly phenomenological view a number of specific research traditions exist that reflect particular traditions, such as Marxism, Feminism, and approaches based on sexuality or ethnicity. These tend to operate within the broad format of phenomenology (although they too vary between acceptance of modernist and post-modernist models of science) but to offer their own explanations for the sources of the views used to create reality (class, gender, ethnicity, sexuality), and what needs to be done to allow the researcher to step outside the constraints of dominant thought patterns (Kincaid, 2002).

In a phenomenological model, there is considerable variation in acceptable data gathering techniques (both qualitative and quantitative methods have validity as tools to collect data), but the main difference from empirical research lies in how to move from observations to a more generalised theory. In an empirical study, this follows from the quality of the research design, but in a phenomenological study, the key step is to compare the particular findings with other related work. Thus identifying similarities or differences with other findings is the key to developing theory, not following the direct logic of statistical theory (Bem and Looren de Jong, 2006). However, their process of moving from observation to theoretical generalisation (George and Bennett, 2005) is rigorous in its own terms.

A number of factors place the present research firmly within the philosophy of broad phenomenological research. There is a desire to explore a real-world instance (adoption of e-government in the KSA), drawing on the full complexity and context of that process. There is also an interest in understanding what decision processes the individuals use in a real-world situation. These factors render the experimental control essential to empirical research strategies inappropriate for the present study. The advantages and disadvantages of this are discussed in Section 4.3 and the particular research design adopted is explored in Section 4.4.

4.3 Case Studies as a Research Method

The case study, in a variety of different formats, has been adopted by disciplines across the social sciences. At its best, it allows a rich, insightful analysis of a particular instance from which can be derived valuable ideas. At its worst, it can be simply a detailed description of a particular event (George and Bennett, 2005), and
any conclusions (Geddes, 2003) may be based on erroneous logic. To avoid this, there are three related criteria – that the study is rigorous (in other words, the actual analysis is valid and takes account of all the data and of competing explanations), that the study is replicable (in other words, if it were repeated, similar findings would emerge, unless key elements have changed) and that it can be generalized (in other words, the results can be used to develop a model that has applicability beyond merely explaining the events in the case study).

Empirical researchers would argue that these three criteria are met by constructing an experimental setting which ensures that the dependent and independent variables and the conceptual assumptions are clearly set out, that it is repeatable by another observer and that the findings can be generalized using statistical reasoning. However, for a field such as e-government adoption, controlled experiments are hard to construct. In some cases, the consequence is ignored and the analysis consists of a statistical approach to the collected data and its generalization is then linked to the tests of significance in that data set.

Equally, generalizing from a case study is a complex process (Reuschemeyer, 2003) reliant on building a reasoning chain rather than simply applying known and calibrated statistical tests (Geddes, 2003). The simplest flaw in this respect is to ignore the need for a clearly specified independent variable. A case study is often selected as an example of a particular event (such as a successful or an unsuccessful e-government adoption) but this focus introduces a potential bias unless it is corrected for (Geddes, 2003).

Fortunately, a relatively simple way exists to construct a case study or case studies to control for these potential flaws. The first is the discipline of hypothesis formulation before selecting the case studies (George and Bennett, 2005), and in the present research this has been undertaken in Chapter three. Some social science models such as Grounded Theory (Charmaz, 2003) would dispute this, but for the most part these approaches are post-modernist rather than broadly modernist in their concepts of science and knowledge. In addition, existing literature and theory can be drawn on to avoid the analysis of the case study becoming self-referential (George and Bennett, 2005). Therefore, a single case study can be used for model development (building, testing, refuting), provided that the logic is studied against an external construction (Reuschemeyer, 2003) based in turn on the existing research literature. This externality to the case is the key issue – in part provided by forming a
hypothesis that justifies the selection of the case(s) and in part by using existing
typeo to study the observed findings. The fundamental element is that a good case
study design does not start with the selection of the case study, it starts with the
selection of the research question (hypothesis), and the case study then generates the
data used to study this (George and Bennett, 2005).

The second problem is to ensure that the reported data are robust, reflect the
full range of information and are tested against multiple interpretations. This,
effectively, is a focus on how the research is to be conducted rather than how it is to
be framed (George and Bennett, 2005). This requires a depth of analysis
(Reuschemeyer, 2003) looking at the raw material for patterns, and developing and
questioning assumptions. One important tool to this end is the importance of clearly
coding and categorizing the variables. Therefore, in the example of the potential
relationships between e-government usage and individual characteristics, it is vital to
carefully formulate what is meant by these in the context of the data gathered. This
helps both to clarify what is meant by the key variables and their interactions with the
observed outcomes (Geddes, 2003). This retains the depth and richness of a case
study, as well as the importance of context as a frame for revealed actions (Friedman,
2007).

4.3.1 Rigour in Case Study Design

As already discussed, it is useful to divide all philosophical models of science
into either positivist or phenomenological approaches (Worrall, 2002). However,
despite the significant differences, three core issues, validity, reliability and
generalizability (Easterby-Smith et al., 1991) remain key factors in the conduct of
research as indicated in the following table:

<table>
<thead>
<tr>
<th>Test</th>
<th>Philosophy</th>
<th>Validity</th>
<th>Reliability</th>
<th>Generalizability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the instrument measure what it is supposed to measure?</td>
<td>Positivist</td>
<td>Is the measure consistent – i.e. can variations in what is observed be explained by underlying changes?</td>
<td>What is the probability that the sample observed is representative of the wider population?</td>
<td></td>
</tr>
<tr>
<td>Has the researcher</td>
<td>Phenomenological</td>
<td>Will similar</td>
<td>How likely is it that</td>
<td></td>
</tr>
</tbody>
</table>
Case studies are the classic phenomenological method of data gathering (others include ethnographic research, surveys, archival analysis and historical studies). Ideally, a case study is designed to meet the basic requirements of phenomenology – to gather information in context, and to report it in such a way that the context and the beliefs and attitudes of those involved are clear to any reader. Case Studies have been frequently adopted within the wider field of information systems (Myers and Avison, 2002) and the specific field of e-government adoption. However, in terms of e-government usage, the approach has often been one of using a particular instance (country, type of process) and studying that (Abanumy et al., 2005, Al-Solbi and Al-Harbi, 2008, Hung et al., 2006, Jaeger and Thompson, 2003, Lean et al., 2009, Seifert and Chung, 2005). The concept of a case-study may include a wide variation in approaches (Yin, 2009). Perhaps the unifying aspect is the focus on a particular instance, defined in terms of place, time or process, and a critical part of any analysis is to acknowledge the importance of that place, time or process.

Yin (2009) suggests that a case study can have a variety of focuses including describing a situation, emphasising the key variables, and seeking to explain the apparent links between the variables in a real-life setting. Thus, a case study is not defined by the techniques adopted but the focus – invariably a real world situation. To facilitate this, Yin (2009) stresses the need for multiple sources of evidence so as to allow for triangulation between data sources. It is also frequently recommended to use techniques such as ‘respondent validation’ (Bryman, 1989) to allow the individuals to check the accuracy of any response. This may be less essential if a questionnaire has been used, but reliance purely on a questionnaire may weaken the overall case design (Yin, 2009). The second essential precondition for a successful case study is to use existing literature to guide both the data collection and analysis. There are techniques such as Grounded Theory (Charmaz, 2003) that seek to deal with situations where there is a lack of valid existing theory, but that is not the case with e-government adoption.
A phenomenological case study can make use of the concept of an embedded (Scholz and Tietje, 2002, Shah and Corley, 2006) approach. Here an experiment or a questionnaire can be placed within an overall qualitative research design. The findings add to both the validity (has all the available information been gathered?) and reliability (if the experiment is repeated will similar results be found?) of the study. Robustness can also be added to data interpretation by supplementing a textual analysis of the content of the questionnaires with more formal techniques such as Comparative Analysis (Griffin and Ragin, 1994, Rohwer, 2010). The approach is to assign a verbal scale (yes/no, strong/intermediate/weak) to the variables and then compare these patterns to the outcome (Romme, 1995) to generate a conceptual link between the three input variables (individual factors, technological factors and transactional factors) and the decision to adopt or reject e-government services. However, interpretation and model-building must then follow the conventions of phenomenological research (Yin, 2009).

In summary, a case study can be a purely qualitative enquiry based on observations, interviews etc., or it can have a quantitative element, or it can be based on a quasi-experimental approach. The unifying issue is that a case study reflects a particular real-world situation (Yin, 2009), and a particular goal for the researcher is to ensure that that insight is fully captured.

4.3.2 Tests of Validity

Phenomenological research places stress on rigour and relevance as underpinnings to research and model-building. However, the nature of the data collected (rarely in a formal survey, never in an experimental controlled setting) leads to particular requirements in terms of interpretation. The usual approach is to rely on inferential logic (Lipton, 2004) and this relates back to the subject-object relationship discussed earlier (Bem and Looren de Jong, 2006). If that concept is correct, then the key (in the modernist as opposed to post-modernist traditions) is that what has been observed is real, and feasibly could be described in an unbiased way if we had full understanding. However, when we draw inferences from the data, we must be aware of our own potential biases and how these might affect the conclusions.
There are several techniques that can help to achieve this. First, in relation to data gathering, it is essential that as much as possible of the original context is preserved. This can be assisted by:

a) The use of multiple sources of information, allowing for triangulation between the data; and,

b) Techniques such as respondent validation, taking care to reflect back to the participants both the raw data and the proposed interpretation.

However, a phenomenological approach can never ignore the problem that the interpretation process is done by individuals, with their own views, language and constructs. Phenomenological researchers will acknowledge this, and set out their reasoning chain (Yin, 2009), so that both the findings, and the logic process can be challenged. Yin (2009) suggests that pattern matching is of considerable value in creating the means to interpret data. At its simplest, pattern matching consists of using the existing literature to conceive as to the likely linkages between dependent and independent data. In terms of e-government acceptance, it could be suggested that:

i. lower levels of trust will lead to lower levels of acceptance; unless,

ii. there is also a low level of choice, in which instance, there will be acceptance without agreement.

These suggestions can be compared to the observed findings in terms of three variables – trust, choice and acceptance. However, once a relationship has been conceptualized, the need is to then revisit the contextual data to ensure that nothing else has changed. Thus model-building becomes a constant iteration between data, proposed interpretation and further studies. This extends pattern matching to ‘explanation building’ (Yin, 2009) and requires the researcher to query their own assumptions frequently and consider whether or not the proposed model really is the best fit to the underlying data.
4.4 Study Protocol

4.4.1 Existing approaches to Research in E-Government

E-government research to date can be divided into surveys, often comparing performance between countries (Avgerou, 2008, Dada, 2006, Das et al., 2009, Kim, 2007, Titah and Barki, 2006, Yildiz, 2007) or case studies into the adoption of e-government in a particular country (Abanumy et al., 2005, Al-Fakhri et al., 2008, Chen et al., 2009, Lean et al., 2009, Wangpipatwong et al., 2008). Most of these studies are some form of quasi-experiment in terms of their design and data interpretation.

Some researchers (Cohen and Eimicke, 2001) have argued that early research into e-government was methodologically weak with limited attention being paid to gathering primary data, triangulation of findings, and linking the process of theory gathering to the philosophy of science adopted (and, quite often not even discussing such issues). Examples of these are the studies by Lean et al. (2009) and Wangpipatwong et al. (2008) with their non-random samples. There is nothing wrong with such a case study design if the process of generalising from the statistical evidence is drawn from phenomenology; however, both Lean et al and Wangpipatwong et al draw their conclusions direct from the statistical tests in use as if the study was a quasi-experiment with the methodological demands that implies. These concerns have led to an increased interest in both the research methods applied to studies of e-government adoption and an awareness of the value of multi-disciplinary research in this field (Hardy and Williams, 2011). The process of research methodology adopted in this thesis is shown in Figure 4-1 overleaf.
Figure 4-1 The Process of Research Methodology

Phase I
- Conducting Semi-Structured Interviews with Respondent Group No1 in Australia (in Arabic)
- Data Interpretation
- Data Analysis

Phase II
- Pre-testing of Data Collection Instrument / Pilot Study
- Conducting Semi-Structured Interviews with Groups 2, 3 in Saudi Arabia (in Arabic)
- Transcribing then Translation of Recorded Interviews, Data Cleaning
- Ethics Application & Approval

Phase III
- Identifying Role of Individual Factors
- Identifying Role of Transactional Factors
- Identifying Role of Technological Factors

Write up of Summary and Conclusion

Informed Model of E-Government Services Adoption in KSA
4.4.2 Data Collection

Saudi Arabia was chosen for this case study for a variety of reasons. It is a relatively rich, relatively well-educated country with a state often described as focussed on administrative convenience and rather bureaucratic. Of importance, at the time of commencing this research, the country was in the process of implementing a major e-government programme. The respondents were selected to represent the type of individuals that other studies have indicated are the most likely to use e-government services. They are educated, most have English as a second language and many have lived, worked or studied outside the KSA. The criteria used for selection of the respondents should lead to higher rates of e-government adoption among that group than would be the norm across Saudi society. This sample is not typical of Saudi society but is typical of the group found in other non-OECD studies to be early adopters of e-government services. Thus adoption in this group is a useful indicator of the likely depth of engagement with e-government in the wider Saudi population.

The data collection process in this case is heavily driven by Yin’s (2009) argument that a case study is particularly useful when the wider context has a bearing on the actual observations. This method is most suitable when the objective is concerned with recovering and understanding situated meaning as well as behavioural divergence (Creswell, 2008, Gephart, 2004). Creswell (2008) argues that qualitative research often provides insights regarding real-world circumstances that cannot be acquired from purely theoretical or quantitative inquiry (Bryman and Burgess, 1994). This qualitative method will be used to investigate reasons for Saudis’ heavy engagement with e-government under some conditions and their denial of the concept in other situations as indicated in some of the literature reviewed in section 2.5.2. The result is a need to gather information in context (Yin, 2009) so as to be able to understand and explain these differences.

Data was collected via semi-structured, face-to-face, in-depth, open-ended interviews. A semi-structured interview protocol was adopted to ensure some comparability between the individuals and to ensure that all the issues identified in Chapter three were covered. The link between the interview structure, specific questions and the themes in the literature review are set out in Figure 4-2 below. The interview design followed the factors set out in Figure 3.1, where the main factors are
divided into personal and situational, technological and transactional. The goal was then to come to a judgement as to how these affected e-government adoption. The first phase interviews helped to study the options and determine the structure of the second phase.

This sets out the linkage from the individual question to the three key issues (individual, technology, transaction) to explore how these interact such that a decision to use or not use e-government can be understood. The information gathered was a mixture of factual (age, gender), attitudinal (perceptions of value, usefulness, trust etc in e-government) and process (what factors did they take account of in their decision-making?). In turn three categories of respondents were interviewed. The first category was Saudi citizens living permanently in Saudi Arabia who have never lived abroad, and the second category was Saudi citizens living temporarily in a developed country. The third category was Saudi citizens who had returned to Saudi Arabia after living in a developed country. Gender balance was maintained as far as possible across each of the three categories. Participants were reached overseas through Saudi social clubs and societies in which Saudis living abroad attend cultural events and activities. Interviews with local Saudis were coordinated through private contacts and with the assistance of relevant social and research organisations. The first phase was primarily designed to trial the structure of the interview, whether certain questions elicited the required information, the length of time a typical interview took and whether it was necessarily to add additional questions to obtain further data. The trial used three participants from the sample and each interview commenced with qualifying questions to determine compatibility with the research criteria. Information was gathered on:

- a) Participant demographics, including questions on socioeconomic status and family circumstances
- b) Internet use, including use both inside and outside Saudi Arabia
- c) Their views as to the value of technology and when they might wish to adopt an internet-based solution
- d) Questions related to frequency and nature of e-government activities (including frequency of search vs. frequency of transaction)
- e) Motivations for e-government engagement and a detailed exploration of their decision-making process.
f) If they have not adopted e-government, an exploration as to why, and what factors might encourage them to do so

A full list of the interviewees (anonymised) and their key characteristics is set out in chapter five as part of the introduction to the empirical analysis of the results.

The purpose of the trial was to review relevant issues such as timing, comprehension of the questions, and appropriateness of the study’s questions for investigating key concepts. After completing the first stage of the interviews, the results were reviewed to ensure that the structure of the interview was appropriate, especially to reflect on whether or not all the information needed was being gathered. At the end of the trial, a revised interview schedule was developed (Figure 3-2 below) and related to the research question and literature review to ensure that the appropriate material was being collected.
<table>
<thead>
<tr>
<th>Interview Protocol Structure</th>
<th>Theme from Literature</th>
<th>Specific Questions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demographic Information</td>
<td>Individual Characteristics</td>
<td>Gender, Age, Children, Income and type of work Has he/she been living within the last 5 years in or out (totally or partly) of Saudi? If outside was this due to working for a multinational company or due to a personal job search?</td>
<td>This covers issues such as gender, age, previous ICT experience etc, Pressure to innovate, social norms etc</td>
</tr>
<tr>
<td>2. ICT usage</td>
<td>Individual Characteristics Social Characteristics</td>
<td>Level of usage of the internet and ICT for both e-government and e-commerce Language use – both for e-government and other activities. Always Arabic? Sometimes Arabic? Never Arabic? If sometimes – explore differences. Work, e-commerce, social networking etc? Why did interviewee adopt this particular usage? – explore the decision at each stage. If live(d) outside Saudi Arabia, did they start internet use then, before leaving or after return? Explore gender issue? Does internet make certain transactions easier? Internet use by others members of family, relations, friends. How important was this in own adoption? Broadband or dial-up, or both at different places. Self-rated level of ICT skills</td>
<td>To understand type of ICT use and what the main triggers</td>
</tr>
<tr>
<td>3-Effects of Technology</td>
<td>Situation</td>
<td>Explore when they would look for a technological as opposed to traditional solution In particular, what triggers to initial use – ease of use, quality of website etc</td>
<td>To explore why they might adopt a technology-based solution</td>
</tr>
<tr>
<td>Interview Structure</td>
<td>Theme from Literature Review</td>
<td>Specific Questions</td>
<td>Notes</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
<tr>
<td>4- Participation in e-government</td>
<td>Individual Characteristics Situation</td>
<td>Explore perception of the structure of e-government, including their answers to the following:  Whether the state can be described as authoritarian or democratic?  Whether the public administration culture is bureaucratic or orientated to service delivery?  Whether the motive behind the move to e-government is to serve the interests of the state or to deliver improved services to the citizens?  Whether e-government is seen as information provision, simple service delivery or a fully developed approach?</td>
<td>Perceptions of nature of e-government, but more importantly to understand their perception of e-government in the particular context.</td>
</tr>
<tr>
<td>5-Effect of the transaction being online</td>
<td>Specific circumstances Nature of the decision process on use</td>
<td>Why adopt? Why continue?  Importance derived from trust, risk, type of e-government  Try to see which of: newness, trust, compatibility, perceived usefulness/ease of use, Personal commitment to innovation, influence of external influences of family, social norms, media exposure etc, or did they feel constrained in their choice (lack of choice or a feeling ‘they had to do it this way’)</td>
<td>Issues such as this particular instance of e-government, of trust, difference between adoption and continuation  Answering the questions:  Shall I use e-government at all? What factors must exist to convince me to do so?  Shall I use this particular e-government service? Why might I use one service but not another?</td>
</tr>
<tr>
<td>6-Reasons if not using e-government</td>
<td>Individual social situation</td>
<td>Revisit most of the issues above but explore with the interviewee why they have not used e-government</td>
<td></td>
</tr>
</tbody>
</table>
4.4.4 Data Analysis

Yin (2009) places particular emphasis on the complexities of both analysing data within a case and the challenge of generalising from the case study data. To overcome the process of data analysis, a variety of interpretative tools were adopted in analysing the transcripts. The first, and primary, approach was simply to analyse the content of the individual transcripts. Thus direct quotes could be extracted that allowed a full reflection of the range of views expressed on the different issues (Chi, 1997).

To assist model building and indeed simple data interpretation, the interviewees were grouped by a shifting set of criteria (this is discussed in more detail in Chapter Five), to allow comparisons of the opinions and reasons between, for example, female respondents who had never lived outside the KSA with female respondents who currently lived outside the KSA (Creswell, 2008). This allowed a picture to be developed of where the interviewees held differing opinions and if these could be related to individual, technological or transactional factors.

This analytic approach was supplemented by using concepts drawn from Qualitative Comparative Analysis (Griffin and Ragin, 1994, Rohwer, 2010) were used. The approach is to assign a verbal scale (yes/no, strong/intermediate/weak) to the variables and then compare these patterns to the outcome (Romme, 1995) in order to suggest the links between the three input variables (individual factors, technological factors and transactional factors) and the decision to adopt or reject e-government services. A key building block was to create a structure to code the data for analysis (Goertz, 2006) to find potential connections between those variables (Ragin, 2000). This begins to create a means by which the contextual element that is core to a case study can be retained and, at the same time, the findings can be generalized (Ragin, 2000). Within this method, prior theory can be used to inform both the initial coding structure and what connections to look for (Ragin, 2000). The idea is to use the classification schemata to simplify the raw data and to bring closely related factors together on the basis that they are “homogeneous enough to equate their similarities” (Ragin, 2000, p. 87).

Having completed what can be seen as an internal analysis of the interviews, the final state was to move to model building (Yin, 2009). This was done by
comparison with the literature review in Chapter Two and application of particular models of e-government adoption and consideration of whether prior use of e-commerce was an important enabling variable.

4.4.4 Generalizing from the case study

For any research study, a major challenge is in how to move from collecting data to model building. Again, there are significant differences between the research traditions in terms of how to move from observed data to constructing, or refuting, a theory or at least a model. In a qualitative design, there are two key building blocks to generalizing. The first is the clarity of analysis applied to the data collected and the method by which meaning is constructed and extracted. The second is the importance of using existing literature to conceptualize the critical factors and the relationships between these factors that will be studied before the case is selected and data gathered. In the present case, this element is discussed in Section 2.6 above. The previous literature creates the means to study the actual findings for instances where they appear to confirm or contradict previous studies. In the case of the latter, there is then a need to consider whether the difference is due to very specific issues at play in the instance being studied or if the findings have a wider application. This is a particular problem when, as in this case, the sample of respondents is small (Mahoney, 2000).

The wider literature on public administration and political policy making often uses one of two solutions to this problem. At one end, some researchers, exemplified by King and his colleagues (King et al., 2002) suggest that if the analysis within the case is conducted using quantitative tools (and preferable regression analysis), then the resulting findings are robust enough to be generalized. This approach can be seen in the papers by Lean et al and Wangpipatwong et al discussed earlier. Other researchers (George and Bennett, 2005, Gerring, 2007) place a lot of emphasis on case study selection. In particular that if the key attributes of the case are selected so that any outcome can be related to the dependent variables specified, again this is held to facilitate the process of model building even when the data is gathered as part of a qualitative case study design.

In this case, Yin’s (Yin, 2009) Pattern Matching was adopted to allow generalisation. The key element to this is to use the existing wider literature to
specify the type of interaction between the variables that is expected. Where the case study data confirms this initial conceptual model (Figure 2-9 in this instance) then the general literature provides re-assurance as to the specific findings. In an instance where the specific findings contradict the prior expectations, the need is to reconsider the validity of the initial assumption and the accuracy of the findings. If a divergence still exists, then the solution is to offer an explanation of how the specific circumstances in this particular case may have resulted in such an outcome (this is in effect the method used in the final sections of chapter 4).

4.5 Ethical Considerations

Research ethics are an important consideration in any research setting and can affect both the researcher and the conduct of the research. In a qualitative case study context there are issues of data collection that have been discussed above (Yin, 2009). There is also a related problem of needing to protect respondents. For example, in an organisational setting there are the twin dangers of a researcher being seen as a management ‘spy’ (Bryman, 1989, Easterby-Smith et al., 1991), or being told information in the hope the researcher will pass it on in the hope of circumventing problems with internal communication systems.

In the context of e-government research in Saudi Arabia there are a number of ethical problems that needed to be addressed (Benatar, 2002). There are the usual issues of informed consent, in other words that participants and respondents are aware they are contributing to a research study. Beyond this, there is a need to balance a desire to acquire information and being aware that this may cause problems for some respondents. For example, the issue of ‘agreement’ and/or ‘acceptance’ is an important element in the model proposed in this study. The research review indicates that those groups who feel alienated (on grounds of ethnicity, class, religion or gender) from the state may be less trusting of the state (Avgerou, 2008). This is potentially valuable information, but in the context of Saudi Arabia it may either need to be gathered tangentially using a proxy measure or omitted altogether. There are also practical problems that the gender of the researcher may limit the gender division in terms of who can be interviewed.

However, existing research in Saudi Arabia has had no problem in eliciting critical comments (Al-Fakhri et al., 2008, Al-Solbi and Al-Harbi, 2008) not only from
Saudi citizens but from state employees about the Yesser implementation process. Saudi Arabia is not a totalitarian regime, and with due care in research design, it is possible to elicit a range of opinions.

A second issue of relevance to this study is the issue of culture, and how to incorporate it into the research design. The difficulties are both practical, for example accuracy in any subsequent translation, and attitudinal (Douglas and Samuel Craig, 1997). The key issue is to use culture as a short-hand to describe observed data, not as a means to categorise an ethnic group or type of society (Loch et al., 2003). The culture of the Saudi bureaucracy has been described as administratively focussed, with low tolerance for uncertainty, limited tolerance for risk taking and a very hierarchical structure (Al-Fakhri et al., 2008). All these factors could influence both the type of e-government services introduced by the Saudi regime and how successfully it is adopted. What matters is that this is discussed, for example, as how a culture of uncertainty avoidance (Lean et al., 2009) might in turn influence e-government adoption, but not as if this was a particular inherent trait of Arab states in the Gulf region.

It is important to note that the researcher is himself of Saudi Arabian descent and thus is keenly aware of Saudi cultural values and cultural sensitivities. The researcher also speaks the Arabic language fluently. These were important factors in the conduct of this study and were advantages in terms of being able to collect data from Saudis in their home country and overseas.

4.6 Conclusions

This chapter has reviewed the practical and theoretical issues connected with using a case study as the means to collect and interpret data. The proposed research design for this study has also been discussed. The use of a number of in-depth interviews as the main data gathering tool meant this research was conducted using the constraints and assumptions of qualitative research. The practical implications of this are as follows:

a) That the data were gathered in context, fully reflecting the views of the participants and including relevant contextual material;

b) That the interviews were conducted in such a way (i.e. sufficiently structured) so that a follow-up study could repeat the basic process;
c) That the data gathered from the interviews were interpreted using the concept of ‘pattern matching’ leading in turn to ‘explanation building’ (Yin, 2009).

The interviews were structured to ensure that common information was gathered in each case. This allowed both an analysis of the importance of the individual, technological and transactional factors, as well as comparisons between them. The interviews were tape-recorded, transcribed verbatim and subsequently translated from Arabic to English. The interviews were intended to study the basic conceptual structure of the interactions between personal and situational factors (i.e. attributes of the individual or the particular instance), the technological issues (usefulness and complexity of the transaction) and aspects of the particular transaction (such as compatibility, newness, trust and risk) in influencing the decision to accept or reject e-government services.

Some controls were introduced into the research design that affected the sample distribution. The original goal was to achieve a relatively even gender balance and to include Saudi citizens who had never lived outside the KSA, who currently lived in the KSA but had previously lived in an OECD country, and those currently living in an OECD country. This diversity was useful for two reasons: (1) it allowed consideration of whether Saudi citizens held consistent views (for or against e-government) regardless of where they encountered it; (2) it was another useful situational control to see if their responses (or the reasons for their responses) varied according to their geographical location and experience.
CHAPTER 5

5. RESULTS

5.1 Introduction

This chapter presents the results of the interviews and analyses the implications. The first stage sets out some background information and then reviews the impact of the personal, technological and transactional factors (see Figure 2.7, above) on e-government adoption in the KSA. These are then compared to explore if any factor is dominant for a given individual, and if so, does the dominant factor vary according to the situation or the characteristics of the individual? This chapter is divided into six major sub-sections as follows:

i. Background and Supporting Material. This section explores the demographic nature of the sample and sets out some important contextual information on the nature of e-government and e-commerce in the KSA;

ii. Personal Factors. This section explores each of the factors that have been found in other studies to influence acceptance of e-government that can be seen as characteristics of the individual decision-maker. These include: age; gender; whether they have experience of living outside the KSA; language ability; previous experience (in this case defined as having used e-commerce and their reported ICT aptitude); type of vendor (whether e-government is delivered by the state or by a private provider); and, the extent they report socio-cultural pressures as influencing their decision;

iii. Technological Factors. This section explores the influence of Usefulness and Ease of Use in their decision;

iv. Transactional Factors. This section examines the issues that are specific to a transaction, such as trust, risk and compatibility, in influencing their decision;
v. Combining these Factors. This section takes the material already
discussed and develops an integrated model that combines the findings
and suggests a model (i.e. that has explanatory power within the
sample);

vi. Model Building. This section takes the in-sample conceptual model
and uses pattern matching (see Section 5.3.2.3) to proceed to develop a
model that has value beyond the immediate sample.

Steps 2-4 can be seen as iteratively deepening the exploration of the interview
transcripts. Step 2 mainly focuses on the personal factors in relative isolation and
their relationship to the decision to adopt or reject e-government. Step 3 examines
both usefulness and ease of use in their own right and in relation to the individual
factors. This process is repeated at Step 4 with the addition of the technological
factors. Step 5 then seeks to draw all these sub-sections together to discuss if the data
suggest there are relationships between the variables and the outcomes, as well as how
these factors might influence overall usage of e-government services within the
sample.

In moving through these stages, four different research tools are used. These
include analysis of the content of the interviews (after translation from Arabic to
English) and a degree of cross-tabulation. The goal with the cross-tabulation is both
to identify any early patterns (i.e. is gender related to language expertise?) that may
help to explain emerging trends, and to identify groups that need closer scrutiny. An
example of this is the small sub-group identified in Section 5.4 who make use of e-
government services outside the KSA but not within the KSA. Having been identified
by cross-tabulation, their responses were closely analysed to provide an explanation.

Section 5.6 (combining the factors) makes use of the technique of Qualitative
Comparative Analysis (see Section 4.4.4 above). The goal at this stage is to
categorise the responses according to the expected input characteristics (personal,
technological, transactional) and, in turn, compare these categories to the actual
decision to adopt or reject e-government. This approach is discussed in more detail in
Section 5.6, as are the criteria used to allocate individuals to categories, but the goal
is, within the sample, to build an explanatory model. With this model to hand, the
final stage is then to consider if this model can be generalised to a wider population
within the KSA, within the GCC or to non-OECD countries in general. Key to this
step is Pattern Matching and comparing the implications of the model developed in Chapter 3).

Two methods are used to link the discussion and quotes to individuals. Where a number of respondents raised the same issue or share characteristics, the coding structure shows this by referring to the individuals as U1, U3, U6 etc. In other words, these three interviewees raised that issue. The anonymous listing of interviewees is in Table 5-1 below. Any direct quotes from the interviews are attributed by using the coding (e.g. U26) to indicate the interviewee being quoted.

5.2 Background and Supporting Material

5.2.1 Sample Demographics

5.2.1.1 Individual Data

Thirty citizens of the KSA were interviewed and Table 5-1 below identifies the various users according to characteristics that capture the potential key variables of:

a) Gender;
b) Age (using age bands of 18-25; 26-35; 36-45; and over 46);
c) Education – a free form field that captures the highest qualification level;
d) Language – this column shows those who could speak English as well as Arabic;
e) Occupation – again a free form field;
f) Saudi Status – those who have never lived outside KSA (‘always’), those who have lived outside the KSA but now live there (‘now’) and those who currently live outside the KSA (‘currently outside’);
g) ICT expertise – their self-assessed level of competence;
h) Usage of internet – a simple ‘yes’ or ‘no’ measure. If they made use of the internet then they were asked if they used it for:
   i. Information search;
   ii. e-Commerce; and/or,
   iii. Social networking.
<table>
<thead>
<tr>
<th>User ID</th>
<th>Gender</th>
<th>Age</th>
<th>Education</th>
<th>Language other than Arabic</th>
<th>Occupation</th>
<th>Have they lived in KSA?</th>
<th>ICT expertise</th>
<th>Usage of Internet?</th>
<th>For: Information Search</th>
<th>For: E-Commerce</th>
<th>For: Social Networking</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>M</td>
<td>46+</td>
<td>Secondary</td>
<td>Director</td>
<td>always</td>
<td>No</td>
<td>N</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>U2</td>
<td>M</td>
<td>36-45</td>
<td>Masters</td>
<td>English</td>
<td>ICT</td>
<td>now</td>
<td>Yes</td>
<td>y</td>
<td>n</td>
<td>y</td>
<td>n</td>
</tr>
<tr>
<td>U3</td>
<td>F</td>
<td>36-45</td>
<td>Degree</td>
<td>English</td>
<td>ICT</td>
<td>always</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U4</td>
<td>F</td>
<td>36-45</td>
<td>Degree</td>
<td>Medical</td>
<td>always</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U5</td>
<td>M</td>
<td>18-25</td>
<td>Degree</td>
<td>Medical</td>
<td>always</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U6</td>
<td>M</td>
<td>18-25</td>
<td>Degree</td>
<td>Medical</td>
<td>ICT</td>
<td>always</td>
<td>Yes</td>
<td>Y</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>U7</td>
<td>M</td>
<td>18-25</td>
<td>Degree</td>
<td>English</td>
<td>Medical</td>
<td>always</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>U8</td>
<td>F</td>
<td>26-35</td>
<td>Doctorate</td>
<td>English</td>
<td>Medical</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U9</td>
<td>F</td>
<td>18-25</td>
<td>Student _ ICT</td>
<td>English</td>
<td>Medical</td>
<td>always</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U10</td>
<td>F</td>
<td>26-35</td>
<td>Masters</td>
<td>Medical</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U11</td>
<td>M</td>
<td>46+</td>
<td>Masters</td>
<td>English</td>
<td>Director</td>
<td>always</td>
<td>yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>n</td>
</tr>
<tr>
<td>U12</td>
<td>M</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>Technician</td>
<td>now</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>U13</td>
<td>M</td>
<td>18-25</td>
<td>Secondary</td>
<td>English</td>
<td>Marketing</td>
<td>now</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U14</td>
<td>M</td>
<td>46+</td>
<td>Degree</td>
<td>English</td>
<td>Civil Engineer</td>
<td>always</td>
<td>Yes</td>
<td>Y</td>
<td>n</td>
<td>y</td>
<td>n</td>
</tr>
<tr>
<td>U15</td>
<td>M</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>Electronics</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>User ID</td>
<td>Gender</td>
<td>Age</td>
<td>Education</td>
<td>Language other than Arabic</td>
<td>Occupation</td>
<td>Have they always lived in KSA?</td>
<td>ICT expertise</td>
<td>Usage of Internet?</td>
<td>For: Information Search</td>
<td>For: E-Commerce</td>
<td>For: Social Networking</td>
</tr>
<tr>
<td>---------</td>
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<td>----------------------------</td>
<td>---------------------</td>
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<td>---------------</td>
<td>-------------------</td>
<td>------------------------</td>
<td>----------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>U16</td>
<td>M</td>
<td>46+</td>
<td>Degree</td>
<td>English</td>
<td>always</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>U17</td>
<td>M</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>Electronics</td>
<td>now</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U18</td>
<td>F</td>
<td>36-45</td>
<td>Degree</td>
<td>English</td>
<td>Design</td>
<td>now</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>U19</td>
<td>M</td>
<td>26-35</td>
<td>Degree</td>
<td>English</td>
<td>Technician</td>
<td>now</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>n</td>
</tr>
<tr>
<td>U20</td>
<td>F</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>Director</td>
<td>now</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>U21</td>
<td>M</td>
<td>36-45</td>
<td>Masters</td>
<td>English</td>
<td>Technician</td>
<td>now</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>U22</td>
<td>M</td>
<td>26-35</td>
<td>Degree</td>
<td>English</td>
<td>Lawyer</td>
<td>always</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>n</td>
</tr>
<tr>
<td>U23</td>
<td>F</td>
<td>18-25</td>
<td>Degree</td>
<td>English</td>
<td>Medical</td>
<td>always</td>
<td>Limited</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>U24</td>
<td>M</td>
<td>26-35</td>
<td>Degree</td>
<td>English</td>
<td>student</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>y</td>
</tr>
<tr>
<td>U25</td>
<td>M</td>
<td>46+</td>
<td>Degree</td>
<td>English</td>
<td>Architect</td>
<td>always</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>U26</td>
<td>M</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>student</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U27</td>
<td>M</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>Research Student</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U28</td>
<td>M</td>
<td>36-45</td>
<td>Masters</td>
<td>English</td>
<td>Manager</td>
<td>now</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U29</td>
<td>M</td>
<td>26-35</td>
<td>Masters</td>
<td>English</td>
<td>Research Student</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
<tr>
<td>U30</td>
<td>M</td>
<td>26-35</td>
<td>Degree</td>
<td>English</td>
<td>student</td>
<td>currently outside</td>
<td>Yes</td>
<td>Y</td>
<td>y</td>
<td>y</td>
<td>y</td>
</tr>
</tbody>
</table>
Additional categories for personal, technological and transactional criteria were created as the questionnaires were analysed. These are discussed as they are introduced in Sections 5.3 to 5.5. In addition, Section 5.6 sets out the individual responses organised in order to support the process of model building.

5.2.1.2 Summary Demographic data

Overall, 30% (9) of the interviewees were female, 43% (13) had always lived in the KSA, 30% currently lived outside the country and the balance (27%) currently lived in the KSA but had previously lived in an OECD country. When combined with the high level of education (93% have at least a bachelors degree) and the prevalence of individuals with English as a second language (93%), it is clear this sample is a-typical of most of the Saudi population. This has implications in terms of drawing wider theoretical lessons from this sample, but has the benefit of concentrating on a group who, as discussed in section 2.5.1 are the most likely to have actively decided to use e-government services.

The age-spread is provided in Table 5-2 below:

Table 5-2 Age Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>17.24%</td>
</tr>
<tr>
<td>26-35</td>
<td>44.83%</td>
</tr>
<tr>
<td>36-45</td>
<td>20.69%</td>
</tr>
<tr>
<td>46+</td>
<td>17.24%</td>
</tr>
</tbody>
</table>

Over 60% of the sample is under 35, but broadly the sample has a reasonable age spread. When age and gender are combined the results are as follows:

Table 5-3 Age and Gender

<table>
<thead>
<tr>
<th>Age</th>
<th>Female</th>
<th>Male</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>33.33%</td>
<td>10.00%</td>
<td>17.24%</td>
</tr>
<tr>
<td>26-35</td>
<td>33.33%</td>
<td>50.00%</td>
<td>44.83%</td>
</tr>
<tr>
<td>36-45</td>
<td>33.33%</td>
<td>15.00%</td>
<td>20.69%</td>
</tr>
<tr>
<td>46+</td>
<td>0.00%</td>
<td>25.00%</td>
<td>17.24%</td>
</tr>
</tbody>
</table>

As this table shows, overall, the female members of the sample are evenly distributed across the 18-45 age range and the male part of the sample is biased to the younger (under
35) part of the sample. When gender and age are compared to their geographic location or experience, the results are as follows:

**Table 5-4 Age, Gender and Location**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age Range</th>
<th>Always in KSA</th>
<th>Now in KSA</th>
<th>Currently outside the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>18-25</td>
<td>66.7%</td>
<td>33.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>26-35</td>
<td>0.0%</td>
<td>33.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td></td>
<td>36-45</td>
<td>66.7%</td>
<td>33.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Female</td>
<td>Total</td>
<td>44.4%</td>
<td>33.3%</td>
<td>22.2%</td>
</tr>
<tr>
<td>Male</td>
<td>18-25</td>
<td>100.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>26-35</td>
<td>10.0%</td>
<td>30.0%</td>
<td>60.0%</td>
</tr>
<tr>
<td></td>
<td>36-45</td>
<td>0.0%</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>46+</td>
<td>100.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Male</td>
<td>Total</td>
<td>40.0%</td>
<td>30.0%</td>
<td>30.0%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>41.4%</td>
<td>31.0%</td>
<td>27.6%</td>
</tr>
</tbody>
</table>

As the above table indicates, both genders have a roughly even spread in terms of location with overall 41% of the sample having always lived in the KSA and 28% currently living outside. In terms of age, the location data are slightly skewed. The 26-35 group have mostly completed the first stage of their tertiary education and many were studying for a masters (or higher) degree outside the KSA. In contrast, the 36-45 age group are the ones most likely to have previously lived outside the KSA and now to have returned to Saudi Arabia.

5.2.2 **Overview of E-government and E-commerce dynamics in the KSA**

The study has identified some broad issues around the adoption of e-government services and e-commerce that are heavily influenced by aspects of social and economic life within the KSA. Since these affect much of the detailed analysis, it is useful to draw them together at this stage. In general this material confirms the findings already reported in Section 2.6 that infrastructure for the full use of e-commerce and the successful introduction of e-government services are currently lacking in the KSA (Al-Fakhri *et al.*, 2008, Reddick, 2005, Sait *et al.*, 2004).
5.2.2.1 Scope of E-government in the KSA

Five types of e-government service within the KSA were identified by the interviewees, including:

i. Within the University sector, for student administration (for course registration, access to examination marks and so on);
ii. Payment of fines, in particular for the payment of fines for traffic offences;
iii. Visas and passport applications;
iv. Access to payments and benefits;
v. Searching for information (about government rules and regulations or what transactions can be carried out on-line).

Using the typology in Chapter 2 and Figure 2-2, most of the provision is still at the level of information provision rather than integrated e-government services. The relative lack of e-government services may influence many of the responses discussed later in this chapter.

The majority of the respondents support the basic idea of e-government, even if they currently make no use of it. Overall, only 2 respondents (U7, U16), out of 30, could be said to be negative about e-government, although both actually make some use of it. In some instances, other respondents indicated that their support for e-government was framed as wanting to deal with an impersonal as opposed to an idiosyncratic administration (U5, U24, U26). More fundamentally much of the support for e-government services in the KSA can be seen as essentially negative and as a way to avoid the problems in dealing with the KSA bureaucracy. Two examples of these comments are:

“Another indirect reason is the arrogance of officers who don’t behave in a respectful manner and always complicate things” (U9);
“So if there is a way to obtain the service without facing those people, it will be a real benefit” (U11).

Some respondents looked to e-government services to remove the level of discretion that they felt was exercised by Government employees:
“It will limit it [i.e. corruption], but it may still persist, only in case they process everything automatically, and employees just enter data. At that stage, I will be relieved; all transactions will be treated equally” (U21).

These two themes of avoidance of engagement with officials and reduction in corruption were summed up by one respondent who currently made no use of e-government services, as:

“I don’t think that convincing people of my generation will be a hard task, also there should be institutes and places where people can get courses how to use it. But I don’t think it will be difficult to make them adopt it, as E-government services can be very efficient in fighting bureaucracy and corruption.” (U1)

This theme is discussed in more detail below, especially in Section 4.4 in terms of Usefulness, but it was clear there was an underlying predisposition to accept e-government services, even if all it achieved was less face-to-face contact with the Saudi bureaucracy. On the other hand, some responses support earlier research (Norris and Moon, 2005) that the loss of physical interaction may make it easier for state officials to ignore issues raised by citizens, as it is very easy not to reply to an e-mail or other form of electronic message. However, it was found that few respondents can be described as making substantive use of e-government services, as set out in Table 5-5:

Table 5-5 Actual Usage of E-government in KSA

<table>
<thead>
<tr>
<th>View of e-government</th>
<th>Usage of e-government services in KSA</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Information search</td>
<td>Very Limited</td>
<td>Limited</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supportive</td>
<td>6</td>
<td>3</td>
<td>7</td>
<td>7</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 5-5 shows that the respondents are divided between those who are supportive and those with a negative view of e-government. The allocation to the usage-category was on the basis of their answers to questions about their actual usage. Notably, a number of
respondents initially said they made no use of e-government services but when pressed cited a particular instance (such as a visa application or administration of their education). On this basis, the categories are constructed as follows:

i. **No**: They answered ‘no’ to the basic question and gave no specific instances of usage;

ii. **Information Search**: Indicated they only accessed e-government to look for information or, at most, download forms to complete manually;

iii. **Very Limited**: Most of these originally answered ‘no’ to the basic question, but then gave an instance of usage. This group have made at least a single attempt to use e-government in KSA;

iv. **Limited**: Indicated they made some usage, usually 2-3 attempts or in a very narrow area (such as their university administration);

v. **Yes**: Made regular use of the limited e-government services available in KSA.

Overall, 40% of the respondents can be said to make some regular use of e-government services (i.e. in the limited or yes categories) and over 60% make some use for more than information search. However, 20% of the sample made no use of e-government services in the KSA, despite their stated willingness to do so. The usage of e-government services outside the KSA was also explored. If those who have only lived in KSA are excluded the following table illustrates the results:

**Table 5-6 Usage of E-government services outside the KSA**

<table>
<thead>
<tr>
<th>Current Location</th>
<th>Usage of e-government outside the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Currently live in an OECD country</td>
<td>1</td>
</tr>
<tr>
<td>Have lived in an OECD country</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 5-6 confirms the view that Saudi citizens will make use of e-government services when it is available. The reason why 5 out of the 17 have made no use of e-government outside the KSA are discussed later in this chapter. In this case, the response is marked as ‘yes’ or ‘no’, although those who answered ‘yes’ indicated substantial usage. In this respect, it is interesting to note that a number of those who have made no use of e-
government services in KSA, have done so when living in an OECD country, as shown in the following table:

Table 5-7 Comparison of usage inside and outside the KSA

<table>
<thead>
<tr>
<th>Current Location</th>
<th>Usage of e-government outside the KSA</th>
<th>Level of usage of e-government within the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Information search</td>
</tr>
<tr>
<td>Currently live in an OECD country</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Have lived in an OECD country</td>
<td>Yes</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td>Have lived in an OECD country</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

For convenience in this table, those who have never lived outside the KSA are excluded. In addition, the domestic usage categories of ‘very limited’, ‘limited’ and ‘yes’ are conflated. This tends to emphasise the underlying willingness to use e-government services if it is available. It is of interest that three out of the eight who have lived in an OECD country have made use of e-government services there, but not in the KSA.

5.2.2.2 Awareness of the Yesser E-Government Initiative

The Yesser initiative formed the background to this research, but even amongst those interviewees who used e-government services in the KSA, few had heard of Yesser as a concept. Of those who had some knowledge, U5 indicated it only covered university student records and the payment of traffic fines, and U9 had heard about it as part of an IT course at university. Others were aware of it in connection with particular government departments such as social insurance (U14), the Ministry of the Interior (U15). Some had heard about the concept (U22 and U18) but did not relate the overall idea to the on-line services they accessed. Only one interviewee (U26) actually discussed Yesser without any prompting.

In the light of these problems, the interviews were used to explore why the respondents believed the Saudi government had started the process of implementing e-government (Abdullah et al., 2008). Many interviewees indicated that they believed that the underlying motivation was to provide Saudi citizens with an improved service (U13, U15, U22, U25). Typical of this view were the following comments:
“I think they are supposed to make things easier and enable people to get public services with no need to go to the department and to stand in queues. It’s more comfortable for both people and employees who treat applications” (U15);
“Honestly, some of them are taking it seriously, but there are governmental departments that are just showing off, because of local pressure or pressure from high governmental levels” (U22).

On the other hand, there was also a suggestion that the KSA had no choice but to adopt some degree of e-government (U16) to be seen in a particular way by the wider international community, as indicated by the following comments:

“They want to look like an open country, developed, and which uses technology” (U14);
“They see how the West has developed and they wanted to develop in their own turn but they don’t know how. Sure they tried, but it wasn’t successful.” (U13);
“They want to be like the world is ... They are trying, the will exists, but I don’t know how they can implement it” (U20).

In effect, to the interviewees, the drive to fit external standards was a major part in the logic behind state adoption of e-government services.

5.2.2.3 E-Commerce in the KSA

Although the focus of this study was on the acceptance of e-government services, many interviewees also discussed e-commerce. Most respondents cited real problems with the physical delivery of goods, with U22 seeing trust as the question as to whether the items would be delivered, not fraud or identity theft. Within KSA e-commerce means making use of banking services, ordering flight tickets, making hotel bookings and paying bills, and if goods are bought on-line they have to be delivered electronically (such as software). Outside the KSA, respondents engaged in a fuller range of e-commerce. The problem with delivery is compounded by a lack of consumer protection and there is little or no purchase of physical
goods from Saudi-based suppliers. U2 offers a succinct summary of the problem and its consequences:

“It’s rare that I buy goods in Saudi, only if these goods came from outside Saudi, as I consider delivery very important, but for services, I frequently use e-commerce”

This is of importance as the literature review (OECD, 2009) suggests that prior experience in e-commerce leads to greater confidence in using e-government services, and, presumably vice-versa. In effect, a weak e-commerce sector, such as in the KSA, removes one important method by which individuals can become used to e-transactions and thus to e-government.

5.3. Personal and Situational Factors

5.3.1 Introduction

This section explores the impact of personal factors on the consumer adoption of e-government services in Saudi Arabia. The wider literature on both e-commerce and e-government adoption (see Section 2.3) suggests that personal and situational factors may influence acceptance or rejection of e-government services. Seven such personal factors were identified in Figure 3.1 as follows:

i. Age;
ii. Gender;
iii. Experience of living outside the KSA;
iv. Language ability;
v. Previous experience (in this case defined as having used e-commerce and their reported aptitude with ICT);
vi. Type of vendor (whether e-government is delivered by the state or by a private provider; and.
vii. Socio-Cultural Pressures

This section takes each of these suggested factors and compares them against the evidence for adoption of e-government (Section 5.2 above) to explore whether there is any evidence for linkages between the individual attribute and usage. The interviews were then
reviewed in more detail to see if there was any evidence that the linkage was described in such a way as to suggest that it had a direct link to the subsequent decision to use or reject e-government services. This relationship, as found in this study, can be summarised as follows:

Table 5-8 Linkages between Individual Factors and E-government usage

<table>
<thead>
<tr>
<th>Factor</th>
<th>Potential Linkage</th>
<th>Implied as having a direct effect</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Yes</td>
<td>No</td>
<td>4.3.2</td>
</tr>
<tr>
<td>Gender</td>
<td>Yes</td>
<td>No</td>
<td>4.3.3</td>
</tr>
<tr>
<td>Live outside KSA</td>
<td>Yes</td>
<td>Some</td>
<td>4.3.4</td>
</tr>
<tr>
<td>Language</td>
<td>No</td>
<td>No</td>
<td>4.3.5</td>
</tr>
<tr>
<td>Previous Experience</td>
<td>Yes</td>
<td>Some</td>
<td>4.3.6</td>
</tr>
<tr>
<td>Type of Vendor</td>
<td>No</td>
<td>No</td>
<td>4.3.7</td>
</tr>
<tr>
<td>Socio-Cultural Issues</td>
<td>Yes</td>
<td>No</td>
<td>4.3.8</td>
</tr>
</tbody>
</table>

Overall, the evidence is that there are some apparent linkages for factors such as age, gender and socio-cultural pressure but for the most part there is no evidence these had a direct relationship to the actual usage of e-government services. For Language use and Type of vendor, there is no evidence of either (but for both some individuals did indicate considerable importance) but for ‘Location’ and ‘Previous Experience’ there is evidence that both had an impact on the decision to use e-government services.

4.3.2 Age

The interviewees were asked directly if age had any influence on either their own, or others’, decision to use e-government services. To assist analysis, the interviewees were categorised into four age bands:

a) From 18-25;

b) 26-35;

c) 36-45; and,

d) Over 46.
The individual interviewees were allocated to these bands as follows:

### Table 5-9 Age Spread of the Sample

<table>
<thead>
<tr>
<th>Age Band</th>
<th>Number</th>
<th>Relevant Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>5</td>
<td>U5, U6, U9, U13, U23</td>
</tr>
<tr>
<td>26-35</td>
<td>13</td>
<td>U8, U10, U12, U15, U17, U19, U20, U22, U24, U26, U27, U29, U30</td>
</tr>
<tr>
<td>36-45</td>
<td>6</td>
<td>U2, U3, U4, U18, U21, U28</td>
</tr>
<tr>
<td>46 and over</td>
<td>5</td>
<td>U1, U11, U14, U16, U25</td>
</tr>
</tbody>
</table>

N=29 (1 not known)

When age is compared to usage of e-government services (inside or outside the KSA), there is a relatively weak confirmation of some of the early findings (Al-Solbi and Al-Harbi, 2008, Betrah, 2010, Venkatesh et al., 2003), however, it cannot be described as a strong effect, as shown in the following table:

### Table 5-10 Age and any e-government usage

<table>
<thead>
<tr>
<th>Age</th>
<th>Usage of E-government anywhere</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td></td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>26-35</td>
<td></td>
<td>1</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>36-45</td>
<td></td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>46+</td>
<td></td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4</td>
<td>25</td>
<td>29</td>
</tr>
</tbody>
</table>

In this case, the four respondents who reported making no use of e-government services (inside or outside the KSA) were over 36. The transcripts of the interviewees were reviewed to explore if they believed that age was a factor they believed as influencing their usage of e-government services. However, very few of the respondents in any age group indicated that age played an important part of either their own or anyone else’s motivation to use e-government services. From the youngest group, U5 was typical in stressing that the internet and e-government had universal benefits: “I don’t think that factors like age or gender are important, as the internet has become essential for everybody”. Most of the older
age groups agreed and were keen to use e-government services if it was available and all the
government needed to do was “to establish it and we’ll do it” (U3). Some saw relative
maturity as making it easier to engage with the internet, as in the following example: “The
older a person is, the more he becomes daring” (U22).

In contrast, some of those aged over 46 did see age as an issue: “when reaching a
certain age, it becomes harder to learn new things; one tends to stick to what you already
know” (U16). Despite this, they were clear in their opinion about e-government services: “I
think it’s a good thing” (U16). Only one respondent (U1) was over 60 and, unusually in this
sample, made very little use of the internet. However, this individual was very supportive of
the basic idea of e-government services: “I don’t think that convincing people of my
generation will be a hard task … I don’t think it will be difficult to make them adopt it, as e-
government can be very efficient in fighting bureaucracy and corruption” (U1).

In direct terms there is little evidence that age led to different reasons being given for
adopting or rejecting e-government services. There were some differences in overall internet
usage with the younger group reporting substantive internet usage, such as: “A lot ... everyday” (U9) with considerable use of social networking. This was true of the 26-35 age
group with usage rates of “every day, maybe one hour or one hour half” (U10). Several
members of the oldest age group (e.g. U11 and U14) were very technologically aware and
reported making use of the internet and e-government in their jobs. In consequence, as with
others, they reported the lack of services as a major constraint: “My experience is limited,
based on urgent needs. I use e-government only when I feel compelled to do so. We are still
in half way” (U11).

For those aged 26 and older, there was a growing incidence of respondents reporting
that their IT skills were self-taught and had developed as needed (U20). This need to self-
teach was seen by some of the over 36 group as a minor constraint:

“Age can have a big influence, for example, when I was young I had more
patience and could spend three hours reading a book, but now I don’t have the
same patience as before, I don’t have the same eyesight or concentration, so
this has some impact” (U18).

On this basis, age can be disregarded as a factor influencing the adoption of e-
government services. Of the sample, only three raised age as having an influence and in each
case this reflected less about their willingness to use e-government services and more their
concern about how to learn to do so. They may have particular training and support needs, but this does not affect their underlying attitude.

5.3.3 Gender

The sample was skewed to male respondents as the following table shows:

Table 5-11 Gender Profile of the Sample

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Relevant Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>9</td>
<td>U3, U4, U8, U9, U10, U13, U18, U20, U23</td>
</tr>
<tr>
<td>Male</td>
<td>21</td>
<td>U1, U2, U5, U6, U7, U11, U12, U14, U15, U16, U17, U19, U21, U22, U24, U25, U26, U27, U28, U29, U30</td>
</tr>
</tbody>
</table>

In turn, gender can be mapped onto usage of e-government as follows:

Table 5-12 Relationship between Gender and E-government Usage

<table>
<thead>
<tr>
<th>Age</th>
<th>Usage of E-government anywhere</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>1</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4</td>
<td>26</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 5-13 above indicates a far higher likelihood that male respondents make use of e-government services than females. However, when the transcripts were reviewed, there was no evidence that gender, as such, was the driving force. Respondents were asked directly if they believed that gender had an impact on their decision to use e-government services. None gave a positive response and all were clear that gender played no role. However, there is a gender-based issue that is very specific to the KSA of restricted female access to public buildings unless accompanied by a male relative. The expectation was that this would have biased female respondents towards, not away from, e-government services. These views can be summarised as follows from female respondents:

- “dealing with a screen is better, ... , women will feel more comfortable, with privacy and less harassment” (U18);
• “because you may meet people of all kinds: some rude, some who frustrate you, some who want a relationship with you…. dealing with a system is better… [visiting Government offices] always leads us to woman abuse in KSA” (U20); and,
• “when it comes to governmental transactions … Unfortunately, here in Saudi Arabia, they don’t allow women to apply directly, women should send a man, a delegate, or a guardian to do the transaction” (U23).

As with age, the reported views of the participants imply that gender is not a direct influence on e-government services adoption.

5.3.4 Experience outside the KSA

This section examines whether having lived outside the KSA had an influence on e-government services usage. It was proposed that this might influence the adoption of e-government services within the KSA in two contrasting ways:

i. They might be more keen to do so, having seen the benefits elsewhere;
ii. They might be more critical of the approach within the KSA as they have used more sophisticated systems when living in OECD countries.

By controlling for this measure, it is possible to separate out the response of Saudi citizens to e-government services as opposed to their response to e-government services within the KSA. To achieve this, the sample was divided into three groups. The first had always lived in the KSA (holidays and short trips were not seen as relevant in this respect), the second group now lived in the KSA but had lived in an OECD country, and the third group were currently living in an OECD country.

Table 5-13 Experience of living outside the KSA

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
<th>Relevant respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always in KSA</td>
<td>13</td>
<td>U1, U3, U4, U5, U6, U7, U9, U11, U14, U16, U22, U25</td>
</tr>
<tr>
<td>Currently in KSA, have lived outside</td>
<td>9</td>
<td>U2, U12, U13, U17, U18, U19, U20, U21, U28</td>
</tr>
<tr>
<td>Currently live outside the KSA</td>
<td>8</td>
<td>U8, U10, U15, U24, U26, U27, U29, U30</td>
</tr>
</tbody>
</table>
It is possible to relate Table 5-15 to the question whether or not they had made use of e-government inside or outside the KSA as follows:

### Table 5-14 Proportion by location and usage of e-government

<table>
<thead>
<tr>
<th>Current Location</th>
<th>Have used e-government anywhere</th>
<th>Have used e-government in the KSA</th>
<th>Have used e-government outside the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always lived in the KSA</td>
<td>84.6%</td>
<td>84.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Now live in the KSA</td>
<td>88.9%</td>
<td>66.7%</td>
<td>55.6%</td>
</tr>
<tr>
<td>currently live outside the KSA</td>
<td>87.5%</td>
<td>50.0%</td>
<td>87.5%</td>
</tr>
<tr>
<td>Total</td>
<td>86.7%</td>
<td>70.0%</td>
<td>40.0%</td>
</tr>
</tbody>
</table>

As shown in Table 5-15, 84.6% of the respondents who have always lived in the KSA have made use of e-government services (and, by definition, this usage was within the KSA). However, while 87.5% of those who currently live outside the KSA have made some use of e-government services, only 50% have done so within the KSA. Of the whole sample, 86.7% have made some use of e-government services either inside or outside the KSA. This leaves open one of two explanations for the differences in usage rates within the KSA. One is that the difference is due to the type of e-government services on offer (range of services, competence in delivery) and the other is that those individuals with experience outside the KSA apply different criteria to the group who have always lived in the KSA.

The respondents who had always lived in the KSA believed that properly implemented, e-government services would be an improvement to their lives. They were aware (U3, U5, U7, U14, U22) that what was available was limited, with current services described as “actually, there are not a lot of services – it is limited to university and traffic violations” (U5). For many, the quality of internet connections was seen as important: “sometimes the actual connection speed is very low, around 10% for example, and you have to stay and wait a long time until a page loads” (U6) but again this did not lead to a rejection of e-government services. U9 offers a partial contrast: “For example, the university website is good and easy to use, but it has some defects, like slowness when trying to modify some information. Also the website sometimes does not open or takes hours to open, which is very tiring if you really need to use it” (U9).
If this group is seen as the baseline, there is evidence for a desire for e-government services and an acknowledgement that what is available is neither comprehensive nor easy to use. These responses confirm the problems with the current telecommunications network in Saudi Arabia suggested in other studies (Dwivedi and Weerakkody, 2007).

Those who were now living in the KSA (Table 5-15) but who had previously lived in an OECD country (U2, U13, U17, U18, U19, U21) all stressed that services outside the KSA were better. A typical response is that of U12: “very good, and the best thing was a fast response, whatever transaction you do, you’ll always get a fast response, unlike in KSA”. U28 indicated that his awareness of the possibilities of e-government services came from having studied outside the KSA. Having returned to the KSA, three (U17, U18 and U21) indicated that they were aware of what they could not now do but this did not influence their wish to see effective e-government services introduced as it would make “things easier and the procedures simpler” and “something is better than nothing. This might be a beginning to extend those services to other governmental agents, or a beginning for those who already provide on-line service to improve their services once they are aware of the benefits that come from using these technologies” (U2). U19, drawing on expertise in Australia, suggested that one problem in KSA was “there is no fibre connection, speed is very low, the number of ISPs is very small and they all have the same offers, so clients are obliged to use their services” (U19). On the other hand, U28 suggested that the quality of service provision varied across the country: “It depends where you live, Saudi Arabia is a big country, so you may face connection problems in some places and not in others”, indicating that overall he was content with the quality of provision.

The group shown in Table 5-14 as currently living outside the KSA offered a very similar set of responses to those who had returned to KSA. They wanted to use e-government and were aware of the contrast: “here in Australia, people rely completely on e-government” (U8). On the other hand, U27 saw positive developments within the KSA: “In Saudi, I am very satisfied with the new changes and hoping for future improvements, the government has in fact come a long way and people are starting to seriously consider the use of e-government in Saudi Arabia”. U29 also makes a strong distinction between different ministries: “in Saudi the situation is quite unique, some government websites are doing extremely well while some others are just bad”.

5.3.5 Usage of English as a second language

28 out of 30 of the respondents indicated they spoke English as a second language (the exceptions were U1 and U9). Of the rest, only one (U6) saw their English as being limited and felt this restricted their use of the internet. Of this small sub-group with no or limited English, some (e.g. U6) limited their activities, but U9 decided to engage in e-commerce with foreign websites in any case:

“One time I bought some goods from Thailand, though I had no idea about Thailand, or the quality of their products, but finally I found they were good”
(U9)

This appears to indicate that experience in a second language is not an important factor to explain variations in e-government usage within the sample.

5.3.6 Previous Experience

In the present study, previous experience is explored as two related criteria. The first is whether or not respondents had used e-commerce before adopting e-government and the second is their level of self-reported ICT expertise.

4.3.6.1 Experience with e-commerce

Although e-commerce in the KSA is mostly related to purchasing services on-line (see Section 5.2 above), the great majority of the respondents who used e-government had made previous use of e-commerce. If U1 is excluded (as making use of neither), then twenty out of the remaining 29 could be described as making use of e-commerce and the remaining 9 reported either no usage or very minimal. Of these nine, four have always lived in the KSA, four currently do so and one currently lives outside the KSA. It is likely that the limited range of services available in the KSA (Al-Solbi and Al-Harbi, 2008) limits their use of e-commerce. However, experience or lack of it with e-commerce has no direct impact on their underlying willingness to use e-government, but it does have an impact on their actual adoption (see Sections 5.4 and 5.6 below).
5.3.6.2 Prior ICT Expertise

Based on the interviews, there are three ways to describe an individual’s ICT expertise: self-reported technical aptitude, self-reported enthusiasm for ICT and whether or not they have made use of ICT outside the KSA. Those who indicated a degree of technical aptitude (U2, U6, U8, U9, U10, U15, U19) tended to see this as an important factor in their usage of e-commerce and e-government services. Typical was the opinion of U2: “My understanding of how the internet works, and how safe websites work, and the procedure of how information is exchanged, and how it is received and processed by the party that provide the service. All this reassured me”.

However, a number indicated a willingness to learn as they went along in order to be able to make full use of the potential of the internet (e.g. U4, U18, U20). A typical response of this group was U20’s: “I had something like computer-phobia, I had the will to learn how to use it but I didn’t know where to start. For about one year, the machine didn’t serve for anything, until I began to learn step by step, especially after I saw my sons using their laptop”. Thus, lack of existing expertise is not a deterrent to use of e-government services and the relationship between enthusiasm and competence can be expressed in the following table:

**Table 5-15 Enthusiasm and ICT Aptitude**

<table>
<thead>
<tr>
<th>Enthusiasm for technology</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT expertise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Limited</td>
<td>7</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>4</td>
<td>30</td>
</tr>
</tbody>
</table>

As would be expected, those with ICT expertise are also overwhelmingly enthusiastic for ICT, but those who lack expertise (limited or none) are also enthusiastic. In general, at most, ICT skills can only be seen as an enabler in the decision to use e-government services rather than critical. While overall, neither previous use of e-commerce nor self-reported ICT skills are closely related to actual patterns of use of e-government services, ICT skills appear
to be roughly correlated to the usage of ICT within the KSA, as indicated in Table 5-17 below:

**Table 5-16 ICT Expertise and E-government Usage in KSA**

<table>
<thead>
<tr>
<th>ICT expertise</th>
<th>Usage of E-government in the KSA</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Information search Very Limited Limited Yes Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Limited</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

This spread might indicate that the lack of user-friendliness (see Section 5.4 below) has some impact on usage. Those with self-reported limited ICT skills seem most likely to be not making any use of e-government services in the KSA, even though they do so outside. For example, U21 stressed the important criteria to adopting e-government services as follows:

“I require the website to be easy to use, information to stay confidential, to be updated and improved from time to time; it should also contain a section to submit claims or suggestions”.

This judgement was linked to a view that a system had to be immediately useful since: “If they fail to deliver it once; you can be sure that I will never use their services again” (U21).

As with location (see Section 5.3.4), this indicates there is a relationship between personal factors and actual adoption, but that this is mediated through a different issue. As is explored in Section 5.4, the strong suggestion is that ICT aptitude combines with perceived ease of use and a system will be rejected when ICT aptitude is not sufficient to cope with the complexities. A similar finding emerged from the revised analysis reported subsequently in section 5.6.
5.3.7 Type of Vendor

One issue that was explored was whether trust and willingness to use e-government services were related to the decision to provide this service directly by the state or indirectly by a private provider. A number of respondents (U1, U2, U3, U4, U5, U7, U14, U18, U20, U25, U26, U27, U28, U29) either gave no indication of any preference or indicated it did not matter.

Table 5-17 Response to use of a Private Contractor

<table>
<thead>
<tr>
<th>View</th>
<th>Strong Preference</th>
<th>Weak Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer a contractor</td>
<td>U11, U12, U15, U19, U21</td>
<td>U6, U9</td>
</tr>
<tr>
<td>Prefer the state</td>
<td>U10, U23</td>
<td>U13, U16, U17, U22, U30</td>
</tr>
</tbody>
</table>

Of those with an opinion, there is a roughly even split between those preferring private and state provision. Those who prefer to see e-government services provided by private providers tended to take a stronger view, and typical of this group was U12: “I think a contractor company is best. As a company will have clear specifications and plan to follow. The productivity is better than a government’s. And a company will always strive to deliver and not to lose their contract, that’s why they will have the motivation to offer a better service”.

In contrast, one interviewee (U10) indicated a refusal to use services provided by a private contractor, but gave no full explanation. U23 clearly linked the issue of who provided the service to the issue of trust, a view shared with U13: “Outside KSA I have no problem; I can take the risk because I am sure nothing will be lost. But it is not the case here.” Some of those who supported state provision took the view that it would lead to a better outcome in the long term: “I believe that when the private sector works for the government, it no longer keeps the same credibility and speed in processing as the government. So I prefer to deal with the traditional government and let it develop rightly” (U22).

On this evidence, the type of provider is of relatively little importance. A small group expressed a positive desire to see private provision on the grounds of expertise and quality, and a few indicated a preference for state provision of e-government services. If those who indicated that the nature of the provider was of no importance are excluded, then there is no obvious indication that their view as to whether the system is better provided by the state or
by a private provider has any bearing on their usage of e-government services within the KSA. This is expressed in Table 5-18 below.

<table>
<thead>
<tr>
<th>Type of Vendor</th>
<th>Usage of E-government in the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Possibly prefer contractor</td>
<td>2</td>
</tr>
<tr>
<td>Prefer private</td>
<td>1</td>
</tr>
<tr>
<td>Prefer state</td>
<td>1</td>
</tr>
<tr>
<td>Reject if not provided by the state</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
</tr>
</tbody>
</table>

It is likely that this mix of preferences and usage patterns is more a result of lack of knowledge as to what parts of Yesser are state-provided and which elements have been delivered by contractors. U10 was the only respondent who indicated making no use of e-government in the KSA, but did outside, and that the use of a private contractor would lead to a rejection of e-government services. Interviewee U10 gave no further information to support this refusal, but in general indicated that issues of trust and risk were very important in informing their usage of both e-commerce and e-government services.

5.3.8 Socio-Cultural Pressures

This section looks at three potential sources of social and cultural pressure that may influence the decision to use or reject e-government services. The first is whether using e-government services fits with the individual’s own set of values; the second whether their family group exerted any influence; and the third whether they perceived any influence from their wider peer group or society as a whole. Other studies of e-government services adoption have suggested that all these factors can play a role (Hung et al., 2006).

Relatively few respondents indicated their own cultural beliefs had any influence on their decision. Of those who did, a number (U4, U5, U11) linked their decision to the idea of being modern and fitting in with a high-technology world. Typical of this view was U11: “As the world is moving towards globalization, this will become standard in the coming years, so
it is essential to keep pace with it’. U28 offers a slightly different, but not contradictory, explanation: “because my dream is to see our Islamic country fully developed”.

Overall the relationship between their perception of the importance of culture and their usage of e-government services is set out in Table 5-19:

Table 5-19 Personal culture and view of e-government

<table>
<thead>
<tr>
<th>View on Culture</th>
<th>Usage of E-government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal View: Culture</td>
<td>No</td>
</tr>
<tr>
<td>Fits to own culture</td>
<td>1</td>
</tr>
<tr>
<td>Clash with own culture</td>
<td></td>
</tr>
<tr>
<td>Not Important</td>
<td></td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

As this table indicates, only 1 respondent (U16) indicated an objection on grounds of culture and this individual also stressed how the decision to use e-government was a consequence of a lack of choice rather than preference. Overall, the revealed relationship is too weak to suggest that personal culture plays a strong role in the adoption of e-government.

5.3.8.1 Familial influences

For the most part, respondents either indicated that their families were supportive, or not important, in their decision to use both e-commerce and e-government services. Two respondents (U21, U22) described how members of their family had warned them not to engage in e-commerce due to the risks, but neither saw this as a concerted attempt to prevent use, more a statement of concern. U23 was unusual in seeing familial pressure not to use e-commerce:

“85-90% advised me not to use the internet specially -as you know in our society- our fathers and elderly people ... Yes they criticized me and they still criticize me. Some of my family might have used the internet, my family for instance would never use internet for such activities many of them won’t. They fear the lack of credibility and security. There is nothing there that gives them adequate guarantees” (U23).
However, overall, as with the fit to personal values, familial dynamics had very little influence on the decision to use e-government services, as the following table shows:

### Table 5-20 Family Influences and e-government services adoption

<table>
<thead>
<tr>
<th>Family Influences</th>
<th>Usage of e-government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Positive</td>
<td>2</td>
</tr>
<tr>
<td>Positive, with some concerns</td>
<td>3</td>
</tr>
<tr>
<td>Neutral</td>
<td>6</td>
</tr>
<tr>
<td>Not mentioned</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4</td>
</tr>
</tbody>
</table>

However, what is interesting is that two respondents (U3 and U18) suggest they were encouraged by their family to use e-government services but have not yet done so. Both are otherwise supportive of e-government and both report that their ICT aptitude (see Section 5.3.6) is limited. Otherwise, there are no common characteristics and the difference between presumed family support for usage and their own personal decision is not identifiable from the relevant transcripts.

### 5.3.8.2 Wider Social influences

Some respondents indicated that they saw fear of change as a constraint on the wider adoption of e-government. Typical was the view of U26 as “I felt that society [in Saudi] was more curious than critical. They just don’t know. There is ignorance. Even the educated ones are ignorant” (U26). U2 and U4 placed the reason for this level of concern as coming “especially from people who place a lot of importance on rumours and say that using the internet may be risky, especially when using credit cards as their number can be stolen; and also in the fact that the product may not arrive, and such things” (U8). In this case, there is a divergence within the sample as to the importance of wider social norms on their decision to use e-government services, as shown in Table 5-21 below.
Table 5-21 Social Norms and E-government Adoption

<table>
<thead>
<tr>
<th>Group View: Culture</th>
<th>Usage of e-government</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Positive</td>
<td>1</td>
</tr>
<tr>
<td>Ignores negative comments</td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>1</td>
</tr>
<tr>
<td>Not mentioned</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4</td>
</tr>
</tbody>
</table>

As this table reveals, six respondents indicated they ignored wider social pressure and made use of e-commerce and e-government services. A small group (20%) indicated that peer or social support had led them to adopt e-commerce and e-government services, but overall 60% indicated it had no impact or did not raise the issue. The group that indicated positive social reasons to use e-government services was slightly biased to those who had lived outside the KSA at some stage. Three of these had previously lived outside the KSA and one currently did so.

5.3.9 Summary

Overall, there is no clear evidence that the more personal, individual factors are a major influence, either on the reason given to adopt or reject e-government services or their actual usage. From the various analyses above, some factors hypothesised in other studies can be rejected, including the following:

a) Language aptitude (however, as noted above this sample is not typical in this respect);

b) Previous experience with e-commerce; and,

c) Socio-familial pressure.

Other factors such as age and gender have little relationship to the stated reasons for adoption or rejection but gender in particular has some relationship to actual take-up. This is addressed in later parts of this chapter as to whether this reflects other attributes than gender.
shared by the female interviewees (such as their ICT expertise or the likelihood of having lived outside the KSA). For some respondents, issues such as the type of vendor are plainly very important to their personal decision, but again, there is no evidence that this has a general effect.

The result is that there is some evidence that location is related to usage, in particular the finding that some of those who have lived outside the KSA use e-government services in an OECD country but not in Saudi Arabia. The second is the linkage between ICT and adoption. In this case, as explored in Section 5.4 below, the key issue may be less ICT skills as such and more weaknesses in the technical implementation of e-government services within Saudi Arabia. Finally, there is evidence that prior use of e-commerce is linked to subsequent use of e-government services.

5.4. Technological Factors

This section explores how the technological factors influence e-government services adoption. As discussed in Chapter 3, the technological factors reflect the usefulness of completing transactions on-line and the complexity of those transactions has a direct effect on take-up. These concepts are often referred to as usefulness and ease of use in the literature (Venkatesh et al., 2003). Section 5.4.1 starts by defining usefulness and ease of use in the terms used by the respondents and identifies that most of the sample use one criterion or the other. The next section then considers if the reliance on usefulness or ease of use as a decision rule can be related to the personal factors explored in Section 5.3 above. The final section then considers if the decision rule adopted has a bearing on the actual usage of e-government services. The indication that some of the sample (see Section 5.2) come to a different decision inside or outside the KSA is explored, as it is indicative of why a particular decision rule might be invoked and the implications for e-government services usage.

5.4.1 Usefulness and Ease of Use

This section starts by exploring the various ways the respondents described either usefulness or ease of use as criteria in their decision to adopt e-government services. Some respondents, for example, clearly set out usefulness as their key criterion and others were equally clear they relied on ease of use. For these respondents, the importance of usefulness and ease of use is an inverse relationship (i.e. if one is important, the other is much less so). Of the sample, only two respondents indicated that both ease of use and usefulness were
important in their decision. These categories are explored in more detail below, but in summary 22 out of 30 respondents clearly indicated that one technological factor was dominant, two used both, and four felt they had no choice but to use e-government services regardless of their own preferences (but still indicated that usefulness had been a factor in their decision):

Table 5-23 shows how the interviewees split in terms of the dominant factor they identified. So the bulk (16) indicated a reliance on usefulness for their decision making and only 2 could be said to have indicated they relied on both usefulness and ease of use.

Table 5-22 Dominant Technological Factor

<table>
<thead>
<tr>
<th>Critical Factor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both</td>
<td>2</td>
</tr>
<tr>
<td>Neither</td>
<td>2</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>6</td>
</tr>
<tr>
<td>Lack of choice</td>
<td>4</td>
</tr>
<tr>
<td>Usefulness</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

The respondents’ interpretations of usefulness as a criterion for the acceptance or rejection of e-government services can be grouped into five categories ranging from those who saw it as critical, to those who saw it as of limited importance in their decision. These categories are described as follows:

a) Critical
b) Important
c) No choice, but important
d) Limited
e) No Response

The respondents were allocated to the appropriate category as shown in Table 5-24 below:
### Table 5-23 Usefulness as a reason to use E-government services

<table>
<thead>
<tr>
<th>How is Usefulness described</th>
<th>Respondents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>U10, U18, U19, U24, U25, U26, U28</td>
<td>7</td>
</tr>
<tr>
<td>Important</td>
<td>U2, U4, U5, U8, U9, U14, U15, U22</td>
<td>8</td>
</tr>
<tr>
<td>No choice, but important</td>
<td>U6, U11, U16, U20, U27, U30</td>
<td>6</td>
</tr>
<tr>
<td>Limited</td>
<td>U7, U13, U17</td>
<td>3</td>
</tr>
<tr>
<td>No Response</td>
<td>U1, U3, U12, U21, U23, U29</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Typical of those who see usefulness as a critical variable was U26. For this interviewee, the reason to use e-government services was expressed in the following terms:

“I use it because it helps me get my work done. I can tell you exactly how participation is economically sound for me and for the country. Why use the car to go ... burn fuel, harm the environment, and pay for parking when I get there, and go through this again on the way back? I can stay home and finish all of this without leaving the house.”

The difference between this response and those of interviewees who see it as important is relatively minor but has some interesting nuances. Key to this second group was an indication that they made different decisions for different aspects of e-government services, but the decision was essentially driven by a view that the service had to be useful, but with some attention to ease of use. Typical of this group was U9:

“Yes, I use the university website, it is essential for me to see my marks, communicate with the teachers ....etc. but in the other general transactions, like renewing my passport; I did it the usual way”

This individual repeated the phrase “easier than the usual way” at several points, indicating some conflation of usefulness and ease of use as core criteria. A number indicated
they had had no choice but to use a particular service. Mostly, they were content with this, seeing the service as useful, and U27 is typical of linking a lack of choice and being content to use e-government if it is useful:

“after coming to Australia, ... actually I was forced to use it, so in cases like renewing my student visa”. ... “But inside Saudi, number one factor was motivation as I was forced to do it on-line and I had no other option”.

On the other hand, others only made use of e-government services when they had no choice, such as U20:

“Yes, I was obliged to use it because of my job .... Yes, obliged, if it didn’t have to deal with the Ministry of Commerce, or the Customs office, I wouldn’t do it”.

Finally, those who described usefulness as being of limited relevance often reflected on problems with some aspects of e-government in the KSA. Typical of this group is U13, as the following quotation indicates:

“Here in Saudi, I have tried it many times, but I couldn’t renew my residence permit. I visited the website, and went to the relevant section, but they just ask you to fill in your ID number, name, age and phone, and they will contact you later”

The extent to which this sub-group tends to emphasise ease of use is explored below. However, there is still a trade-off between usefulness and ease of use. To some, usefulness is dominant and ease of use has either no or limited relevance. To others, ease of use is dominant and this overrides any opinion as to the underlying usefulness of the service on offer.

The importance ascribed to ease of use can be divided into six sub-categories:

a) Being the key factor in their decision;

b) Tolerant about problems with ease of use;

c) Service-driven (in other words not worried about ease of use as long as they gain access to the service they want);
d) Depends on importance (ease of use can be important but it depends on how important it is for them to access a service);

e) Used despite lack of ease of use (will ignore ease of use as a criterion);

f) No Response

Overall, the respondents can be allocated to these categories, as shown in the following table:

Table 5-24 Ease of Use as a reason to use E-government

<table>
<thead>
<tr>
<th>How is Ease of Use described</th>
<th>Respondents</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Factor</td>
<td>U3, U12, U13, U17, U21, U22, U23, U29</td>
<td>8</td>
</tr>
<tr>
<td>Tolerant</td>
<td>U2, U5, U9, U10, U15, U16, U20, U25, U26</td>
<td>9</td>
</tr>
<tr>
<td>Service driven</td>
<td>U8, U14, U18, U19, U27, U28</td>
<td>6</td>
</tr>
<tr>
<td>Depends on importance</td>
<td>U6,</td>
<td>1</td>
</tr>
<tr>
<td>Used despite</td>
<td>U4, U7, U11, U30</td>
<td>4</td>
</tr>
<tr>
<td>No Response</td>
<td>U1, U24</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

(Note that the 8 identified as seeing ease of use as a key factor include the two respondents who also see usefulness as a key factor)

This group can be usefully conflated into three important groups: Those who identified ‘ease of use’ as the key factor in their decision (8 respondents); those who in varying ways indicated it had some importance but what mattered was the service (usefulness) on offer (20 respondents); and those who did not raise the issue (2 respondents). Those who saw ‘ease of use’ as the key factor tended to stress a number of issues, as indicated by the following quotations:

- “Make websites easier, more security, improve internet networks so that people can access websites easily ... I sent an application, and until now I didn’t get any response, until now the employee didn’t open my application” (U12);
• “information or services are supposed to be accessible, this is the task of the ministry” (U22), in this context they were not, making the system too hard to use to be useful;
• “Yes it is, websites that are easy to understand looks more appealing and more acceptable to people than other government websites that are difficult to use or not user friendly. However, there is another factor to mention here which is the connection speed or the speed of the website. ... if a government website is so heavy and takes too long to load then I will not accept it and I would not want to use it at all. It is all about doing things faster and easier so if one of them is missing then we are not interested” (U29).

This group of respondents placed ease of use ahead of usefulness, and for them a system seen as being hard to use would be rejected. For the rest, there were various shades of being prepared to accept these problems, as long as the service was available, as the following quotations indicate:

• “It depends on how important is the application. If I do not really need it urgently, for example if it takes five days on-line, and I still have one month of time, it is no problem. ... But if I am pressed by time, and I know that if I can process it in one day if I do it the usual way, I will do it the usual way” (U5);
• “I want the website to be fast, want it to fill all my personal information when I enter my national ID number, rather than fill them in myself” (U20);
• “I'll keep trying till I get through, this is not an issue for me” (U30).

In general, the difference between those who placed ease of use as the dominant factor and those who relied on usefulness was an unwillingness to continue in the face of a complex or difficult process. For the others, the logic seemed to be that an easy to use, quick system was desirable, but this was outweighed by a view that accessing services, or avoiding a physical visit to a government office, was more important.
5.4.2 Interaction of Personal and Technological Factors

This section explores whether the various personal factors discussed in Section 4.3 above have any bearing on the either the emphasis on usefulness or ease of use as decision criteria. In other words, is, for example, gender, or previous experience with e-commerce, a reason to adopt either usefulness or ease of use as their criterion for adoption. The personal factors are:

a) Gender;
b) Age;
c) Experience outside the KSA;
d) English as a second language;
e) Previous experience of (a) ICT and (b) E-Commerce;
f) Type of Vendor;
g) Experience outside the KSA
h) Socio-Cultural Factors.

Each of these is compared to the categories in Table 5-23 to explore whether these personal factors are related to the relative importance placed on ‘usefulness’ and ‘ease of use’. These descriptors were: Both; Neither; Ease of Use; Lack of choice or Usefulness. The relationship between these categories and the gender of the respondent is shown below:

Table 5-25 Gender and Technological Factors

<table>
<thead>
<tr>
<th>Gender</th>
<th>Technological Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both</td>
</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
</tr>
</tbody>
</table>

The main finding here is that female respondents were much more likely to cite ease of use (33% as compared to 8% of males) as their dominant criterion. From the interviews discussed in Section 5.3 there is no evidence that gender, as such, determines acceptance. However, there is evidence (see Section 5.4.3 below) that those who stress ease of use are
less likely to make use of e-government services in the KSA than those who stress usefulness. This offers a potential explanation of why the female respondents were more likely to be found not to use e-government services in the KSA than the males.

Table 5-26 can also be set out in terms of the age of the respondent, as:

**Table 5-26 Age and Technological Factors**

<table>
<thead>
<tr>
<th>Age</th>
<th>Technological Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both</td>
</tr>
<tr>
<td>18-25</td>
<td></td>
</tr>
<tr>
<td>26-35</td>
<td></td>
</tr>
<tr>
<td>36-45</td>
<td></td>
</tr>
<tr>
<td>46+</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
</tr>
</tbody>
</table>

This table shows that there is no clear pattern as to the emphasis placed on ease of use or usefulness according to age.

Finally it is useful to relate the self-reported language skills of the respondents to the relative importance of the various Technological Factors, as:

**Table 5-27 Language Skills and Technological Factors**

<table>
<thead>
<tr>
<th>Language</th>
<th>Technological Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both</td>
</tr>
<tr>
<td>Can speak English</td>
<td>2</td>
</tr>
<tr>
<td>Only Arabic</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
</tr>
</tbody>
</table>

This table indicates that one of the two who had no English also made no use of the internet for either e-government services or e-commerce. With such a limited sample set, there is no evidence that language aptitude or skills has any bearing on the decision rule adopted.
Previous experience was defined in Section 5.3 as either self-reported ICT aptitude or previous experience with e-commerce. To address this, Table 5-28, in turn compares their self-reported ICT aptitude and the relative importance of the technological factors.

**Table 5-28 ICT Aptitude and Technological Factors**

<table>
<thead>
<tr>
<th>ICT Aptitude:</th>
<th>Both</th>
<th>Neither</th>
<th>Ease of Use</th>
<th>Lack of choice</th>
<th>Usefulness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>13</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Limited</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>30</td>
</tr>
</tbody>
</table>

As already discussed in Section 5.3, there is a linkage between level of ICT skills and usage of e-government services. As is clear from the above table, those with limited skills are more likely (40% compared to 9%) to rely on ease of use as their key criterion. As discussed below in Section 5.4.3, ease of use is also related to non-adoption of e-government services within the KSA. A lack of ICT skills is linked to the adoption of ease of use as the decision criterion and in turn to the non-use of e-government services in the KSA. It is also possible to compare the technological factor adapted to their previous usage of ICT. This roughly follows the pattern of:

**Table 5-29 Usage of E-commerce and Technological Factor**

<table>
<thead>
<tr>
<th>Prior Usage of e-commerce</th>
<th>Both</th>
<th>Neither</th>
<th>Ease of Use</th>
<th>Lack of choice</th>
<th>Usefulness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>13</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>30</td>
</tr>
</tbody>
</table>

As with self-reported ICT aptitude, there is a relationship between lack of experience with e-commerce and emphasis on ease of use. This was explored in Section 5.3 above, where it was clear that there was a further linkage between ICT competence and actual usage of e-commerce. This is explored in more detail in Section 5.4.3 below, where it is clear that
the relative complexity of e-government services websites in the KSA is a barrier to those who stress ease of use as their main decision rule.

As discussed earlier, type of vendor was an important issue for a small set of the sample, and their views in this regard can be mapped onto the Technological Factors as:

**Table 5-30 Type of Vendor and Technological Factors**

<table>
<thead>
<tr>
<th>Preference for Type of Vendor</th>
<th>Both</th>
<th>Neither</th>
<th>Ease of Use</th>
<th>Lack of choice</th>
<th>Usefulness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer State provision</td>
<td>1</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Slight preference for Private Provision</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Prefer Private Provision</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>30</td>
</tr>
</tbody>
</table>

This table suggests that there is no clear pattern of type of vendor preferred and emphasis on ease of use or usefulness. In the context of the discussion in Section 5.3 above, this is not surprising but, as discussed in Section 5.5 below, there is a linkage between preference for a particular form of provision and trust.

A key part of the research design was to gather the opinions of Saudi citizens who had always lived in the KSA, those currently living in the KSA (but who had previously lived in an OECD country) and those currently living in an OECD country.

**Table 5-31 Experience outside the KSA and Technological Factors**

<table>
<thead>
<tr>
<th>Experience outside the KSA</th>
<th>Both</th>
<th>Neither</th>
<th>Ease of Use</th>
<th>Lack of choice</th>
<th>Usefulness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always in KSA</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Now in KSA</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>currently outside</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>30</td>
</tr>
</tbody>
</table>
As this table shows, those who have lived outside the KSA but currently live there are by far the most likely sub-group (almost 45%) to cite ease of use as their decision rule. In Section 5.3 it was suggested that this group was aware of the limitations of e-government services in the KSA and that this might affect their attitude towards usage. This is explored in more detail in Section 5.4.3 below.

In Section 5.3, socio-cultural factors were divided into family influences; a perception of wider social pressures; and the influence of their own personal cultural beliefs. As was discussed in that section, none of these appear to have had a direct impact on e-government services adoption.

**Table 5-32 Family Influences and Technological Factors**

<table>
<thead>
<tr>
<th>Family Influence</th>
<th>Both</th>
<th>Neither</th>
<th>Ease of Use</th>
<th>Lack of choice</th>
<th>Usefulness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Neutral</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Some negative</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>30</td>
</tr>
</tbody>
</table>

The table above shows that those who cited their family as being supportive of e-government services use were also the most likely to emphasise ease of use as their decision criterion. It is possible that this group are looking for re-assurance and sources of support, leading them to seek the views of their family group.

In turn, it is possible to map their views about the social influences on e-government adoption to the technological factor that was dominant in their thinking.
Table 5-33 Social Influences and Technological Factors

<table>
<thead>
<tr>
<th>Influence of Social Norms</th>
<th>Technological Factor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both</td>
<td>Neither</td>
</tr>
<tr>
<td>Positive</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Ignores negative comments</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

This table indicates that there is a linkage between emphasis on ease of use and those who have sought, and believe, that broadly there is social support for e-government use. However, this is less clear than for family interests as that part of the population who indicate they have to ignore wider comments are fairly evenly split between those who stress ease of use and those who stress usefulness as their criteria. Thus of the six who cite ‘ease of use’ three indicate that they believe the social norms encourage e-government usage and two indicate the ‘ignore negative comments’. As suggested elsewhere, this supports a view that individuals in the KSA wish to use e-government services, so the barriers are more practical, resting on the nature of the systems on offer and their own ICT aptitude and experience.

Finally, the respondents were asked if their own cultural values were compatible with e-government usage, and their responses are summarised in the following table:

Table 5-34 Personal Beliefs and Technological Factors

<table>
<thead>
<tr>
<th>Influence of Personal Beliefs</th>
<th>Technological Factor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both</td>
<td>Neither</td>
</tr>
<tr>
<td>Supportive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Importance</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
As with competence in languages other than Arabic, the sample is skewed in respect of personal beliefs. Only one respondent (U16) indicated that use of e-government services conflicted with his personal beliefs, and thus took the view that any usage was due to lack of choice rather than a voluntary decision.

These various tables can be summarised into those where there is no meaningful distinction according to the particular criteria and those where personal characteristics appear to be related to the decision rule adopted. The following factors were found to have a weak or no linkage:

- Gender;
- Age (however, there is a very weak hint that the youngest age group 18-25 put less stress on usefulness than the others);
- Type of vendor;
- Importance of personal or group culture.

On the other hand, the following factors do appear to influence the decision rule adopted:

i. Family influences. Of the group of 9 respondents who indicated that their family had had an important part in their decision, five (U3, U13, U17, U21 and U23) indicated that usefulness was not an important criterion;

ii. Of those who had lived outside the KSA, a high proportion (U12, U13, U17 and U21) of those who had previously lived in an OECD country indicated that usefulness was not important;

iii. Of those who had not made use of e-commerce, five (U1, U7, U12, U21 and U23) indicated that ease of use was the important criterion;

iv. The ten with self-reported limited ICT expertise were split evenly into those who felt that usefulness was important and not important in their decision.

The eight individuals who indicated that ease of use was an important part in their decision were also likely to cite familial pressures to use, to have previously lived outside the KSA, to have made little or no use of e-commerce, and to see themselves as having no more than basic ICT competence. However, in practice, when examined more closely, these factors are distributed almost randomly across the group as shown in the Table 5-35:
Table 5-35 Characteristics of those who see Ease of Use as an important criteria

<table>
<thead>
<tr>
<th>Family Influence</th>
<th>Lived in an OECD country?</th>
<th>Used E-Commerce?</th>
<th>Level of ICT expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>None</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U3</td>
<td>Positive</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U12</td>
<td>None</td>
<td>Previously</td>
<td>No</td>
</tr>
<tr>
<td>U13</td>
<td>Positive</td>
<td>Previously</td>
<td>Yes</td>
</tr>
<tr>
<td>U17</td>
<td>Positive</td>
<td>Previously</td>
<td>Yes</td>
</tr>
<tr>
<td>U21</td>
<td>Positive</td>
<td>Previously</td>
<td>No</td>
</tr>
<tr>
<td>U23</td>
<td>Positive</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U29</td>
<td>None</td>
<td>Currently</td>
<td>Yes</td>
</tr>
</tbody>
</table>

At first sight, this table may indicate that the adoption of one or the other decision rule (ease of use or usefulness) is unrelated to differences in personal characteristics. However, when examined more carefully (see Section 5.4.3 below and Section 5.6), this initial impression cannot be sustained.

5.4.3 Decision Criteria and E-government usage

It is possible to link the decision criteria adapted to the actual usage of e-government. The first part of this analysis compares the value given to usefulness to actual use of e-government with the KSA, and the results are summarised in the following table:

Table 5-36 Usefulness and E-government Usage in KSA

<table>
<thead>
<tr>
<th>How is usefulness described</th>
<th>Level of usage of E-government in the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Critical</td>
<td>3</td>
</tr>
<tr>
<td>Important</td>
<td>2</td>
</tr>
<tr>
<td>No choice, but important</td>
<td>3</td>
</tr>
</tbody>
</table>
As this table shows, the seven who regard usefulness as critical in their decision-making are divided in terms of actual usage. Three of this group (U10, U18 and U24) report they make no use of e-government services in the KSA and two (U25, U28) make regular use. U10, for example, links the potential usefulness of e-government services in the KSA to the lack of available services as:

“For example, In KSA, the internet is a valuable solution, because I can’t go to all governmental departments ... [but] ... the service is not provided on-line”

U18 offers a very similar view that they would use the KSA services if they existed and were useful:

“No [i.e. they currently make no usage] Have they already started to offer services on-line? As I said ... it should be something clear, and I must be sure that it is trustworthy and secure, and also be sure that I will get the service I want”

In contrast, the two who make regular use describe their decision as motivated by convenience:

“Yes of course, but I am realistic as many government websites are not easy to use but I still use them as I need to as well as I try to save myself a trip to a government agency or meeting a public officer” (U25);

“When I can finish my transaction on-line and have no need to visit the government offices” (U28)

In effect, both these respondents have found a useful service, although both cite problems with ease of use, and on balance performing the transaction is easier on-line than in any other way. As discussed in Section 5.2, this is effectively a negative reason (avoidance of a method) rather than a positive endorsement of the services available. Overall, from the interviews there is strong evidence that the potential or actual usefulness of e-government services plays an important role in the decision to adopt or reject. Over two-thirds of the
interviewees identified usefulness as important, and a number of those who made no use of e-government within the KSA saw this as the reason they currently did not do so.

It is also possible to compare usage in terms of whether or not the reasons for using e-government differ within or outside the KSA and how the level of usage might relate to the importance assigned to usefulness and ease of use in Section 5.4.1. In relation to the use of e-government within the KSA there is an interesting distinction between the reasons for those not using e-government services and those making at least some use. As the following table shows, a substantial number of those who reject e-government services cite ease of use, while those making limited or full use are more likely to cite usefulness as their reason.

### Table 5-37 Reason for adopting or rejecting E-government within the KSA

<table>
<thead>
<tr>
<th>Whether Ease of Use or Usefulness is the main reason</th>
<th>Extent of Usage of E-government in the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Both</td>
<td>1</td>
</tr>
<tr>
<td>Neither</td>
<td>1</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>2</td>
</tr>
<tr>
<td>Lack of choice</td>
<td>3</td>
</tr>
<tr>
<td>Usefulness</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

One tentative interpretation of Table 5-37 is that for many, the barrier to adoption is ease of use. This can be explored in more detail by considering the answers of those who make use of e-government services outside the KSA are considered, as shown in the following table:

### Table 5-38 Reason for adopting or rejecting E-government outside the KSA

<table>
<thead>
<tr>
<th>Whether Ease of Use or Usefulness is the main reason</th>
<th>Usage of E-government outside the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>1</td>
</tr>
</tbody>
</table>
The interesting difference shown in the above table is that very few cite ease of use as their reason not to make use of e-government services outside the KSA. Instead, a larger number indicated that when they lived outside the KSA they had simply had no need to engage with e-government services. The validity of this observation can be studied by comparing those who reported making use of e-government services inside and outside the KSA. Here the focus is on the five individuals (see Table 5-38 above) who cited ease of use as their dominant criterion. Table 5-39 (below) shows how their decision varied within and outside the KSA.

Table 5-39 Difference inside and outside KSA (ease of use)

<table>
<thead>
<tr>
<th>Using E-government outside the KSA</th>
<th>Using E-government within the KSA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

This table shows that there is very little preference reversal between the two situations, with only one respondent indicating they came to a different decision according to where they lived. However, the larger part of the sample, who cited usefulness as their main technological reason, show quite a strong reversal of their decision when living in the KSA and when living in an OECD country. Four of those (U8, U10, U15, U24) who cited usefulness as their reason to reject e-government services in the KSA were content to make use of e-government services outside the KSA, as the following table shows:

Table 5-40 Difference inside and outside KSA (usefulness)

<table>
<thead>
<tr>
<th>Using E-government outside the KSA</th>
<th>Using E-government within the KSA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Usefulness</th>
<th>4</th>
<th>8</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>
Exploring the potential reasons in some more detail, gives a range of answers that offer a variety of reasons for different adoption decisions inside and outside the KSA, as:

a) “Usefulness. In KSA for example, there is a website where you can renew you driving license on-line; but in reality, it doesn’t work and you have to go and process it manually” (U8 discussing the decision not to use e-government in the KSA);

b) “Here … , people rely completely on E-government, so I do all my work on-line” (U8 explaining why they use e-government outside the KSA);

c) “Sometimes I don’t really need it, or the service is not provided on-line” (U10 explaining why they do not use e-government in the KSA);

d) “but here I use it when I want to renew my visa” (U10 explaining usage of e-government outside the KSA, as with U8 the issue is the existence of the required service);

e) “I used the cultural mission, but it was in … . Once I got back to KSA, I didn’t use any e-government services, I never went further than printing applications” (U15 summarises the reason for use, again the basic existence of services);

f) “No, I did not use it” (U24 provided no more information for rejecting e-government in the KSA but from other statements again lack of useful services seems to be the reason);

g) “For my son’s birth certificate. It was easy, and for the visa and things related to the visa. I renewed my wife’s visa on-line and my sister as well. There was no difficulty using it, honestly, and it was credible and I didn’t have to visit any government agency” (U24 explaining usage in the OECD).

What is clear from these four quotations is that the importance of usefulness as a criterion means the rejection of e-government services in the KSA is a reflection of the lack
of available services, not a rejection of the potential neither of e-government services nor of their inability to access the available services.

5.4.4 Summary

This section confirms several important assumptions. One is that usefulness and ease of use are separate criteria in the sense that they are used by different people. One reason for this may be that usefulness is the criterion adopted by those looking for a basic functioning service and ease of use is invoked by those who expect or need such a service to be easy to use. The relative importance of usefulness over ease of use is confirmed by other studies of e-government services adoption as discussed in section 2.4 and 2.5 which indicated that that usefulness is a major criterion for the adoption of e-government services rather than e-commerce. There is, however, only weak evidence that any of the personal characteristics, with the exception of previous experience (see Tables 5-28 and 5-29) directly influence which decision rule is adopted. However, it is clear that the decision rule used has a direct impact on the decision to adopt or reject e-government services in the KSA.

5.5. Transactional Factors

5.5.1 Defining the Transactional Factors

This section starts by defining the transactional factors that applied in this study. The literature on e-commerce and e-government services adoption suggests that transactional factors such as compatibility (is the on-line environment recognisable?), newness (excitement at trying something new), trust (the extent to which security of the transaction is important) and risk (the extent to which the individual is prepared to tolerate risk in carrying out e-government services or e-commerce) are all important (Al-Solbi and Al-Harbi, 2008, Venkatesh et al., 2003). However, in the interviews the transactional factors had little impact on the decision to adopt or reject e-government services. This may be because of the relatively limited services available within the KSA or because few of the available services are easy to use. Only two respondents (U14 and U18) stressed the importance of trying something new as influencing their decision to adopt e-government services, although a larger number had raised this as a variable in their earlier decision to adopt e-commerce.

On the other hand, most discussed trust and risk as playing a role in their decision, although this was not universal. In particular, there was a greater assumption of trust when dealing with e-government services than in dealing with e-commerce. As discussed below,
for many respondents trust and risk were conceptualised in terms of financial factors rather than loss or misuse of personal data. These findings influenced the construction of this section. This section concentrates almost exclusively on the issue of trust, first in the context of e-commerce and then in terms of e-government adoption. The second part relates the construction of trust and risk to the personal and technological factors already explored (Section 5.5.2).

As in Sections 5.3 and 5.4, there are some very specific Saudi aspects underpinning these statements. In particular, trust and risk are often framed in terms of actual delivery of goods (or that what is delivered matches what was ordered). In addition, for various reasons, trust is more often conceptualised in terms of possible financial loss rather than identity theft or miss-use of information by the state. For many of the respondents, there was a clear distinction between the loss of financial information, which worried them, and loss of personal information, about which they seemed to be relaxed (U2, U8, U14, U15, U19, U23). Typical comments in this regard are as follows:

a) “but I don’t consider stealing my name/address/phone number a very dangerous thing”(U8)

b) “but I don’t think it will harm a lot if the information that was stolen as it won’t lead to any loss in money, like if only the email address was stolen, and I start to receive junk mail” (U11).

c) “nothing in my personal information can harm me” (U23)

These comments indicate that trust can be said to be a primary part of the adoption decision in the context of e-commerce. In contrast, when discussing e-government, a common decision rule is to assume trust and only reconsider this when presented with evidence of a breach of a trust.

5.5.1.1 Trust and Risk in E-Commerce

The importance of trust and risk in terms of e-commerce adoption is briefly discussed, as it is an example of how different decision rules are constructed depending on the particular circumstances. In the context of e-commerce adoption, trust was quite often cited as being important. Since prior use of e-commerce (see Section 5.4) is linked to the likelihood that e-government will be adopted in turn, barriers to the use of e-commerce may have an indirect effect on the success of Yesser.
It is possible to discern three strategies being used to either gauge trust or to mitigate risk. One was to rely on personal recommendation: “I think it should already be tried by somebody else, then security, and then trust” (U6). This validation by opinion was sometimes very carefully considered, as in the following quotation: “If someone tells me not to buy something on-line, I may listen to them, but only if they have already tested that website and went into the issues. But if they just say it without trying, I won’t listen to their opinions” (U15).

A second strategy was to assume that the nature of the business (in this case banking) led to them trusting the transaction: “Security, it depended on the bank security, because my first transaction was with a bank” (U14). Finally, some sought to control the risk by limiting their exposure: “each time I ordered something; I used a prepaid credit card, because it contains only a small amount of money, and is less risk” (U15).

These different approaches can be drawn together as:

a) “The most important question that I asked myself was “how to trust that website?” is there any risk when using credit card, I also needed to be sure that the product will work when I’ll receive it” (U4);

b) “is checking that the website itself is 100% secure, for example it must be a reputed website not any website, because there are websites can to be run by hackers to steal your information” (U12)

c) “The first thing that I considered was the website’s credibility, I tried to find a reputed one because I was afraid that they will not deliver the product I want. The other thing I gave attention to is security, because I was going to give my details and my credit card number, I wasn’t very worried, but I had some concerns” (U17).

This reliance on trust built up by name recognitions has been found in other studies (Ha, 2004, Horst et al., 2007) and many of the respondents used brand reputation as the core of their decision to trust a particular transaction (U2, U5, U13, U19, U22). Other strategies included building up a feeling of trust due to either their technical internet skills or overall level of education. However, some put aside any evaluation of risk and just went ahead: “I trusted the internet blindly” (U21). To some extent, this feeling of crossing a discrete
threshold was also described by U8 and U9 as follows: “daring to start to use the Internet is essential” (U8), where the decision was influenced more by a desire to access certain goods than anything else (in other words, usefulness was more dominant than trust, a view often found in the context of e-government adoption). Others indicate how one successful, non-fraudulent transaction increased their overall confidence: “I think my trust is increasing every time I make a successful transaction” (U28). As with the adoption of e-government services, there is also a substantial difference between usage of e-commerce inside and outside the KSA.

a) “I think it’s all about trust. The first time I used the internet, I just wanted to know what it is about. In the beginning, it was only like a game, and then we began to understand how to use it, what are its advantages and disadvantages, how some websites are trustworthy while other are not….But till now, when it comes to buying on-line we still lack trust here” (U15);
b) “Yes, third party security, such as PayPal guaranteeing the transaction, this is the main condition I had that’s why I find it extremely difficult to buy things on-line while in Saudi Arabia because there is no such thing ... Trust is the most important factor I believe, then comes risk taking” (U27).

In terms of e-commerce adoption, the construction of trust as an important first step, and the strategies used to evaluate trust, are confirmed in some other studies both in a Saudi context (Sait et al., 2004) and more generally (Xia et al., 2008). The particular relevance in this case is that prior use of e-commerce (Section 4.3) is related to the capacity to use e-government services.

5.5.1.2 Trust and Risk in E-government

Trust was mentioned by almost all the respondents in relation to their decision to adopt e-government. However, unlike in e-commerce, trust was rarely seen as a dominant factor, although, as discussed in Section 5.3.7, if e-government were to be delivered by a private vendor, for some, this would lead to a reduction in trust (this is returned to in Section 5.5.2 below).
As risk was often framed in financial terms, some (e.g. U5, U15) saw e-government as more trustworthy as it involves no financial risk. Others (U11) were very fatalistic, believing that there is little they can do to prevent theft of individual or financial information. They therefore decide they may as well trust the sites they decide to use (in effect, they often then default to a view as the ‘usefulness’ of a transaction). One reason for this fatalism may be explained by a perception that any transactions with the KSA government are routinely monitored, as the following quotation indicates: “the government websites are closely watched, every email you send them is kept and recorded” (U13). Although this was a common view, it is not shared by all. For example, one interviewee made the following comment: “We usually trust our government, because it’s monarchic” (U20). On the other hand, U6 assumes there is no effective privacy when dealing with websites in the KSA and accordingly discounts this as a criterion. Other respondents offered similar explanations:

a) “I may think about two things: the first is if on-line I will get the same service I get when I go to do it myself. The second thing is the privacy of the information I will provide to the website. But I think the same problem exists even if I use the paper-based method” (U17)
b) “I can’t overcome it. Only if I face problems with the service, and in this case I will overcome it by doing the work manually” (U19)

The distinction between the perceived risks of e-government adoption and e-commerce usage was effectively summarised by U24 as:

“I know I am not going to lose anything for trying because it is a government agency, whereas I could lose money in e-commerce. I can go to a government office if something went wrong, but I cannot guarantee my rights with commercial sites ... because this is a government agency and I can reach it at any time.”

U19 went further and suggested that trust should be automatic: “it is a government website and I think security is required, and the user who will make a transaction should trust it, because it’s a government”.

Others, such as U22, saw the loss of personal data as of greater importance:
“The most important thing was the information provided ... Maybe, it could be someone who hacked the website and stole the information, I won’t blame the website for this, but the lack of technical support means there is not enough protection. Stealing my personal data is stealing my privacy: my accounts, transactions, personal details....this can bring me other problems.”

Broadly, it is possible to see four different impacts of the judgement of trust on the decision to adopt e-government services:

a) Important: In this case, a judgement of trust is a major part of the decision to adopt or reject;

b) Secondary: In this case the issue of trust is clearly secondary to a judgement about usefulness or ease of use. It may be that there is a presumption to trust a particular transaction and that this trust may be lost in the event of identity theft;

c) Assumed: The respondent indicated that because a transaction was with the state it was, by definition, trustworthy;

d) Not Mentioned: In this case, the individual gave no indication that trust played any part in the decision to accept or reject e-government services.

The interviewees can be divided into these four categories as follows:

Table 5-41 Trust and E-government

<table>
<thead>
<tr>
<th>Categorisation of Trust</th>
<th>Total</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important</td>
<td>9</td>
<td>U2, U4, U5, U6, U9, U14, U15, U16, U20</td>
</tr>
<tr>
<td>Secondary</td>
<td>11</td>
<td>U8, U10, U11, U12, U18, U21, U22, U23, U27, U29, U30</td>
</tr>
<tr>
<td>Assumed</td>
<td>3</td>
<td>U7, U13, U19</td>
</tr>
<tr>
<td>Not Important</td>
<td>5</td>
<td>U17, U24, U25, U26, U28</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>2</td>
<td>U1, U3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td></td>
</tr>
</tbody>
</table>
Sections 5.5.2 and 5.5.3 (below) examine how these categories relate to both the actual usage decision and the various personal and technological factors already explored. The remainder of this sub-section considers the various ways in which trust and risk are categorised in terms of e-government, particularly within the KSA. What is clear is that, at least among a minority of respondents, there is concern and suspicion about the introduction of e-government services in the KSA (Belanger and Hiller, 2005). For example, both U10 and U13 indicated they believed that e-government had a state security aspect. U13 expressed the concern as follows: “I think it’s for security reasons, but it is normal” (U13). This aspect of e-government implementation was discussed quite explicitly by U4 in the following exchange:

   a) “What are the factors you took in account when you used e-government for the first time?
   b) I didn’t feel comfortable while using it, worried
   c) What factor made you feel worried?
   d) I don’t know, I felt some kind of fear
   e) Fear, did you fear that government may pursue you?
   f) Yes, even if I don’t commit any mistakes, but I feel that I am monitored and I try to keep my distance from such headaches”.

A possible explanation is offered by U28:

   “In Saudi Arabia people’s information accessible to all, no privacy, in many places you need to give a copy of your ID, like booking hotels, car rental,… so privacy is not big issue here. …I am in favor of on-line services regardless of any difficulties”.

A slightly different version of the same argument is offered by U24, who takes the view that surveillance is not an important concern:

   “Would the surveillance be in my favor or against me? You mean everything is recorded? … If it is regular government transactions, it does not matter to me. But other transactions, I would have a problem with it”
Various strategies were offered to manage any perceived risks, with U10 indicating: “if the information they request is conventional like my name for example, it doesn’t matter, but if they ask for other information like my national ID, I should make sure that the website is really trustworthy”. The more information requested, the more carefully they considered if they could trust a transaction. Other strategies were adopted to control for risk, such as the following:

“When going to a government department, you really know that you are in a government department, but on-line, you are not really sure that the website you are using is really the government’s website, until you try it or see its address on brochures and such things” (U11)

Others, such as U15, acknowledge there are risks but indicate a willingness to trust a state agency: “There is some risk related to security, like losing my data. But in general it’s a government, and in all cases I will give them my information”. On the other hand, many of the respondents start from an assumption that they can trust a given e-government website (e.g. U8, U9, U10), but would then withdraw if this trust was breached (U5, U6, U9, U12, U13). In many cases, this loss of trust would be very specific to a particular website and they would continue to use other websites, as the following statements indicate:

a) “I will not use that specific website, for example, if I use the traffic department’s e-government systems and my personal data was stolen, I will never do my transactions with them on-line, I’ll do it manually; also, if the department of passports has made a good e-government system, and there were no problems when using it, in this case I’ll apply electronically” (U19);

b) “I will never deal with this website again, and I will try to submit a complaint … Will this be enough reason for you to stop using e-government?… No, only with that website” (U21)

c) “But I think if there is goodwill, and there are efforts, I won’t consider this very important, and I will forgive if it happened only once. But if the same thing persists, it is sure that I will never use it” (U22)

Other respondents believed that as usage of e-government was mandatory, they effectively discounted both trust and risk as effective factors in their decision as (U17):
i. “It was mandatory, and though I don’t think it had much impact in my case, because I would have preferred to use the Internet anyway, but the fact of it being mandatory helped many people. [asked about risk] …Like taking my national ID number, and using it to subscribe to phone service for example….

ii. No it doesn’t prevent me, but it will make me worried”

The interviews indicate that trust and risk play quite a complex role in the decision to adopt e-government within the KSA. Many respondents are aware of these issues, and some discount the consequences of identity rather than financial theft, while others are clearly worried, but see it as something they have little control over. As discussed below, a combination of lack of choice and overall usefulness of e-government transactions tends to dominate concerns about trust and risk.

This conclusion, that for e-government, trust is only invoked as a criterion after acceptance of e-government services, is important and influences the next section. In particular, those issues already shown to have some linkage to non-acceptance and/or reliance on ease of use (i.e. Sections 5.3 and 5.4) become inversely related to the importance of trust. The key to interpreting Section 5.5.2 seems to be that trust is an important, but latent, issue for a variety of reasons. Amongst these, as discussed in this section, is a feeling that any transaction with the state is a risk in the sense of loss of personal information and being monitored, but this concern is then set to one side as a fixed factor. Instead, the decision is based on perceived usefulness or ease of use as explored in Section 5.4, with trust being a latent factor that is relevant if evidence of a breach of trust is found.

5.5.2 Comparing Personal and Technological to the Transactional Factors

This section follows the pattern in Section 5.4.2 of comparing first the personal factors to the transactional factors and then the two technological factors. As in Section 5.4.2, the goal is to explore first if there appear to be any systemic relationships between the variables and, if so, use the interview data to explore if these can be seen as a direct link between the variables.
5.5.2.1 Personal Factors

As in Section 5.3 the personal factors were variously defined as follows:

a) Gender
b) Age;
c) Experience outside the KSA;
d) English as a second language;
e) Previous experience of (a) ICT and (b) E-Commerce;
f) Type of Vendor;
g) Socio-Cultural Factors.

In term of gender, there was some evidence that female respondents were more likely to see trust as more important than the male respondents (75% as opposed to 67%), as in Table 5-43 below. However, as discussed in Section 5.3, there was no evidence that gender as such was a factor that had any bearing on the value ascribed to e-government or the likelihood it would be adopted. Gender in this context is mediated by other factors, and this is explored in the remainder of this section and in more detail in Section 5.6.
Table 5-42 Gender and Transactional Factors

<table>
<thead>
<tr>
<th>Gender</th>
<th>Important</th>
<th>Secondary</th>
<th>Assumed</th>
<th>Not Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Male</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>7</td>
<td>30</td>
</tr>
</tbody>
</table>

In terms of age, there is little evidence for any clear pattern or that age, as such, influences the formation of trust around e-government, as the following table indicates:

Table 5-43 Age and Transactional Factors

<table>
<thead>
<tr>
<th>Age</th>
<th>Important</th>
<th>Secondary</th>
<th>Assumed</th>
<th>Not Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>26-35</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>36-45</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>46+</td>
<td>2</td>
<td>1</td>
<td></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>11</td>
<td>2</td>
<td>7</td>
<td>29</td>
</tr>
</tbody>
</table>

The following table shows that there is a relatively weak relationship between having lived outside the KSA and seeing trust as important. However, as with gender above, this is connected in part to prior experience of e-commerce and also the importance of ease of use as a transactional factor.
Table 5-44 Experience outside the KSA and Transactional Factors

<table>
<thead>
<tr>
<th>Location</th>
<th>Importance placed on trust</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Important</td>
</tr>
<tr>
<td>Have always lived in the KSA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Currently live in the KSA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Currently live in an OECD country</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
</tr>
</tbody>
</table>

The table above indicates that the potential linkage between gender and location in terms of the role of trust in e-government adoption is mediated by prior expertise. As the following table shows, in terms of self-reported ICT expertise, the linkage is fairly weak, and this implies that those who are competent are as likely to see trust as unimportant as to see it as important.

Table 5-45 ICT Expertise and Transactional Factors

<table>
<thead>
<tr>
<th>ICT Expertise</th>
<th>Importance placed on trust</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Important</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Limited</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
</tr>
</tbody>
</table>

However, in terms of e-commerce usage, those who have no previous experience of e-commerce are more likely to see trust as an important part of their decision to use e-government services than those who have also used e-commerce. This is clear from the following table:
Table 5-46 Prior experience of e-commerce and Transactional Factors

<table>
<thead>
<tr>
<th>Experience of E-Commerce</th>
<th>Importance placed on trust</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Important</td>
<td>Secondary</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

This table shows that seven of the respondents (78%) with no active experience of e-commerce indicated that trust was at least considered in their decision-making on the adoption of e-government services as opposed to 62% who were already using e-commerce. This supports the argument that trust is of particular importance in the initial adoption decision and then placed to one side when the individual is used to the process of either e-commerce or e-government services. In the portion of the transcripts that discuss use of e-commerce, there is evidence (as discussed above) that trust and risk were much more actively considered. For most of the respondents, usage of e-commerce (even if simply to buy services or for on-line banking) preceded any usage of e-government services. At some stage, an individual has to cross a fundamental trust barrier if they are to make any form of e-transaction.

The key issue here is less the relationship between trust and e-commerce usage and more the relationship to actual usage of e-government (see Section 5.5.3 below). As the table below makes clear, the group who had always lived in the KSA (see Table 5-47 above) were the least likely to have made prior use of e-commerce. The limited range of e-commerce within the KSA again can be shown to have an indirect effect on e-government adoption.

Table 5-47 Location and E-Commerce Usage

<table>
<thead>
<tr>
<th>Current Location</th>
<th>Usage of e-commerce</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have always lived in the KSA</td>
<td>Yes 8</td>
<td>5</td>
</tr>
<tr>
<td>Currently live in the KSA</td>
<td>Yes 6</td>
<td>3</td>
</tr>
<tr>
<td>Currently live in an OECD country</td>
<td>Yes 7</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>
As is to be expected from the discussion in Section 5.3 above, the type of vendor has an important relation to the importance ascribed to trust as a criterion, as summarised in the following table:

**Table 5-48 Prior experience of type of vendor and Transactional Factors**

<table>
<thead>
<tr>
<th>Preferred Type of Vendor</th>
<th>Importance placed on trust</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Important</td>
<td>Secondary</td>
<td>Assumed</td>
<td>Not Important</td>
<td>Total</td>
</tr>
<tr>
<td>Prefer state</td>
<td>1</td>
<td>3</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Maybe prefer contractor</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Prefer private</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>No Preference</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>7</td>
<td>30</td>
</tr>
</tbody>
</table>

Overall, this table appears to support the broad conclusion that the importance of trust in the decision is relatively neutral in relation to preference for state or private provision. On the other hand, as discussed in Section 5.3.7, for those who want state provision, lack of trust in a private vendor is particularly influential in their decision. For example U16, saw the introduction of a private provider in the following terms:

- *As I said, I dislike the involvement of a third party who is also a competitor*
- *So you think that the services should be provided by the government itself, and not by any contractor, right?*
- *Yes, not by a contractor*

U23 was even clearer that concerns about trust would lead to the rejection of e-government if it was provided by a private company:

- *Will it make a difference if you learn that the service is conducted, not by the government itself, but by a contractor with the government?*
- Something like this will make me stop, I don’t like using it, and I will hesitate before using the website.
- You prefer that the government itself provides the service.
- Yes.
- Does this make you feel there is less trust or security?
- It will lessen trust. Because when dealing with the government itself, they will have all the information related to me, but a contractor will have only limited information, and this can cause delays in doing my work, or maybe not doing it at all.

This dynamic is effectively summarised by U27 in the following exchange:

- It will have some influence; it may prevent me from using it.
- Will this make you consider trust again?
- Yes, I prefer that the government itself provides the service.
- So we can say that if the service is provided by the government, you trust it, but in case not provided by the government, trust becomes important as a factor

As in Section 5.4.2, the cultural factors that may have had an influence were separated into family views, social norms and individual beliefs. In terms of family pressure, there is no clear pattern, except that those who reported their family were negative about e-government also tended to stress the importance of trust. As discussed in Section 5.3, since these concerns were often expressed in terms of potential risk, this is not surprising. The following table summarises the interviewee’s responses in relation to familial views:
Table 5-49 Familial Views and Transactional Factors

<table>
<thead>
<tr>
<th>Importance placed on trust</th>
<th>Family Views</th>
<th>Important</th>
<th>Secondary</th>
<th>Assumed</th>
<th>Not Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Positive but some concerns</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>7</td>
<td>30</td>
</tr>
</tbody>
</table>

In terms of perceived social norms, there are several slightly contradictory findings. Those who believe that social norms encourage e-government usage (Section 5.3) are almost evenly divided in terms of the importance they place in trust. In general, as there are no clear patterns there is no evidence that a perception of social norms directly influences how trust is formulated. These findings are summaries in Table 5.51 below:

Table 5-50 Social Norms and Transactional Factors

<table>
<thead>
<tr>
<th>Importance placed on trust</th>
<th>Social Norms</th>
<th>Important</th>
<th>Secondary</th>
<th>Assumed</th>
<th>Not Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Ignores negative comments</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>No Opinion</td>
<td></td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>9</td>
<td>11</td>
<td>3</td>
<td>7</td>
<td>30</td>
</tr>
</tbody>
</table>

There is no clear pattern as to any relationship between personal beliefs and the importance allocated to trust when considering the adoption of e-government services, as the following table indicates:
Table 5-51 Personal Beliefs and Transactional Factors

<table>
<thead>
<tr>
<th>Personal Beliefs</th>
<th>Importance placed on trust</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Important</td>
<td>Secondary</td>
</tr>
<tr>
<td>Supportive</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Concerned</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>No Opinion</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

In summary, there is some evidence that the importance ascribed to trust is correlated to both gender and whether or not the individual has experience of e-government services outside the KSA. However, the analysis in Section 5.3 suggests firmly that gender, in particular, has no direct influence on actual adoption. In this case, the clear allocation of trust to a secondary element makes it hard to discern any particular links between the personal factors and how risk is conceptualised in relation to the adoption of e-government services.

5.5.2.2 Technological Factors

As explored in Section 5.5.1, in almost every case, the relationship between the transactional factor (i.e. risk) and the two technological factors is one where the technological factor is described as dominant. For example, U27 sees usefulness as the most important part in the decision but would reject e-government services in the case of a breach of trust: “I will not use it if such a thing happened”. More generally, trust is mixed with the concept of usefulness. As U18 states: “It should be something clear, and I must be sure that it is trustworthy and secure, and also be sure that I will get the service I want, I should see that there are people who already used it and that it worked properly”. U25 discounted issues of trust in favour of usefulness: “The only factor is whether there is an available service or not” and U29 made the same point in more detail as follows:

“I don’t think I had any pre-conditions as I always thought that I am dealing with a government and I believe that the government had done all it takes to provide a secured and useful service ... Of course it is affected by all that but
what matters at the end of the day is whether or not my service is fully done ... [when asked about data theft] That is something serious for me and I want come again to this website at all. I may take such issue further and even lodge a complaint to whoever is responsible.”

U30 felt they had no choice, and set only a very minimal factor to consider the issue of trust as follows:

“It has to have the official address means ending with .gov otherwise I won’t use it ... No conditions but I was forced to use it. No other way. What can I do? I don’t like it at all but I must use it. The direct motivation is that I am forced to use it. Is there a better motivation? I have no say about it. And if I opt out, I get nothing”.

In summary, the two technological factors interact with risk, as summarised in the following table:

<table>
<thead>
<tr>
<th>Adoption of Technological Factors</th>
<th>Role allocated to Trust</th>
<th>Important</th>
<th>Secondary</th>
<th>Assumed</th>
<th>Not Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both</td>
<td>Important</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Usefulness</td>
<td>Important</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11</td>
<td>11</td>
<td>3</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>Important</td>
<td>3</td>
<td></td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Lack of choice</td>
<td>Important</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Neither</td>
<td>Important</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

In consequence of the secondary role assigned to risk, no clear pattern emerges. Those who believe they had no choice about adoption of e-government services remain the most concerned about risk, reflecting the extent that this was not a personal choice. The next section considers whether trust is directly related to adoption of e-government services, while
Section 5.6 revisits this material but takes a multivariate view across all three potential dimensions.

### 5.5.3 Transactional Factors and E-government Adoption

If the categories of the importance of trust (Table 5-52 above) are compared to the level of e-government usage in the KSA, the results can be summarised in the following table:

**Table 5-53 Trust and e-government Usage in the KSA**

<table>
<thead>
<tr>
<th>How is trust described?</th>
<th>No Information search</th>
<th>Very Limited</th>
<th>Limited</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Secondary</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Assumed</td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Not Important</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>6</strong></td>
<td><strong>3</strong></td>
<td><strong>8</strong></td>
<td><strong>7</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

At first sight, this table may be contradictory, with the implication that it is those with the most concern over trust who are the most likely to actually use e-government with the linkage between trust being described as important and none of that sub-group making no use of e-government. However, in this case, the decision to adopt or reject e-government services is dominated by their view on usefulness as explored in Table 5-53, and this reflects the extent to which trust is a latent factor that they may decide is relevant in case of any future breach of trust.

Outside the KSA, if those who have always lived in the KSA are discounted, the overall attribution of trust is poorly related to the actual decision to use or reject e-government services, as shown in the next table:
Table 5-54 Trust and e-government Usage outside the KSA

<table>
<thead>
<tr>
<th>How is trust described?</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Secondary</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Assumed</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Not Important</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>

In general, trust is not particularly related to the issue of adoption outside the KSA, and usefulness is a far better explanatory variable. This is perhaps surprising, given the considerable literature (Bélanger and Carter, 2008, Belanger and Hiller, 2005, O'Hara and Shadbolt, 2008) referring to the civil liberties implications of e-government (Yildiz, 2007). The explanation may lie in the expectation of Saudi citizens of a degree of surveillance (see Section 5.5.1 above) and they may effectively discount this issue in their search for effective and useful service delivery.

5.5.5 Summary

When considering the reasons for the adoption of e-government services in the Saudi context, there is little evidence that transactional factors are especially important. This may rest on two pre-conditions. First, as discussed in Section 5.4, usefulness is very important and this leads individuals to set aside trust as a major issue. The second issue may be linked. As discussed in Section 5.5.1 above, there may already be a relatively low level of trust in the state, and against this background, trust is discounted and usefulness becomes the important issue. There is some support for this hypothesis in the broader discussions about adopting e-commerce, and in this study, both trust and risk are much more important to the decision, especially as, when framed in financial terms, the respondents believe they have something to lose. Therefore, trust is an important issue (and there is evidence for this above) but it does not directly influence the actual decision to use e-government services. The extent to which this assumption can be sustained is explored in Section 5.6.
However, there is evidence that in some particular instances, trust may play a role. First, those who wish to see e-government services provided by the state invoke trust as the reason for this choice and argue they will withdraw from e-government if it is provided by a private contractor. In most circumstances, trust is dominated by technological factors, but in certain situations, the level of concern about issues of trust is such that it becomes the critical factor.

5.6 Data Analysis and Interpretation

5.6.1 Introduction

The aim in this section is to draw together all the material presented in Sections 5.2 to 5.5 to provide a model based on the information provided by the respondents in their decision to adopt or reject e-government services. The sample is relatively small (Mahoney, 2000) and this has consequences for ensuring that any conclusions are robust and meet the tests of reliability explored in Chapter 3. In particular, there is a danger that any model-building exercise can be distorted by the apparent importance of one or two responses. This issue is returned to in Section 5.7, where the wider issue of how to generalise from these findings is discussed.

The second goal in this section is to resolve some of the apparent contradictions uncovered so far. For example, some issues that appear to have little impact in isolation become relevant when combined with other information. The argument developed in Sections 5.4 and 5.5 is less that the individual factors themselves have a direct influence on the decision to adopt e-government services and more that they have some influence on what decision strategy is adopted in making this decision. This starts to suggest that Figure 2-9 is incorrect in indicating that the personal, technological and transactional factors all directly influence the actual choice to use or reject e-government services. Rather, it appears that the personal factors influence which of the technological or transactional factors are adopted by any particular individual in any particular situation.

In this respect, Sections 5.4 and 5.5 suggest that ‘usefulness’, ‘ease of use’ and ‘trust/risk’ are criteria used in one way or another to make the decision. What is implicit, and now needs to be explored more directly, is that these are not used in the multiple criteria model assumed in conventional adoption theories such as TAM (Davis, 1986) or UTAUT (Venkatesh and Davis, 2000, Venkatesh et al., 2003). Instead, they are adopted by different
people in different situations. It is possible to set out a working assumption that explains the response of the respondents. It can now be suggested that:

“different people adopt either usefulness or ease of use as their primary decision rule when considering using e-government services. Trust and risk are used as negative criteria once the initial decision has been made. In other words, they are invoked if the requirement is breached”.

This suggestion can be used to explore the responses in more detail. In particular, can the choice between decision rules be linked back to the characteristics of the individual or linked forward to the characteristics of the decision being made? For example, trust has been found to play a different role (see Section 5.5.2.1) for e-commerce adoption than it does for e-government services. What is useful to explore further is whether this is due to the difference between e-commerce and e-government services or whether use of e-commerce simply came before engagement with e-government services? In this case, trust and risk could be said to play two slightly different roles. They form an important threshold test in the initial decision to adopt any form of e-transaction, and as a latent threshold test in the decision to continue, only being invoked in case of breach,

This suggests a reformulation of Figure 3-1. In view of the data reviewed so far, the structure is starting to become one where the technological and transactional factors are the decision rules that are available when considering e-government adoption. As in Figure 5.1 (below), the personal factors and the characteristics of the particular decision influence which of the rules is adopted by particular individuals.

5.6.2 Conceptual frame work approach

The approach adopted to allow comparison of the three factors has already been briefly discussed Chapter 3. However, it is useful to review the approach in detail. Central to the process of integrating the findings (Griffin and Ragin, 1994) from Sections 5.2 to 5.5 is to use the concept of Qualitative Comparative Analysis (Hsieh and Shannon, 2005, Romme, 1995, Rohwer, 2010). This approach has advantages when dealing with small samples (Creswell, 2008, Mahoney, 2000) and for model development from such a sample (Rohwer, 2010). The key to the approach is to develop a coding structure for each important variable for each individual.
In the present study the sample consists of the 30 respondents and from the analysis so far, the following variables were selected as the ones most likely to have an impact:

a) Previous ICT experience;
b) Previous e-commerce experience;
c) Experience outside the KSA;
d) Emphasis on usefulness;
e) Emphasis on ease of use;
f) Emphasis on risk;
g) Adoption of e-government outside the KSA;
h) Adoption of e-government inside the KSA.

The last two can be seen as the dependent variables and give two separate situations that can be studied. A third dependent (i.e. outcome) issue is the reason to decide to use e-commerce. However, this sits outside this study and is instead used as an input (independent) variable in this analysis. Each of these is given a verbal descriptor (see Table 5-56 below) and the aim is to test the potential causal chains and eliminate those for which there is no evidence (Griffin and Ragin, 1994, Romme, 1995). This is particularly useful as it allows categorisation of some situations as substitutes for others (Romme, 1995). In this case, previous ICT and previous e-commerce experience may need to be re categorised as substitutes. In other words, they are equivalents (Romme, 1995), in that either may lead to the same outcome, and the data can be simplified to use one or another.

This analysis leads to the construction of a ‘Truth-table’ (Romme, 1995) that allows exploration of the combination of factors in each instance. In the present study there are two outcomes (adoption within or outside the KSA) and a two-stage chain which can be depicted as follows:

**Figure 5-1 3 Stage Model**

![Diagram of 3 Stage Model](image-url)
The underlying factors (i.e. the personal characteristics) influence the decision criterion adopted and this in turn affects the outcome. Note that at this stage, risk is both an underlying criterion and a potential decision rule due to the difference in how it is used for e-commerce as opposed to e-government adoption, where it has a secondary role as an issue that will be invoked in certain circumstances. The goal is to effectively express the reasoning, first for which decision criterion is adopted and then for which decision is reached (Rohwer, 2010).

5.6.3 Data Analysis

5.6.3.1 Data Structuring

The first step is to draw together the descriptions already given for these eight issues in Sections 5.3 to 5.5 in a single table as follows:

Table 5-55 Raw Data on Key Variables

<table>
<thead>
<tr>
<th>User ID</th>
<th>ICT expertise</th>
<th>Have they always lived in KSA?</th>
<th>Usage of E-Commerce</th>
<th>Usefulness</th>
<th>Ease of Use</th>
<th>Trust</th>
<th>Use E-Gov outside KSA (Simplified)</th>
<th>Use E-Gov in KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>No</td>
<td>always</td>
<td>Unimportant</td>
<td>Unimportant</td>
<td>Not Mentioned</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U2</td>
<td>Yes</td>
<td>now</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Limited</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U3</td>
<td>Limited</td>
<td>always</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U4</td>
<td>Yes</td>
<td>always</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U5</td>
<td>Yes</td>
<td>always</td>
<td>Important</td>
<td>Important</td>
<td>Important</td>
<td>Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U6</td>
<td>Yes</td>
<td>always</td>
<td>Important</td>
<td>Important</td>
<td>Important</td>
<td>Very Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U7</td>
<td>Limited</td>
<td>always</td>
<td>No</td>
<td>Unimportant</td>
<td>Unimportant</td>
<td>Assumed</td>
<td>Very Limited</td>
<td>Yes</td>
</tr>
<tr>
<td>U8</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Unimportant</td>
<td>Secondary</td>
<td>Information search</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U9</td>
<td>Limited</td>
<td>always</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Very Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U10</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Secondary</td>
<td>Information search</td>
<td>No</td>
</tr>
<tr>
<td>U11</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Secondary</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U12</td>
<td>Limited</td>
<td>always</td>
<td>No</td>
<td>Unimportant</td>
<td>Important</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>U13</td>
<td>Yes</td>
<td>now</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Assumed</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>U14</td>
<td>Yes</td>
<td>always</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U15</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Information search</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U16</td>
<td>Limited</td>
<td>always</td>
<td>Important</td>
<td>Unimportant</td>
<td>Important</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U17</td>
<td>Yes</td>
<td>now</td>
<td>Important</td>
<td>Important</td>
<td>Not Important</td>
<td>Information search</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U18</td>
<td>Limited</td>
<td>now</td>
<td>Important</td>
<td>Unimportant</td>
<td>Secondary</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U19</td>
<td>Yes</td>
<td>now</td>
<td>Important</td>
<td>Unimportant</td>
<td>Assumed</td>
<td>Very Limited</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>U20</td>
<td>Limited</td>
<td>now</td>
<td>Important</td>
<td>Important</td>
<td>Important</td>
<td>Secondary</td>
<td>Limited</td>
<td>Yes</td>
</tr>
<tr>
<td>U21</td>
<td>Limited</td>
<td>now</td>
<td>Important</td>
<td>Important</td>
<td>Important</td>
<td>Secondary</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U22</td>
<td>Limited</td>
<td>always</td>
<td>Important</td>
<td>Important</td>
<td>Important</td>
<td>Secondary</td>
<td>Limited</td>
<td>Yes</td>
</tr>
<tr>
<td>U23</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Not Important</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U24</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Important</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>U25</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Unimportant</td>
<td>Not Important</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U26</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Not Important</td>
<td>Very Limited</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>U27</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Unimportant</td>
<td>Secondary</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>U28</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Unimportant</td>
<td>Not Important</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>U29</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Secondary</td>
<td>Limited</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>U30</td>
<td>Yes</td>
<td>currently outside</td>
<td>Important</td>
<td>Important</td>
<td>Secondary</td>
<td>Very Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
This table re-uses the coding structures set out in Sections 5.3 to 5.5 and draws them together in a single table. For example, ICT expertise is on a three-point scale (No, Limited, Yes) and both Usefulness and Ease of Use are described as either Important or Unimportant. The next stage (Griffin and Ragin, 1994) is to recast these verbal descriptions as numerical scales and it is important to remember that such numbers are ordinal (i.e. they describe rank order) not cardinal (numbers are used purely to simplify the visual process, not as any measure of inherent value). This step is not essential (Romme, 1995) but helps to clarify relationships that are otherwise obscured by the text, with the goal that the weakest (or negative) outcome is coded as 0 if the scale makes that appropriate. The various categories in Table 5-56 were converted as follows:

**Table 5-56 Converting Verbal to Numeric scales**

<table>
<thead>
<tr>
<th>Category</th>
<th>Verbal Scale</th>
<th>Numeric Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT Expertise</td>
<td>No-Limited-Yes</td>
<td>0-1-2</td>
</tr>
<tr>
<td>Location</td>
<td>Always-Now-Currently Outside</td>
<td>0-1-2</td>
</tr>
<tr>
<td>Usage of e-commerce</td>
<td>No-Yes</td>
<td>0-1</td>
</tr>
<tr>
<td>Usefulness</td>
<td>Unimportant-Important</td>
<td>0-1</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>Unimportant-Important</td>
<td>0-1</td>
</tr>
<tr>
<td>Trust</td>
<td>Not Important-Assumed-Secondary-Important</td>
<td>0-1-2-3</td>
</tr>
<tr>
<td>Use e-gov in KSA</td>
<td>No-Information Search-Very Limited-Limited-Yes</td>
<td>0-1-2-3-4</td>
</tr>
<tr>
<td>Use e-gov in KSA (simplified)</td>
<td>No-Yes</td>
<td>0-1</td>
</tr>
<tr>
<td>Use e-gov outside the KSA</td>
<td>No-Yes</td>
<td>0-1</td>
</tr>
</tbody>
</table>

Applying this to Table 5-56 in turn produces the following table:

**Table 5-57 Recoded basic data**

<table>
<thead>
<tr>
<th>User ID</th>
<th>ICT expertise</th>
<th>Have they always lived in KSA?</th>
<th>Usage of E-Commerce</th>
<th>Usefulness</th>
<th>Ease of Use</th>
<th>Trust</th>
<th>Level of usage of e-government in KSA</th>
<th>Usage of e-gov outside the KSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>U3</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U4</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>U5</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>U6</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
Table 5-58 Recoded basic data (continued)

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>U8</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>U9</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>U10</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>U11</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>U12</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>U13</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>U14</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>U15</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>U16</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>U17</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>U18</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>U19</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>U20</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>U21</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>U22</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>U23</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>U24</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U25</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>U26</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>U27</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>U28</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>U29</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>U30</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

With this table it is now possible to commence the process of describing the links between the three stages of criteria, decision rule adopted and decision outcome.
5.6.3.2 Link between Personal characteristics and Decision Criteria adoption

The first stage is to use Table 5-58 to describe the antecedents (i.e. personal factors) of those who adopted usefulness as their decision rule. In effect the number of individuals who share a set of variables across the three criteria can be reported as:

Table 5-59 Preconditions for Adopting Usefulness

<table>
<thead>
<tr>
<th>Descriptive sequence</th>
<th>Number of matches</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>101</td>
<td>2</td>
</tr>
<tr>
<td>110</td>
<td>1</td>
</tr>
<tr>
<td>111</td>
<td>1</td>
</tr>
<tr>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td>201</td>
<td>5</td>
</tr>
<tr>
<td>211</td>
<td>3</td>
</tr>
<tr>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>221</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 5-59 shows that, for one-third of the relevant responses, usefulness is related to a reasonable level of ICT expertise (2), living outside the KSA (2) and previous use of e-commerce (1). These are coded as 221 in Table 5-59. The same combination of ICT expertise (2) and previous use of e-commerce (1) is found for five of the respondents who have never lived outside the KSA (0). These are coded as 201 in Table 5-59. The underlying combination of ICT expertise and experience of e-commerce is also found in those who have returned to the KSA (211). In effect, the data strongly suggest that those who rely on ‘Usefulness’ as their basic decision criterion are likely to have some degree of ICT competence and to have made previous use of e-commerce.

When the same process is applied to ease of use, the result is as follows:
Table 5-60 Preconditions for Adoption of Ease of Use

<table>
<thead>
<tr>
<th>Descriptive sequence</th>
<th>Number of matches</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>101</td>
<td>2</td>
</tr>
<tr>
<td>110</td>
<td>2</td>
</tr>
<tr>
<td>111</td>
<td>2</td>
</tr>
<tr>
<td>200</td>
<td>1</td>
</tr>
<tr>
<td>201</td>
<td>1</td>
</tr>
<tr>
<td>211</td>
<td>1</td>
</tr>
<tr>
<td>220</td>
<td>1</td>
</tr>
<tr>
<td>221</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
</tr>
</tbody>
</table>

In this case, the results are more mixed, but a common combination is of limited ICT aptitude (1) combined with currently living inside the KSA (0 or 1) and a lower likelihood of previous use of e-commerce (0). However, unlike for usefulness, there is no dominant sequence, as some of those raising ease of use are also self-reporting competence in ICT.

Trust is more complex, as it has been described in a wider variety of ways. The antecedent (personal) elements for each judgement are summarised in the following table:

Table 5-61 Trust and antecedents

<table>
<thead>
<tr>
<th>How is trust described?</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Number of matches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive Sequence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>101</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>110</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>111</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>200</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>201</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>211</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>220</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>221</td>
<td>2</td>
<td>5</td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>
This table is slightly more complex as there are four trust ‘states’ ranging from unimportant (0) to important (3). For those who place little or no emphasis on trust as a criterion are likely to have a high degree of ICT competence (2), to have lived outside the KSA at some stage (1,2) and to have made previous use of e-commerce (1). Those who make the assumption they can trust e-government have similar characteristics of ICT competence (2), experience outside the KSA (1) and previous use of e-commerce (1). Those, to whom trust was an important but secondary value, clearly divide into two separate groups. One is those with limited ICT skills (1), who have lived outside the KSA (1) but have made no use of e-commerce (0). The second group are competent with ICT (2), live outside the KSA (2) and have previous experience of e-commerce. Those who see trust as a particularly important issue are a diverse group and the only weakly coherent group is those with ICT competence (2), who have always lived in the KSA (0) and have made previous use of ICT (1). This group may know enough about ICT processes to understand the likely risks they are taking.

On the basis of this analysis, there are some links between personal characteristics and the decision rule adopted. Those who rely on usefulness are more likely to see themselves as more competent in the use of ICT than those who rely on ease of use. In contrast, those relying on usefulness are more likely to have had previous experience of e-commerce. This suggests that the choice between the two decision criteria is linked to ICT aptitude and previous use of the internet to conduct commercial transactions.

However, it is not possible to draw such conclusions about the antecedents to trust. There is a weak linkage between lower levels of ICT competence (1) and placing a higher premium on trust. Overall, since trust was raised, in terms of e-government, as a secondary rule to be invoked in a negative situation, it is clear that there is no structured reason for this formulation. The latent nature of trust in the decision to use e-government services in the KSA may mean that many respondents, despite prompting, did not fully discuss the issue in their interviews. It is, however, possible from these results to now compare the decision criteria adopted with the actual decision to adopt or reject e-government services, both within and outside the KSA.
5.6.3.3 Linkage between Decision Rule adopted and actual Decision

For this stage of the analysis, trust in Table 5-61 above has been simplified and the categories of ‘not important’ and ‘assumed’ are conflated and coded as ‘0’ with ‘secondary’ recoded as ‘1’ and ‘important’ as ‘2’. The first stage is to consider if there is any linkage between the decision criteria and the more complex description of e-government adoption within the KSA. The results are shown in the following table:

Table 5-62 Linkage between decision criteria and adoption of e-government in the KSA

<table>
<thead>
<tr>
<th>Mixture of decision rules</th>
<th>Level of Usage of E-government in the KSA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>1 1</td>
<td>2</td>
</tr>
<tr>
<td>010</td>
<td>1 1</td>
<td>3</td>
</tr>
<tr>
<td>011</td>
<td>1 1 1</td>
<td>3</td>
</tr>
<tr>
<td>100</td>
<td>1 2 2</td>
<td>5</td>
</tr>
<tr>
<td>101</td>
<td>2 2 1</td>
<td>5</td>
</tr>
<tr>
<td>102</td>
<td>2 2 4</td>
<td>10</td>
</tr>
<tr>
<td>111</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>6 3 8 7 6 30</td>
<td></td>
</tr>
</tbody>
</table>

This table broadly confirms the conclusions in Sections 5.4 and 5.5. Different members of the sample group use a single decision rule and trust/risk is only invoked when it is believed this has been violated. An analysis of the findings, ignoring those who indicated no preference (i.e. are coded 000), indicates the following:

a) Those who stress ease of use over usefulness (i.e. 010 and 011) are more likely (three out of eight) to have rejected the use of e-government in the KSA;
b) Those who stress usefulness over ease of use (i.e. 100, 101 and 102) are more likely to make at least limited use of e-government within the KSA. This characteristic is shared with those respondents who indicated they made use of both decision rules (111);
c) Trust/Risk either on its own, or in combination with other factors, is not related to the level of adoption (which is consistent with the finding in Section 5.5 that it is a rule to be invoked in case of failure).

If the decision to adopt outside the KSA is considered, and those who have always lived in the KSA are excluded, the relationship is shown in the following table:

**Table 5-63 Decision Criteria adopted and e-government usage outside the KSA**

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Usage of E-government outside the KSA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>010</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>101</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>102</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>111</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
<td>12</td>
</tr>
</tbody>
</table>

a) Again, the relative importance ascribed to trust and risk does not influence the basic decision to use e-government;

b) Outside the KSA, those who stress ease of use (010, 011) or are indifferent (111) are more likely to use e-government than those who stress usefulness. In this case four out of the five with an emphasis on ease of use do make use of e-government.

As discussed in Section 5.5, for that segment of the sample who emphasise ease of use, it is feasible to argue that the current standard of e-government provision in the KSA is a barrier to usage.
5.6.3.4 Impact of Lack of Choice in E-government Usage

Section 2.5 briefly discussed the likely consequences of lack of choice on e-government usage. In the present research, the suggestion was that usage would be made, but online a limited manner due to a lack of enthusiasm, if the individual felt compelled to do so. Table 5-37 above suggests that those who cite a lack of choice all make some use of e-government (which is to be expected) but that three make limited use for the particular transaction they are carrying out and have no other engagement with e-government services. However, as suggested in Table 5-53, those who indicate lack of choice as their reason to use e-government services, place a high premium on issues connected with trust. This may imply that having been effectively forced to use e-government services, they have responded by being particularly concerned about the possibility of trust and risk as opposed to those who have made a voluntary choice to either use or reject e-government services.

This seems to offer some support for the discussion in that lack of choice has led to cautious and limited usage of e-government services. However, few of the interviewees suggested that they had used e-government services out of compulsion, which makes any such conclusion very tentative. Equally, at present, there is no evidence that the Saudi state possesses the range of e-government services that would make widespread compulsion a viable approach, nor that the Saudi population as a whole possesses the ICT skills needed. Both of these themes are explored in more detail in Chapter 5.

5.7 An in-group model of e-government adoption

Using the information provided in Sections 5.2 to 5.6 it is possible to develop a model that describes the decision-making of the respondents in terms of e-government within the KSA. It is to note the very specific circumstances that apply within Saudi Arabia and how these may influence acceptance. The dominant contextual issue (see Section 5.2) is the extent to which Saudi citizens see e-government as a desirable means to reduce direct contact with the state bureaucracy and to ensure that public administration becomes rule-based and impartial. This underlying willingness to use e-government services may be related, in turn, to the relatively low level of importance ascribed to trust and risk (see Sections 5.4 and 5.6). This is especially important as the sample group was alert to these issues in the context of e-commerce adoption and usage (see Section 5.5).

The second consistent finding is that usefulness and ease of use were the main decision strategies adopted to decide whether or not to use e-government services. However,
unlike in TAM and UTAUT (Davis, 1986, Venkatesh et al., 2003), these are not used in some form of combination; rather, they are adopted by different people. Section 5.6.3.1 indicates that those relying on usefulness are more likely to have reported a degree of ICT aptitude and to have made previous use of e-commerce. To a lesser extent, those stressing ease of use are likely to be less competent with ICT and less likely to have used e-commerce. This may imply that ease of use is the rule used when first engaging with an e-transaction (either e-commerce or e-government services) or is more likely to be relevant when there is a mismatch between an individual’s ICT competence and the complexity of the website (Gefen and Straub, 2000). There is evidence for this view that those who stress ‘ease of use’ did make use of well-designed websites outside the KSA. This in turn (see Chapter 6 below) has implications for the design and future of Yesser (Al-Solbi and Al-Harbi, 2008).

With this information, is it possible to return to the three stages conceptual model in Figure 2-9 of individual, technological and transactional factors all influencing the decision to use or reject e-government services. Within the sample, and in this particular instance, the key steps are as follows:

a) For those who lack either ICT competence or previous experience with e-commerce (individual factors), the decision to use e-government services will rest on ease of use as the technological factor. Those with these preconditions will base their decision on the usefulness of the service on offer;

b) The individual factors appear to influence which technological factor is used as the dominant decision criterion in deciding to use or reject e-government services;

c) The only transactional factor identified for e-government adoption was risk/trust and this forms a separate decision criterion. It is discounted (i.e. it is assumed that e-government can be trusted) but will be invoked in case of breach of this assumption.

This argument can be summarised in the following figure:
Figure 5-2 Individual, Technological and Transactional factors

Figure 5-2 represents a significant refinement of the model originally presented in Figure 2-9. In this case, the model now proposed is that the individual factors (in this instance ICT competence and previous experience of e-commerce) influence the decision criteria adopted to actually make the decision. Again, in this instance, trust is a secondary issue (to be invoked in case of evidence it has been breached) and instead the respondents indicated they used one of ‘ease of use’ or ‘usefulness’. In turn, this decision rule was then used to decide whether or not to adopt e-government services within the KSA.

The critical step in this formulation is the evidence that individual decision makers select a single criteria on which to base their decision and that this selection can be related to their individual characteristics. The reliance on a single dominant decision criterion (Montgomery, 2006) that will vary according to the individual and the situation (Kerstholt and Raaijmakers, 1997) is consistent with the theories of individual decision-making discussed in Chapter 2. It is, however, at variance with many studies of e-government adoption (Hung et al., 2006, Lean et al., 2009, Titah and Barki, 2006, Venkatesh et al., 2003, Wangpipatwong et al., 2008) that suggest a long list of factors may be involved. Equally those studies, relying on regression analysis, tend to identify the factors relevant for the whole sample and miss variations between individuals.

On the basis of Sections 5.3 to 5.5, it would be possible to draw up a list of a range of factors that are relevant, either individually or in combination. There is evidence that age, gender, ICT aptitude, previous use of e-commerce, familial pressures, usefulness, ease of use and trust all have some relationship to the level of usage of e-government services within the
KSA. However, when, as in Section 5.4 and in this section, the data is explored in combination but with a focus on the variations between individuals, two separate decision criteria were chosen according to individual factors. What now needs to be addressed is whether it is possible to generalise from these findings to build a more general conceptual model (Creswell, 2008, Yin, 2009).

5.8 Conclusions

This section draws on the findings in Section 5.7, and uses the concept of Pattern Matching (Yin, 2009) to explore the extent to which the findings can be generalised to a wider conceptual structure. Yin describes this process as seeking “to explain a phenomenon is to stipulate a set of causal links about it. These causal links are similar to the independent variables in the previously described use of rival explanations. In most studies, the links may be complex and difficult to measure in any precise manner” (Yin, 1994, p.110). He then goes on to note that this is usually laid out as a narrative, that is iterative and attempts to allow the reader to understand what assumptions have been made about the raw data and how the proposed links are being structured. Of importance Yin and other researchers who focus on qualitative case study methods (George and Bennett, 2005, Gerring, 2007, Yin, 2009) argue that usage of the existing literature provides a vital scaffold that allows generalising from the evidence uncovered in a single case study design.

In this respect, the model in Section 5.7 can be said to have three main elements that can, in turn, be studied against the wider literature and used to construct a narrative that seeks to explain the observations:

i. The adoption of e-government is driven by one of two separate decision criteria: how ‘useful’ is the system on offer? or how ‘easy to use’ is that system?;

ii. Which criterion is adopted, depends on ICT competence and previous experience with e-commerce (or more widely any e-transaction). Those who are both competent and have previous experience tend to rely on ‘usefulness’ as their decision rule, otherwise they use ‘ease of use’. Linked to this is a suggestion that ‘ease of use’ is the decision criterion applied in first use situations and ‘usefulness’ informs the decision to use a particular service
once the individual has started to use e-commerce/e-government in other situations;

iii. Risk and Trust are not part of the adoption decision; rather they are rules to be invoked for e-government in case of breach. However, risk and trust are part of the rules used when considering whether or not to use e-commerce.

These assumptions can be compared to the model set out in Figure 2-9 which shows that there are three broad factors: the individual, the technology and the particular transaction that influence the usage of e-government services. The following questions were then posed:

a) if within the three broad categories there is evidence that any of the specific aspects dominate and if, in turn, between the three broad categories, does one dominate the decision to adopt or reject e-government?

b) If this assumption can be supported, a secondary question is then to explore if there are differences between the individuals and, if so, can these differences be related to either the nature of the e-government transaction being studied or to differences in those individuals.

Within the sample, the evidence is that the technological factor is the dominant issue and that the choice of technological factor varies according to individual characteristics. These technological factors give different outcomes in different situations (e-government adoption within and outside the KSA). A different combination of factors is used to decide whether or not to use e-commerce. In seeking to generalise from these specific findings, three different options exist (Yin, 2009):

i. Are the findings supported by the wider literature on decision-making?

ii. Are the findings supported by the wider literature on e-government adoption in non-OECD countries?

iii. Are the findings supported by the wider literature on models of e-government adoption?
5.8.1 Relationship to the literature on decision making

One aspect where this study has sought to extend the existing research on e-government adoption (see Chapter 6 below) is by making use of the wider decision-making literature. In so far as most existing studies make use of this approach, they tend to use Ajzen’s (Ajzen, 1991) Theory of Planned Behaviour. As discussed in Chapter 2, one criticism of this theory is the way it conflates the intention to do something with actually doing something. In the present study all but two of the sample can be described as enthusiastic for e-government (see Table 5-6 above). However, those who were not supportive do actually make use of e-government services and six of those who are supportive make no use. Underlying attitudes and actual actions lead to different outcomes, in contradiction to Ajzen’s (1991) theory.

On the other hand, there is evidence that decision-makers frame the situation so that one dominant criterion is applied (Montgomery, 2006, Simon et al., 2006). This dominant criterion varies according to the characteristics of the individual and the type of the decision being made (Beach, 1990, Kerstholt and Raaijmakers, 1997, Tversky et al., 2006). In addition, there is evidence that the decision rule varies between first use and that applied when considering on-going usage (Beach, 1990). Overall, as the model of decision-making revealed by the respondents is consistent with the literature, it can be used as a basis for generalisation.

5.8.2 Relationship to the literature on e-government adoption outside the OECD

A number of other case studies of citizen adoption of e-government services outside the OECD were considered in Chapter two. These included the adoption of on-line payment of taxes in Taiwan (Hung et al., 2006), the adoption of e-government services in Malaysia (Lean et al., 2009) and the decision to continue to use e-government services in Thailand (Wangpipatwong et al., 2008). Some of the findings reported in this chapter confirm these earlier findings but others contradict the existing studies. For example, Hung et al (2006) confirm the suggestion that ease of use is important for those with little or no previous experience, in particular that those who opted not to file their tax returns on-line often cited ease of use as their reason. Lean et al (2009) also identified ease of use as being important in the initial adoption decision. Wangpipatwong et al (2008) suggest that ease of use is replaced by usefulness as the main criterion when considering whether to continue to use e-
government services and identify the level of ICT expertise as an important variable. This was confirmed in an earlier study published by the OECD (OECD, 2002).

On the other hand, both Hung et al (2006) and Lean et al (2009) point to the importance of friends, relatives and social pressure in the decision to use e-government services. Another area where the findings in this study (Section 5.3.3) differ is on the importance of gender as a characteristic. Other research in the KSA (Al-Otaibi and Al-Zahrani, 2009) has suggested that women are more likely to use e-government services to avoid social restrictions, in contrast to the findings of the present study (see Table 5-14 above).

When the literature on e-government services adoption and implementation outside the OECD is considered (Abdullah et al., 2008, Al-Fakhri et al., 2008, Avgerou, 2008, Jaeger and Thompson, 2003, Ndou, 2004, Yildiz, 2007) the constraints often identified are confirmed in the present study (see especially Sections 5.2.4 and 5.2.5 above). In particular, weaknesses in the underlying system of public administration hamper e-government implementation and affect the type of services made available.

There is evidence that some of the findings in the present research are not a-typical and thus form the basis for generalisation. The type of e-government found is predicted in the literature on implementation outside the OECD and there is evidence for the suggestion that usefulness and ease of use are used at different stages as an individual becomes used to e-commerce/e-government. On the other hand, there is evidence that social and familial influences are more important than suggested in the present study and that women are more, not less, likely to adopt e-government services within the KSA.

In terms of the social and familial influences, there is some evidence in Tables 5-21; 5-21 and 5-22 that the influence did relate to actual usage but the interview transcripts contained no evidence that this was an important reason (Table 5-10). Since the two studies that strongly suggested such a link (Hung et al., 2006, Lean et al., 2009) were based on questionnaires not interviews, the explanation may lie in their subsequent inability to explore if there was any underlying reason for the correlation.

5.8.3 Relationship to the literature on e-government adoption

The main characteristic of the formal existing models of e-government adoption (Section 2.3) is that they identify a list of factors. In TAM these are ease of use and usefulness (Davis, 1986) and in the more complex UTAUT approach these are expanded to
include factors that are related to the individual, the technology and the individual transaction (Venkatesh et al., 2003). The research reported in this chapter has confirmed the importance of some of these factors and suggested a refinement to Figure 2-9 to suggest that the individual factors inform the decision criteria used, in turn, to decide whether or not to use e-government services.

In several critical ways, the present study passes the tests set by pattern matching (section 4.4) in terms of validity of model building. In particular, it suggests that the factors influencing the decision and how that decision is being made are consistent with expectations. The type of e-government on offer and its problems are also consistent with the literature on implementation outside the OECD. Where it differs is in the finding that women are less likely to use e-government in the KSA than men, and the importance ascribed to social and familial pressures. The latter may be explained by the difference between a correlation (which was found within the group of respondents) without any evidence in the interviews to how this influenced their actions.

In the process of generalising from this research (see Section 5.3 below) there is one important precondition. Before this research can be generalised it is important that key issues discussed in Section 5.2.4 are replicated. These conclusions are valid with certain preconditions and, of these, perhaps the most important is that there is a widespread desire to use e-government services, even if part of the population is unable to do so at the moment (section 2.5.2). That single factor seems to explain the willingness of so many Saudi citizens to use e-government services, despite problems with the design of the systems. Indeed with this precondition, usefulness trumps ease of use as the dominant decision criterion, but ease of use forms a barrier to those seeking to use e-government services for the first time.
CHAPTER 6

6. DISCUSSION

6.1 Introduction

This section summarises the main themes of this thesis, in particular how the model of e-government adoption explored in the literature review has been refined through the empirical work. A secondary aim in this section is to offer an evaluation of the Yesser e-government initiative. Chapter Five has summarised the main themes that arose from the empirical work so an important aim in this chapter is to discuss the implications for the model of e-government adoption (Figures 3-1 and 5-2 in particular) and the extent this thesis has answered the research questions set out in chapter three. In turn, Chapter Seven will discuss strengths and weaknesses in the approach taken and areas to follow up in subsequent research.

In interpreting the results presented in chapter five it is important to take account of the very specific circumstances surrounding e-government provision in the KSA (Avgou, 2008). Important amongst these are the relatively recent adoption of the internet in Saudi Arabia, the low take-up of domestic e-commerce and the extent to which most of the respondents saw e-government as a desirable means to avoid some of the problems of dealing with the bureaucracy in the Kingdom. These could be argued to create a complex mix where people want to use e-government services but the technological skills and wider expertise are often lacking both among the sample interviewed and the wider population. The latter point is stressed in much of the existing literature (Al-Khouri and Bal, 2006, Al-Otaibi and Al-Zahrani, 2009, Betrah, 2010, Communications and Information Technology Commission, 2005, Kostopoulos, 2004) on the adoption of e-commerce and e-government services in the KSA.

Again both the empirical work and the literature indicates that a critical problem is that using e-government websites in the KSA is not easy (although Table 1-1 suggests this is improving in some areas). A population with relatively low ICT skills (and the sample was heavily skewed to the well-educated and those who had lived in OECD countries) are presented with poorly designed and implemented websites. Table 1-1 covered the current range of e-government websites in the KSA after the field work was complete and this is still
partial but indicates some extension of coverage compared to that found in the interviews (section 5.2.2). Subsequent to the conclusion of this research, the KSA has announced that the Yesser implementation and development phase will be extended to 2016 (Kingdom of Saudi Arabia, 2012). In itself, this can be seen as a tacit acknowledgement that the original goals were not met in the timeframe in which this research was conducted.

6.2 Models of E-Government Adoption

The focus in this study has been on citizen adoption of e-government services, not on the reasons why the state may choose to adopt such an approach. The key finding is to confirm the validity of the type of adoption model theorised within UTAUT (Hung et al., 2006, Titah and Barki, 2006). UTAUT, as a theoretical construct, captures the most likely set of determinants of e-government service adoption but, as conventionally structured, is less effective at indicating which of these factors will be important at particular instances. Thus, various authors (Venkatesh and Davis, 2000, Venkatesh et al., 2003, Venkatesh et al., 2011) working with UTAUT have suggested a range of factors that may influence adoption. For the purpose of this study, these have been aggregated (Table 2-6) into three broad categories of:

a) Personal factors such as age, gender, ICT expertise, familial and social norms;
b) Technological factors related to the service being provided such as how easy it is to use or how useful it is perceived to be; and,
c) Transactional factors related to the particular instance such as risk, trust, compatibility and newness.

Figure 3-1 suggested that all three of these directly influence the decision to adopt. However, Figure 5-1 in Chapter Five suggests a slightly different formulation where personal factors influence which of the two technological factors forms the primary decision criterion (i.e. does the individual make their adoption decision on the basis of ‘ease of use’ of the services on offer, or the ‘usefulness’ of those services?). In the particular situation of e-government adoption in the KSA, it is suggested that the transactional factors (in particular risk and trust) are of secondary value, since they form only a very limited part of the adoption criteria (there was a presumption of trust), but would be invoked in case of evidence that this trust had been breached. However, as was discussed in section 5.5.1, when adoption of e-
commerce was considered, trust and risk were much more prevalent in the decision making process. In this, a major contribution of this research is that by taking an approach derived from the decision making research, it was possible to elaborate the structure of UTAUT. One criticism of the standard structure is that it offers a list of potential factors that may influence take up but lacks a theoretical explanation as to how this may happen or why different studies find that different factors are important. At the least, this thesis offers a theoretical justification for such variations and a means to explore how such variations in relevant criteria in turn links to different decisions about e-government usage.

The balance of this section links the findings from the literature review (Chapter Two) to those from the interviews (Chapter Five) and the conceptual model originally offered in Chapter Three. Overall, the literature review provided:

a) A definition of what is meant by e-government in the context of the KSA;
b) An idea of the various factors that influence citizen adoption of e-government;
c) A possible expectation that what might be found was that one of these factors was dominant but that this might vary between individuals and situations;
d) A weak expectation that this variance might in some way relate to the basic decision to adopt e-government at all, as opposed to the particular decision to adopt a given service.

These insights are developed below to see if the assumptions can be made more robust and if the findings from the literature review and empirical work confirm each other or are contradictory.

6.2.1 Definitions and Criteria

One key issue explored in detail in the literature review is how to define and bound the concept of e-government (Yildiz, 2007). This can be done by looking at the nature of the participants (state, citizen, business), the transaction (information provision, simple service provision, integrated provision) or the reason for adoption (state convenience or citizen-centric). In the KSA, some services that would elsewhere form part of e-commerce are state-provided, in particular the banking system (SAMA, 2008), the commercial sale of religious visas (Al Alamia, 2010) and job search for Saudi citizens (Ministry of Labour, 2009). This
led to a practical definition being adopted for the purposes of the present study that e-government is the provision of information and/or services by the state to Saudi citizens.

Having clarified what is meant by e-government services, the literature review then suggested there were two fundamental preconditions for the introduction of e-government (Yildiz, 2007): human capital and technological capacity. The interviewees indicated that weaknesses in both respects restrict the provision and adoption of e-government services in the KSA. The human capital issues were important in various ways – many respondents suggested (see Section 5.1) that the current provision in KSA is flawed due to weaknesses in the Saudi state administration (Betrah, 2010, Kostopoulos, 2004). A barrier for many users in other non-OECD countries (Das et al., 2009, Kim, 2007, Ndou, 2004, Weerakkody et al., 2007, Yildiz, 2007) is their own limited ICT skills and this was found in the empirical work where those with the least confidence in their ICT knowledge were the least likely to use e-government services in the KSA.

Technology plays a role in several ways, with the weaknesses in the ICT infrastructure forming one barrier to use as almost all the respondents reported slow access speeds and frequent problems with disconnection and the quality of website design is another barrier.

6.2.2 Implementation by the State

The reasons why the Saudi state has introduced e-government are not directly explored in this study, although in Section 5.2, the respondents offered various perspectives as to why they believed it was being developed. Chapter Two suggested that the nature of the state and the underlying reason for e-government implementation (Al-Sebie and Irani, 2005, Jaeger and Thompson, 2003, Yildiz, 2007) may impact on citizen adoption. Four such issues were suggested as:

i. Whether the state can be described as authoritarian or democratic?
ii. Whether the public administration culture is bureaucratic or orientated to service delivery?
iii. Whether the motive for the move to e-government is to serve the interests of the state or to deliver improved services to the citizens?
iv. Whether e-government is seen as information provision, simple service delivery or a fully developed approach?
From the literature review, it is clear that Yesser was designed to make the lives of Saudi citizens easier and to improve the efficiency of public administration. However, the state in KSA can be described as authoritarian, bureaucratic and, at the moment, e-government in the KSA can be best described as a combination of information provision and simple service delivery (Table 1-1). It is not clear if these factors directly led to the relatively poor standard of e-government services on offer (see Section 5.3 below), but other studies have suggested that this combination (Al-Sebie and Irani, 2005, Jaeger and Thompson, 2003, Yildiz, 2007) has led to poor quality e-government in other instances. The respondents were broadly split as to whether they saw e-government being introduced for their benefit, but most believed a goal was to make accessing services easier for Saudi citizens:

“I think they are supposed to make things easier and enable people to get public services with no need to go to the department and to stand in queues. It’s more comfortable for both people and employees who treat applications” (U15)

Other interviewees, such as U22, suggested a more mixed approach with some elements of the state striving to take a citizen-centric approach and others introducing e-government to conform to a recent set of bureaucratic requirements:

“Honestly, some of them are taking it seriously, but there are governmental departments that are just showing off, because of local pressure or pressure from high governmental levels” (U22).

This finding was borne out in the subsequent survey of provision that is reported in Table 1-1. On the other hand, many of the respondents suggested that the goal was to conform to the perceived international norms, one of which was the implementation of e-government services. Examples of this included:

“They want to look like an open country, developed, and which uses technology” (U14);

“They want to be like the world is ... They are trying, the will exists, but I don’t know how they can implement it” (U20).
Indirectly, the information in Chapter Five supports the literature review in that weaknesses in basic public administration in turn affect the implementation of e-government services. In the case of the KSA, this has led to relatively hard-to-use websites being accessed by a population with relatively limited ICT and e-transaction experience. What is interesting is the range of reasons for the implementation of e-government services suggested by the respondents. For the most part, the process is seen as informed by a desire to help Saudi citizens but it is partially undermined by the existing bureaucratic and administrative cultures. This finding is consistent with the research goal (Yildiz, 2007) of studying e-government less in terms of the technology in use and more in terms of the wider political processes, social culture and public administration norms of a particular country.

6.2.3 Adoption by the Citizen

In Chapter Two, a range of factors identified in the literature review were indicated as potentially influencing a citizen’s decision to adopt e-government services. These are repeated in Table 5.1 below and grouped into three broad categories of personal, technological and transactional:

Table 6-1 Factors influencing Citizen Adoption

<table>
<thead>
<tr>
<th>Broad Category</th>
<th>Specific aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Wider experience with ICT</td>
</tr>
<tr>
<td></td>
<td>Social influences</td>
</tr>
<tr>
<td></td>
<td>Cultural influences and norms</td>
</tr>
<tr>
<td>Technology</td>
<td>Usefulness</td>
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<tr>
<td></td>
<td>Ease of Use</td>
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<tr>
<td>Transaction</td>
<td>Risk</td>
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<tr>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td></td>
<td>Innovation and newness</td>
</tr>
<tr>
<td></td>
<td>Compatibility with previous approaches</td>
</tr>
</tbody>
</table>

The goal in this research was to determine what factors are relevant in influencing e-government services adoption in the KSA. Various existing studies of e-government adoption in the wider GCC region and the KSA have indicated that some personal factors are more or less likely to be relevant. For example, Baker (Baker et al., 2007), in an earlier study in KSA, found that age was important with those under 25 much more likely to have
adopted the limited range of e-government services then on offer. Al-Otaibi and Al-Zahrani (Al-Otaibi and Al-Zahrani, 2009) found that, due to social restrictions in the KSA, women are more likely to adopt both e-commerce and e-government services than men. Outside the KSA, studies on e-government services adoption in non-OECD countries stress the importance of support (or the lack of it) from friends and family as part of the decision to adopt (Hung et al., 2006, Lean et al., 2009). Other studies have suggested that a combination of ease of use, usefulness and perceived risk are the critical factors (Wangpipatwong et al., 2008, Lean et al., 2009).

In the present case, the research suggests a number of potential relationships between individual attributes and the decision to adopt or reject e-government services. One, which contradicts earlier findings (Al-Otaibi and Al-Zahrani, 2009), is that females in the sample are less likely to make use of e-government services in the KSA than males. On closer investigation, gender is not the direct reason in this respect as no one cited gender as a reason to either adopt or reject, but is instead linked to other factors, particularly ICT-aptitude and previous use of e-commerce. In both cases the female interviewees report lower levels of competence and usage than the men in the sample.

Of the technological factors, there is evidence that both ease of use and usefulness are factors influencing the decision to adopt or continue to use e-government services. However, as an elaboration on earlier studies, this indicates that difference factors were adopted by different individuals as opposed to being applied in some combination and that the choice as to which rule to use is influenced by personal characteristics. This is explored in more detail in Section 6.2.4 below.

Finally the transactional factors are found to be relatively unimportant in the decision to adopt e-government services. Of these, only trust and risk have any relevance and, on balance, the respondents are prepared to trust the Saudi government but would withdraw their support if they found this assumption of trust had been violated. What is interesting from the interviews, and not reported in any detail in Chapter Five (given the focus on e-government adoption), is that transactional factors such as excitement, newness, trust and risk were often cited in terms of the decision to adopt e-commerce. What is not clear is whether this is because most the sample had used e-commerce before they adopted e-government services, with the result that both excitement and concerns were focussed on learning to use that form of e-transaction, or whether this reflects the nature of e-government services as opposed to e-commerce transactions. Some evidence for the latter may come from the way in which trust
and risk were formulated, being seen in financial terms instead of applying to personal information.

**6.2.4 Analysing the decision processes**

A particular goal of this study has been to take the three criteria (personal, technological, transactional) and use the research on decision-making to explore how they are combined when citizens are considering the use of e-government services. This specifically addresses a weakness in many existing studies where there is little exploration of how citizens make use of all the decision criteria (and how the criteria chosen relates to their personal attributes) in reaching a choice about using e-government services. Some studies (Wangpipatwong et al., 2008, Hung et al., 2006) suggest that Ajzen’s theory of Planned Behaviour (Ajzen, 1991) offers a bridge between the observed factors and the underlying reasons. In contrast, Gefen and Straub (Gefen and Straub, 2000) suggest that the two technological factors (ease of use and usefulness) might apply at different stages of e-government adoption. They suggest that ease of use informs the decision to use e-government services at all and that usefulness is relevant, if this first test is passed, when considering whether to make use of a particular service.

Gefen and Straub’s (2000) argument is interesting as it is linked to the common view in the decision-making literature (Beach, 1990, Montgomery, 2006, Simon et al., 2006) that the use of multiple criteria rules (which is often assumed in the e-government literature) is rare and if individuals are faced with such a situation they identify one criterion as dominant and base their decision on that feature (Montgomery, 2006). Furthermore, the frequently observed gap between stated intent and actual behaviour means that Ajzen’s theory has little value in explaining the individual process (Slovic et al., 2006) underlying the decision to adopt or reject e-government services.

This model was applied to the empirical findings and in particular the interaction between the three proposed variables. What was found was that a range of issues, often identified within UTAUT, all play some role in the decision process. However, the personal attributes have the effect of influencing which of the technological or transactional issues are critical in determining acceptance or rejection in a particular transaction. There is evidence that this varies according to situation with differential decisions to adopt e-government services inside or outside the KSA. In turn, issues such as risk seem to play a much stronger
role in the decision to use e-commerce rather than the decision to adopt e-government services.

This produces a situation where, of the personal attributes, expertise in ICT and previous usage of e-commerce are linked to the adoption or rejection of e-government services in the KSA. When the decision to adopt or reject is compared to the technological factors in isolation it appears that ‘usefulness’ is the most frequently cited but ‘ease of use’ is the important criterion for a significant minority. However, the adoption of one or the other of these criteria (and only two respondents suggested they used both) is in turn related to ICT aptitude and usage of e-commerce. Those who cited usefulness as their dominant technological criterion were mostly competent with ICT and had prior experience of e-commerce. Those who cited ease of use lacked these pre-conditions.

This suggests that the adoption decision is composed of a sequence of decision criteria as follows:

a) If no prior expertise, ease of use is critical;
   b) If ICT competent, then usefulness (i.e. the value to a transaction) is critical.

Consistent with the suggestion of Gefen and Straub (2000), ease of use is the first step in the decision to use e-government services and usefulness then determines the subsequent extent of that usage. The role of risk and trust emphasises the sequential nature of the decision process. In terms of e-government services they are not important criteria for initial adoption, but act as rules to be invoked if the expectations are subsequently breached. In decision-making terms this gives broad support to those theories that suggest decision-making consists of a number of sequential steps with different criteria dominant at each stage (Beach, 1990, Montgomery, 2006, Simon et al., 2006).

The role of trust is a particular example of this. In terms of e-commerce, for many respondents it is a critical precondition and they cite the various steps they take to minimise the risk of financial loss. In terms of e-government services, there is a combination of two assumptions – that information loss is of limited importance compared to loss of financial details and the expectation of monitoring by the Saudi authorities – that in combination lead to trust being given a limited role. A common view is that to access a desired service they have to put aside their concerns about trust, and usefulness becomes dominant in terms of their decision-making.
This does not suggest that usefulness, ease of use and trust will always play the roles revealed in Chapter Five. Instead, the assumption is that the relevant factors will vary according to the situation, so in that sense the full range of variables hypothesised within UTAUT remains valid. However, the model suggested in Figure 3-1 can now be strengthened in two particular respects:

a) The underlying decision process will depend on a sequence of yes/no, adopt/do not adopt (Beach, 1990) decisions. In this case the sequence runs from using ‘ease of use’ as a first test (and the complexity of the KSA systems is a barrier to many with low ICT aptitude), ‘usefulness’ becoming critical in determining if a particular service is worth using, and ‘trust’ being relegated to a negative role (i.e. it will only be invoked in case of a breach);

b) Ease of use, as a criterion, is linked to prior ICT expertise and use of e-commerce. Ease of use is more important where either competence or confidence is low.

In terms of the model conceptualized (Figure 2-9), the process of adopting e-government services can be summarised as follows:

i. Attributes of the individual will influence which of the two technological elements become critical in the decision;

ii. The technological element will be modulated by the transactional elements according to the nature of the decision situation. In some cases, issues such as trust, complementarity and excitement may well be critical, and in others they will be secondary. However, this is not a weighted additive decision rule but the sequential application of a block of relevant criteria.

6.2.5 Fit to the Research Question

Chapter set out three core research questions of:

a) Identifying the individual factors that influence the citizen adoption of e-government services in Saudi Arabia,
b) Identifying the technological factors that influence the citizen adoption of e-government services in Saudi Arabia,

c) Identifying the transactional factors that influence the citizen adoption of e-government services in Saudi Arabia,

As discussed in chapter five and above, the individual factors were related to the individual’s previous usage of ICT (either in general or specifically in the form of e-commerce). In particular, those who lacked such expertise tended to rely on ease of use as their key criteria when considering usage of e-government. Within the KSA, faced with complex, less well designed, systems they tended to then make little use. Outside the KSA, they found a better match between their aptitude and the quality of the e-government systems they wished to use.

In this case, as argued in chapter five, the technological factors were basically limited to the concept of trust. In this case, when the e-government aspect was considered, it was clear that the individuals started with a predisposition towards trust but indicated that they might change their initial decision if there was any evidence of a breach of trust by the state at a later stage.

An important finding was that both ‘ease of use’ and ‘usefulness’ were valid transactional factors but for different people. In effect, their prior ICT competence was linked to their reliance on one or the other. In the KSA (as a reflection of the quality of e-government services), the transaction criteria had a bearing on the level of usage (those who stressed ‘usefulness’ tended to use e-government), outside the KSA, this distinction faded. So usage of e-government was similar regardless of the transactional factor seen as important by the individual.

### 6.3 Evaluation of Yesser

The final goal of this study was to offer an early evaluation of the impact of the Yesser e-government initiative. Yesser was introduced in 2005 with ambitious goals (Yesser, 2010a) of “providing better and more easy-to-use services for individual and business customers”. The intention was for full implementation by 2010 when it was planned to have delivered ‘world class’, ‘seamless’ and ‘user-friendly’ (Figure 2-7) e-government services. The findings summarised in Table 1-1 and in the interviews reported in chapter four indicate
that none of these goals have been met and Table 5-38 in particular indicates that ‘ease of use’ was a major barrier to adoption.

Equally, despite the importance of Yesser as a focus for the development of e-government in the KSA, Chapter Five has indicated there is relative ignorance of the existence of Yesser as a programme among the sample interviewed. Many of the respondents indicate that current provision is nowhere near meeting these goals. The suggestion in Section 6.2 above, that ease of use is important, especially when there is either a low level of ICT competence or limited prior experience of e-commerce, is perhaps critical here. At present, with some exceptions, the e-government services provided by the KSA are not easy to use and this creates a substantial barrier to usage. When this is combined with relatively low levels of ICT aptitude, then adoption rates will remain low despite the commitment of many to use e-government if it is available.

It is possible to map the current state of e-government in the KSA on Figure 2-2 to produce the following illustration of e-government provision in KSA:

**Figure 6-1 Current state of e-government provision in KSA**

As the above figure shows, the system is driven by administrative convenience and at best offers limited isolated services (Yildiz, 2007). Issues of both human capital (both the nature of public administration and wider ICT skills) and technology (low connection speeds and limited broadband spread) combine to limit the actual delivery of Yesser to simple and
often poorly-delivered services as described in the interviews. The barrier formed by lack of ease of use can be broken in one of three ways:

a) Wider experience of e-commerce (but at the moment this is unlikely due to weaknesses in the legal and financial structures in the KSA);
b) Easier to use website design;
c) Higher levels of ICT skills across the population.

An option would also be to make more services available and insist they be accessed on-line. From the sample, a number who indicated they made no use of e-government services in the KSA did use e-government services in OECD countries. The preferable response would be to concentrate on improvement of current services, combined with a wider commitment to training and education. Without addressing these problems, the take-up of e-government will remain poor and limited to a sub-set of those with relatively high levels of education. For those in the sample who reported compulsion as their reason to use e-government services (Section 5.4), the main consequence was that they were more concerned about issues around trust and risk than the rest of the sample.

As indicated in some interviews, and in Table 1-1 in the introduction, there is some evidence that the range of e-government services is steadily expanding. However, the development of e-government is taking longer than was expected when Yesser was launched in 2005. As noted, subsequent to the conclusion of this research, Yesser has been extended from 2012 as its completion date to 2016 (Kingdom of Saudi Arabia, 2012).
CHAPTER 7

7. CONCLUSION

This research set out to understand the factors that influenced the adoption of e-government services by the citizens of the Kingdom of Saudi Arabia. Chapter five has developed the summary developed at the end of Chapter four and placed the empirical findings in terms of the literature review so as to summarise the extent that e-government had been adopted in the KSA at the time of the fieldwork for this research. The key conclusion is that there is strong *a-priori* support by the interviewees for e-government if it leads to less direct contact with the state bureaucracy and a more rule-based approach to public administration. Due to problems with the current model of delivering state services, the Saudi citizens who were interviewed were strongly biased to accept e-government services if it is provided. When looking at what criteria led to adoption or rejection by the respondents it is clear that different individuals use either ‘usefulness’ or ‘ease of use’ as their dominant decision rule. In the context of e-government services, trust is an issue that is only invoked if their expectations are breached (i.e. it does not enter into the original decision to adopt e-government services but may lead to a later decision to reject), in contrast to e-commerce where it is a major issue when the initial decision to adopt is under consideration.

Broadly, those who make ‘usefulness’ their key criteria have good self-reported ICT skills and have made previous use of e-commerce. In contrast, those who rely on ‘ease of use’ are less competent with ICT and less likely to have made use of e-commerce. Key supporting information is that those who stress ‘ease of use’ as a barrier within the KSA made use of e-government services when in an OECD country where they could access well-designed, user-friendly websites. This suggests that ‘ease of use’ is the criterion most likely to be used by someone with either relatively weak ICT skills or without previous experience in e-commerce. This reflects the formulation suggested by Gefen and Straub (2000) that ease of use and perceived usefulness may apply to different stages in the adoption of e-commerce/e-government. In their model, ease of use is the dominant decision rule when first considering the usage of e-commerce or e-government in principle, and usefulness becomes dominant when a particular transaction is under consideration (Gefen and Straub, 2000).

On the basis of these findings, there are grounds to be concerned at the future implementation and take-up of *Yesser*. Given the importance of e-business and e-government for Saudi Arabia’s continued economic growth, it is critical that methods for improving the
viability of e-services be identified and explored. Those interviewed were mostly well-educated, and used to the internet and to using ICT. Even so, a number reject the use of e-government within the KSA on grounds of it being hard to use. The conclusion is that the perceived complexity of the systems, due to poor design, deters potential users, especially if they lack existing experience in other forms of e-transactions. Given the limited nature of e-commerce in the KSA, it is unlikely that this expertise will come from individuals gaining confidence and competence in that manner. This leaves the Saudi authorities with two major choices: either to invest heavily in ICT training for the population or to invest in producing very well-designed, user-friendly web sites. The evidence in Chapter Four is that neither of these options is being pursued but the later survey (reported in Table 1-1) does indicate some attention to extending the range of services available. Unless addressed, this is likely to be a serious drag on the take-up of e-government services. The second problem, of providing useful services, is easier to address. The strong evidence is that if the services are seen to be useful, Saudi citizens are likely to be willing to adopt, if they can move past the first threshold.

7.1 Contribution of this Research

The main contributions of this research fall into three distinct categories:

a) It is a timely review and evaluation of the Yesser e-government initiative in Saudi Arabia;
b) It is a systemic attempt to draw on the wider decision-making literature so as to explore the citizen decision to adopt e-government;
c) The research method makes use of semi-structured interviews rather than the questionnaire approach often adopted, in turn, as discussed below, this focus supported the interest in studying e-government adoption as an example of individual decision making.

7.1.1 Yesser

As discussed in Section 6.3, although Yesser was due to be completed by 2010, there has been no recent formal evaluation of the programme (Yesser, 2010b). Given the issues of patchy delivery and breadth of what is available, especially compared to the ambitious aims (Yesser, 2010a), any evaluation study is timely. In this research, it appears that provision is
still at the level of either information or fragmented services and that e-government remains hard to access and use. On the other hand, some respondents indicated that they believed what was available was slowly improving in terms of both spread and quality. Equally, as set out in Table 1-1, some departments and services have improved even since the fieldwork was conducted so there is evidence of on-going work and service development.

The background to Yesser was a country with a relatively low take up of the internet (Table 2-3) even compared to other GCC states (Table 2-4) so that by 2006 under 20% of the population were internet users (Table 2-3) with this having risen to 27% by 2008 (Table 2-4). Of these, 2-3% of all users had broadband access (Dwivedi and Weerakkody, 2007) and it was clear from the interviews that poor quality connections (Alsheha, 2007) remain a major constraint on internet access in the KSA. This has led to a population, as a whole, who are late adopters of the internet, and the recent expansion is mostly concentrated among the young, potentially leaving a critical generation behind (Al-Fakhri et al., 2008). In addition to this, the Saudi authorities themselves have been ambiguous in their approach to the internet, in part seeing e-government as a critical element in modernising public administration (Alsaffar et al., 2009) and in part seeing it as a threat the country’s traditional norms as it brings in western values and attitudes (Hedley, 1998). Nonetheless, Yesser was clearly designed to improve radically the provision of e-government services within the kingdom (Al Ghoson, 2010).

The evidence reported in chapter five is that these ambitious goals have not been met. The lack of public awareness about Yesser, per-se, is less an issue than the repeated views that services are poorly designed and delivered, and that many found they had to supplement attempts to use e-government services with visits to state offices. The lack of reliable feedback on the process of an application or transaction led to a loss of confidence. Nonetheless, with only 2 exceptions, the interviewees (including those who made little or no use of e-government services) were committed to the idea of e-government, seeing it as a symbol of modernisation of the Kingdom, a means to access impartial services and to avoid having to deal with the physical Saudi bureaucracy. Table 1-1 was drawn up some 18 months after the fieldwork and in a way reflects more recent developments (up to mid-2012). This does suggest continued progress with service delivery and that some Government departments have developed improved services.

However, this may also suggest that the KSA is placing an emphasis on those services of most use to the state than those of use particularly to its citizens. The emphasis on revenue collection (many of the respondents referred to on-line payment of traffic violations) and the
regulation of the labour market are issues of priority for the state. The latter provides a useful example as it was clear from the literature review that the Ministry of Labour (Ministry of Labour, 2009) was an earlier adopter of Yesser seeing this as a critical element in its goal to reduce ex-patriot employment in favour of Saudi citizens (Achoui, 2009). It is noted in Table 1-1, that the Ministry has continued to develop its systems and that these are now seen as comprehensive and easy to use. In effect, this does suggest that despite claims of citizen convenience, the Saudi state is placing most of its effort in e-government implementation in the areas where it has the greatest interest in administrative convenience.

Overall, it can be argued that Yesser has failed to meet the ambitious goals set out in 2005 that: “by the end of 2010, everyone in the Kingdom will be able to enjoy – from anywhere and at any time – world-class government services offered in a seamless, user-friendly and secure way by utilizing a variety of electronic means” (Al Ghoson, 2010, p. 1). On the other hand, the Yesser framework has seen a substantial expansion of both the range and quality of e-government services available in the KSA. The next problem, as reviewed below, is to address the related issue of citizen adoption of these services.

This thesis is the first structured research project that looks at e-government adoption in the KSA from a consumer perspective and, as such, adds to our understanding of the citizen perspective in terms of take up of e-government.

7.1.2 Model of citizen adoption

The second main contribution lies in drawing a framework from the decision-making research and using this to explore the reasons for citizen adoption. The framework helped structure the enquiry, especially as there was a strong a priori reason to suspect that the decision to adopt or reject comprised sequential steps and that, at each stage, a single criterion would be dominant. This allowed a much deeper investigation of the data and differs the common form of findings using UTAUT with a tendency to list those variables found to have statistical significance (Hung et al., 2006, Lean et al., 2009, Wangpipatwong et al., 2008). From this stemmed the findings that ‘ease of use’ was the key criterion in this study for initial adoption and for individuals with low ICT skills, and that ‘usefulness’ was the key criterion when deciding to adopt a particular service and for those with self-reported reasonable levels of ICT knowledge. This is of relevance in that it indicates that for a wider social group, with little existing experience of ICT, ease of use becomes an important criterion. On the other hand, many current surveys of e-government service usage in the
OECD tend to stress usefulness as the most important criteria (Venkatesh et al., 2011). However, as with the recent EU surveys (European Commission, 2010), 15% of the population who do not use e-government services cite ‘complexity’ (i.e. for them, ‘ease of use’) as the main barrier.

A critical step in building the argument in this thesis was to look for an explanation as to why so many of the existing studies of e-government service adoption identify such a range of factors. Some of this can be traced to the period when the research was conducted so some early studies (Sciadas, 2002) suggest that older people were more likely to use e-commerce and e-government. However, with hindsight, this is also related to a period when both ICT hardware and the costs of internet connection were significant barriers to those less well off. More typical now is the finding by Baker et al., (2007) that in the KSA older users were less likely to make use of e-government services due to lack of ICT expertise. Even with this type of re-evaluation, the literature suggests a substantial range of factors that may have a bearing on the individual’s decision to adopt e-government services (tables 1-2 and 2-6 and Figure 3-1).

This led to an interest in any construct that could help explain this wide range of possible factors and the way that different studies found one or more to be significant in that particular case. Since e-government adoption can be characterised as a decision by an individual, the literature on what is broadly called ‘naturalistic’ decision making (McAndrew et al., 2009) offers some useful insights. In particular the argument that decision makers will often seek to reduce a complex problem to a single criteria (to ease decision making) and this process will be informed by their own past experiences, the nature of the task and how they formulate the problem (Beach, 1990, DeKay et al., 2009, Klein, 1998, March, 1994, Montgomery, 2006, Shafir and LeBoeuf, 2008). Critically, this research suggests that not only might different people use different criteria for the same decision but also that the same people may make use of different criteria for different decisions (Kerstholt and Raaijmakers, 1997, Maule et al., 2000).

If Montgomery’s (2006) dominance structuring model is applied to the framework supplied by UTAUT what is to be expected is that one of the long lists of factors identified will be dominant for an individual. Equally, there is no reason to expect that a group of people will identify the same factor as being dominant. This construction underpinned the development of Figure 3-1. However, when the interviews were analysed a slightly different formulation was suggested as set out in Figure 5-1. In this, the individual factors (i.e. the various characteristics of the individual such as age, gender, ICT-experience and ICT-
aptitude) influenced which of the technological (ease of use and usefulness) and transactional (in this case essentially risk and trust) that were adopted in order to frame the decision to adopt or reject e-government services in the KSA.

Few of the respondents argued they used multiple criteria so there is broad support for an argument that they were basing their decision on one or the other of the criteria. In the case of e-government adoption, risk and trust were placed to one side, to be invoked in case of breach but not as active criteria in terms of the decision to adopt. Instead, the respondents divided roughly 65:35 in terms of stressing ‘usefulness’ or ‘ease of use’ as their criteria. Within the KSA, the criteria adopted had an influence on the actual decision as those stressing usefulness were more likely to adopt than those stressing ease of use (Table 5-61). However, outside the KSA, this distinction was lost (Table 5-62) suggesting that the nature of the e-government systems on offer was an important variable. In effect, complex hard to use systems remained a barrier to adoption for those looking for easy to use systems due to their ICT-aptitude and prior experience in using the internet.

Figure 5-2 is important in this respect. It summarises how differences in individual characteristics (in this research variations in ICT aptitude and usage) influence the criteria used to make the decision to use e-government services. The research in Chapter Four suggests that this is a selection between ease of use and usefulness (with risk/trust placed to one side). In turn the criteria selected led to a different outcome in terms of the usage of e-government services inside and outside the KSA. This strongly indicates that the reason for the different adoption rates must lie with the nature of the services being offered in the KSA.

7.1.3 Research Design

The use of interviews rather than questionnaires proved to be particularly valuable in allowing this exploration. Not only did it allow the researcher to explore in detail issues that individual respondents raised, it also allowed an exploration of why they carried out certain actions. In effect, it enabled the linking of outcomes (level of usage of e-government) to the characteristics of the individuals and the reasoning they offered for their choice. Surveys, and structured questionnaires, can often indicate dominant factors, but tend to exclude minority views especially when some form of correlation or regression analysis is used for the analysis.

Here, the research design allowed a focus on the individuals and their individual argument for how they used (or rejected) e-government services. That in turn allowed the
building up of the three stage model set out in Figure 5-1 where the individual’s characteristics influence the decision rule they used and that in turn influenced the actual decision to use or reject e-government services.

One enduring problem with qualitative case study research is the process of generalising from the actual (non-random) sample (Easterby-Smith et al., 1991, George and Bennett, 2005, Gerring, 2007, Goertz, 2006, King et al., 2002, Mahoney, 2000, Shah and Corley, 2006, Yin, 2009, Yin, 1994). In particular there are a variety of tools suggested to enable this, or to ensure any approach has credibility. To some such as King et al (2002), the solution is to apply quantitative approaches within the case study (i.e. to analyse the data captured), preferably involving regression style analyses. Others, such as George and Bennett (2005), argue that the critical step is the actual selection of the case to ensure it has all the characteristics that are relevant. The final approach (and these are not mutually exclusive) is to argue that existing literature forms a framework (Gerring, 2007, Goertz, 2006, Yin, 2009) that can be used to study the emerging findings and to provide a breadth that is inevitably otherwise missing from a single or small-N case study design (Reuschemeyer, 2003, Mahoney, 2000).

Two stages are often suggested as improving the robustness of this process. One is the use of multiple analysis strategies to ‘embed’ (Ragin, 2008, Scholz and Tietje, 2002, Shah and Corley, 2006) a specific analytic tool within a more general qualitative enquiry. In this case, Qualitative Comparative Analysis (Gerring, 2007, Ragin, 2008, Rohwer, 2010, Romme, 1995) provided an invaluable tool to allow comparisons to be drawn between the data on the individual, technological and transactional factors identified, the decision rule adopted and the actual decision made (Table 5-56 and the subsequent discussion). The other tool is suggested by Yin (1994, 2009) as ‘narrative’ building which is a structured process by which the researcher seeks to impose a meaning on the data gathered (i.e. Sections 5.7 and 5.8), taking care to clearly set out the steps and how information is being integrated. As with most of Yin’s suggestions in this respect, Pattern Matching (i.e. comparison to the existing literature) is key as the researcher seeks to move from data to making inferences and constructing an explanation for what has been observed (Lipton, 2004).

In this case, the approach was to use Qualitative Comparative Analysis to help analyse links and variations across the ‘input’ variables (the personal, technological and technical factors) and the ‘output’ variables (the decision rule actually adopted and the decision actually made). Once this had been clarified, the next step was to construct a narrative that explained the observed links and variations and then, critically, to compare this
narrative to the model proposed before the research commenced and the existing literature on e-government adoption outside the OECD.

7.2 Limitations of this Research

There are several weaknesses to the enquiry. The first is related to the decision to adopt a qualitative approach and is in effect, the inverse of its basic advantages. There are always issues that flow from this in terms of data gathering and data interpretation (Creswell, 2008). It is critically important to show how the researcher has imposed meaning on the data so that a follow up enquiry can explore how the conclusions were reached. In addition, the process of generalizing from a qualitative survey, especially with a small non-random sample, is complex (Creswell, 2008). In the end, with any qualitative enquiry it remains important to ground the conclusions in the particular circumstances. In this case, the desire of the Saudi citizens who were interviewed for e-government as a means to avoid the physical bureaucracy was an important element to the findings. This is not a unique finding in the literature (Heeks and Bailur, 2007, Ndou, 2004, Pons, 2004, Schuppan, 2009, Srivastava and Teo, 2007, Yildiz, 2007) on e-government adoption outside the OECD, but it is an important point when interpreting this study.

The second problem is that the sample is relatively small (Mahoney, 2000) and skewed to the well-educated who have lived outside the KSA and have reasonable aptitude in English. As a result there was a relatively high take-up of e-government services, but this is in a group that other studies (Wangpipatwong et al., 2008(Heeks, 2002, Hung et al., 2009, Lean et al., 2009) have consistently found are likely to be early adopters. In terms of overall adoption of e-government services in the KSA, it is likely that actual take-up rates are low, mostly due to problems with internet access and the barrier between low technological aptitude and experience and the relatively complex systems on offer (Abanumy et al., 2005).

Another problem, again common to many qualitative studies (Creswell, 2008), was of actually securing the desired sample. The ideal goal would for the sample to be gender-neutral and more evenly balanced across those who had always lived in the KSA, those who had lived in an OECD country and those currently living in an OECD country. The final issue is the study focuses purely on the citizen decision to adopt e-government services. As discussed in Chapter Two, the way the state chooses to offer e-government, and its capacity to deliver, are important issues in the introduction of e-government services outside the OECD. Thus a more complete study would explore whether the barriers to adoption
identified by the users are a product of conscious choices by the state or limitations in its ability to deliver. This in turn has important consequences for the future development of e-government services in the KSA.

### 7.3 Areas for further study

One theme that emerged from the interviews was the importance of e-commerce use as a precondition for the use of e-government services. The interviews explored with the individuals their reasons to adopt (or reject) e-commerce and it was clear the reasons cited were often different to those they applied to e-government (see Section 5.5). In consequence, one way this study could be usefully expanded is to look at the reasons for the adoption of e-commerce and the related decision of firms to supply such services.

A related expansion, as discussed in Section 7.2 would be to explore the reason for the state to supply e-government. It may be that a study that combined the reasons to supply and use e-commerce, and the state’s reason to supply e-government, would all enhance a study that focussed directly on e-government adoption. From the interviews in this case, e-commerce adoption was driven by different reasons to e-government adoption. However, there was no scope to systemically explore if this was due to the nature of e-commerce within the KSA (Al-Otaibi and Al-Zahrani, 2009).

### 7.4 Concluding Remarks

This thesis has used the recent Yesser e-government initiative in the Kingdom of Saudi Arabia to explore the process of citizen adoption. This focus, and the research approach adopted, has opened up a number of new avenues to explore. First, the focus could be on why a particular group of individuals adopt or do not adopt a particular e-government initiative. This has been done in previous studies but they have tended to rely on questionnaires rather than in-depth interviews. The advantage of using the structured interview model in this research is that it allows the exploration of possible reasons for any apparent correlations.

A simple example of this will suffice. In Section 5.3, there is an implied linkage between gender and the likelihood to adopt. If the research had simply relied on questionnaire information, it would not have been feasible to explore whether there was any evidence that gender had a causal role or if it was simply (and accidentally) correlated to another variable. In this case, it was clear from the interview information that there was no
reason for the female respondents to reject e-government on the basis of their gender but that there was an overlap between the females in the sample and those who had always lived in the KSA, had low self-reported ICT skills and had limited prior experience of e-commerce. This in turn offers a new level to explore: “Is it true generally across the Saudi population (when controlling for other factors such as age, social class, and geographical location) that this relationship holds more widely”? This question lies outside the current study, but it suggests that while there is no reason to believe that gender is a barrier in and of itself, any programme designed to improve the ICT skills of the wider population should concentrate on accessibility to women.

More generally, the interviews explored the attitudes to and usage of both e-commerce and e-government services. The former material has been largely set aside in reporting the research except where, for example on the issue of trust formulation, it is directly relevant. What would be interesting is to return to the data more systemically to explore a number of potential themes, such as:

i. Does the same individual cite the same factors as influencing their decision in either case?

ii. If not, are there recognisable patterns of differences between individuals and situation? (for example, are those under 30 likely to cite newness for e-commerce?)

iii. In turn, do these observed difference start to explain the differential responses to the usage of e-commerce and e-government?

These findings start to suggest that it is useful to explore whether the decision criteria are the same or different for each individual, and whether these criteria lead to different outcomes (to adopt or not adopt). The final theme in this thesis is to suggest that citizen adoption of e-government services should be studied as a decision-making process. This approach has proved useful in this study, not least in indicating that it is important to move beyond listing the potential variables that may apply and, instead, focus on how individuals select criteria and use them to make the decision. This may help address the residual confusion in the UTAUT related literature indicating a variety of factors with little or no exploration as to reasons for variation between individual decision-makers.
REFERENCES


Beach, L. R. 1990. *Image Theory: Decision Making in Personal and Organizational Contexts,* Chichester, John Wiley and Sons.


SAMA 2008. SADAD Overview.


APPENDICES
APPENDIX 1. CONSENT FORM

NOTE:

8. A consent form is required for Persons Participating In Research Projects Involving Interviews, Questionnaires, Focus Groups or Disclosure of Personal Information. However if anonymous postal/ email surveys do not need a consent form as return of the form constitutes consent. The Plain language Statement should include this information.

Appendix 1

9. RMIT HUMAN RESEARCH ETHICS COMMITTEE

10. Prescribed Consent Form for Persons Participating In Research Projects Involving Interviews, Questionnaires, Focus Groups or Disclosure of Personal Information

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<td>Name of Participant:</td>
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<tr>
<td>Project Title:</td>
<td>Factors influencing consumer adoption of e-government in developing countries; case study of Saudi Arabia</td>
</tr>
<tr>
<td>Name(s) of Investigators</td>
<td>Osama Al Mahroqi Phone: (03) 9925 5487</td>
</tr>
<tr>
<td>Supervisors</td>
<td>1. Dr. Shahadat Khan Phone: (03) 9925 5536</td>
</tr>
<tr>
<td></td>
<td>2. Prof. Brian Corbitt Phone: (03) 9925 5808</td>
</tr>
</tbody>
</table>

1. I have received a statement explaining the interview/questionnaire involved in this project.

2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.

3. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.

4. I give my permission to be audio taped: ☐ Yes ☐ No

5. I give my permission for my name or identity to be used: ☐ Yes ☐ No

6. I acknowledge that:
   (a) Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.
   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
   (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
   (d) The privacy of the information I provide will be safeguarded. However should information of a private nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.
   If I participate in a focus group I understand that whilst all participants will be asked to keep the conversation confidential, the researcher cannot guarantee that other participants will do this.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to _______ (researcher to specify). Any information which may be used to identify me will not be used unless I have given my permission (see point 5).

11. Participant’s Consent

| Name: ____________________________ | Date: ____________________________ |
| (Participant)                      |                                 |

| Name: ____________________________ | Date: ____________________________ |
| (Witness to signature)             |                                 |
Project Title: Factors influencing consumer adoption of e-government in developing countries; case study of Saudi Arabia

Investigator: Mr. Osama Al Mahroqi (PhD degree student, osama.talal@rmit.edu.au, 03 99255847)

Supervisors:
Dr. Shahadat Khan (Principal Supervisor) email: shahadat.khan@rmit.edu.au 03 9925 5536)
Professor Brian Corbitt (Associate Supervisor) email: Brian.Corbitt@rmit.edu.au, 03 399255802

Dear Participant,
I am currently a PhD research student in the School of Business IT and Logistics at RMIT University. I am conducting a research project as a part of my PhD degree. My principal supervisor for this project is Dr. Shahadat Khan. This project is also supervised by Prof. Brian Corbitt. The project has been approved by the RMIT Business College Human Ethics Advisory Network.

You are invited to participate in this project as a respondent which will take approximately 50-60 minutes to complete. These two pages are to provide you with an overview of the proposed research. Please read these pages carefully and be confident that you understand its contents before deciding whether to participate or not. If you have any questions about the project, please ask one of the investigators identified above.

I am asking you to participate in this survey so as to provide us with an insight into the experience of adopting e-government services in Saudi Arabia. Your privacy and confidentiality will be strictly maintained in such a manner that you will not be identified in the thesis report or any publication. Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission. Interview data will be only seen by my supervisor and examiners who will also protect you from risk.

This study is designed to explore the factors influencing consumer adoption of e-government in developing countries using case study of Saudi Arabia. I will interview a total of 30 respondents form three categories. One is Saudi’s living outside Saudi Arabia. Second is Saudi’s returning to Saudi after living outside. Third is native Saudi’s never lived outside. In the interviews the participants need to answer questions related to adoption of e-Government services in Saudi Arabia.

There are no perceived risks associated with participation outside the participants’ normal day-to-day activities. The respondents in this research will be personally selected as a convince sampling. Only the collective findings of this study will be disseminated via
If you are concerned about your responses or if you find participation in the project distressing, you should contact my supervisor as soon as convenient. My supervisors will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary. You can examine the interview protocol before deciding whether you want to participate. You will be providing with a Prescribed Consent Form.

Participation in this research is entirely voluntary and participant’s identities will be protected; you may withdraw your participation and any unprocessed data concerning you at any time, without prejudice. There is no direct benefit to the participants as a result of their participation. However, I will be delighted to provide you with a copy of the research report upon request as soon as it is published.

To ensure that data collected is protected, the data will be retained for five years upon completion of the project after which time paper records will be shredded and placed in a security recycle bin and electronic data will be deleted/destroyed in a secure manner. All hard data will be kept in a locked filling cabinet and soft data in a password protected computer in the office of the investigator in the research lab at RMIT University. Data will be saved on the University network system where practicable (as the system provides a high level of manageable security and data integrity, can provide secure remote access, and is backed up on a regular basis). Only the researcher will have access to the data. Data will be kept securely at RMIT University for a period of five years before being destroyed.

You have right to withdraw their participation at any time, without prejudice. You have the right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and it does not increase the risk for the participant. Participants have also the right to have any questions, in relation to the project and their participation, answered at any time. The interview participants have the right to request that audio recording to be terminated at any stage during the interview.

I am assuring you that your identity will be fully protected. The result will also be reported in an overall basis. The findings of this research could be used by e-Government service providers and policy makers in order to provide a better service quality to e-Government in developing countries specifically Saudi Arabia.

If you have any queries regarding this project please contact me at +61 3 99255847 or +61 404 282 660 or email me at osama.talal@rmit.edu.au. You may also contact my principal supervisor Dr. Shahadat Khan, +61 3 9925 5536, shahadat.khan@rmit.edu.au and/or the chair of the RMIT Business College Human Ethics Advisory Network, RMIT University Associate Professor Roslyn Russell, +61 3 9925 5187, roslyn.russell@rmit.edu.au.

Thank you very much for your contribution to this research.

Yours Sincerely,
Osama Al Mahroqi
PhD Candidate
School of Business IT & Logistics
RMIT University, level 13, 239 Bourke Street,
APPENDIX 3. SCHEDULE OF INTERVIEW (ENGLISH)

Project Title: Factors influencing consumer adoption of e-government in developing countries; case study of Saudi Arabia

1.0 Do you use the Internet? Y/N (Tick)
2.0 If not, would you please describe why?

Pay thanks and terminate the interview.

3.0 Please indicate the type of activities you use the internet for like;

3.1 Search for information
3.2 Transaction
   3.2.1 Buying (Goods, services)
   3.2.2 Selling (Goods, services)
3.3 Social activities
   3.3.1 Face book
   3.3.2 Twitter
   3.3.3 Other
3.4 Any other (please elaborate)

4.0 Frequency of use of internet while in Saudi (No. of times a week)?
4.1 Level of satisfaction while in Saudi?

5.0 Frequency of use of Internet while outside Saudi Arabia (No. of times a week)
5.1 Level of satisfaction while outside Saudi?

5.2 Think about the first time you used internet to buy goods or services, what factors did you take into account?

(Example, age, gender, previous experience (familiarity), motivation, socio-cultural, location of the vendor, usefulness of website, complexity (ease of use), compatibility (with existing methods), newness (trying something new), trust, risk)

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<th>Outside Saudi</th>
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5.2.1 Which of the above factors was the most important to you?
5.2.2 Which of them you think was least important or is not applicable in your case?
5.2.3 Any other factor that you want to add?

5.2.4 Please explain if these factors are different when buying goods or
buying services?

5.2.5 Please explain if your decision is different towards buying goods or buying services?

5.3 Think about your subsequent use of internet, was there any changes to the factors you just mentioned?

5.4 Please explain in details if you have faced socio-cultural pressure to use or not to use internet for commercial purposes?
(E.g. did you feel that your wider peer group or family was already ‘doing this’ so felt it was something for you- example of a positive pressure) or (did you received some sort of criticism or pressure from any one not to use internet for commercial purposes)

5.5 Please explain if the type of work you do have any impact on your use of internet for commercial purposes?

5.6 Please explain if your Level of education has any impact on your use of internet for commercial purposes?

5.7 Please explain if your Familiarity with technology has any impact on your use of internet for commercial purposes?

5.8 Please explain if your Age or gender has any impact on your use of internet for commercial purposes?

5.9 Please explain if your Language used has any impact on your use of internet for commercial purposes?

5.10 Please list from most important to least important.

5.11 Please explain if the location of the vendor makes a difference to your decision to participate? (when dealing with purely local or international vendors)

Now we will concentrate on questions related to E.gov; E-Government is the use of internet to obtain public services, in the context of this.

6.0 Have you used any e-gov services in Saudi Arabia? If yes continue
If no, would you please tell me the reasons?

6.1 In your opinion, what do you want the Saudi government to do to convince you to engage with its e-government systems (use of e-gov services)?
(E.g. making more friendly gov staff, website)

Go to question 28 onwards,

7.0 Please tell us about your e-government experience in Saudi and outside Saudi.

(Researcher to repeat questions from 2.2 – 2.8)
8.0 When you first used e-government, what was your motivation to participate in general? (if does not know why, please give general hint from lists of available factors)

9.0 In your previous e-government experience, if you have faced any problem with registration, conformation of your identity or any other possible complexity, would you still do your government work online? Please explain why.

10.0 Please explain if your decision to use e-gov services affected by any factor related to
   10.1.1 Yourself (your gender, age, values, culture etc..)
   10.1.2 The system (the website itself being easy, difficult, etc..)
   10.1.3 The transaction (being secured, similar to the way you always do it)
   10.1.4 If any of these factors makes difference, please explain why and how does it influence your decision?

11.0 Think about the following scenarios, which one is risky to the extent that makes you say no;
   11.1 You did an online application then your personal data was theft,
   11.2 You did an online application then it got lost,
   11.3 You did an online application, submitted all requirement though, it took more than usual processing time

12.0 In your views what are the factors that may encourage user in using a website?

13.0 If a service is available both online and offline and use of Saudi e-gov website is too difficult to use would you still use you online facility? Is yes, why? (example of possible difficulty, very time consuming, low internet speed, strange terms or language)

14.0 Would you please share your experience with any e-gov websites or part of them that was not useful (meaning that what services they promised do is not delivered, or they require further paper based submissions)? What was your reaction towards that?

15.0 In your opinion, what influences your decision to select an online service rather than any other form of service (like paper based service, phone..etc)?

16.0 Please explain if it makes difference which government or agent of a government (e.g. the central state, local government or an agency licensed by the state) (researcher to explain) is offering the online service?

17.0 In the context of both e-Commerce and e-Government, please explain if you think an existence of e-policy will positively enhance someone’s decision to adopt?

18.0 Please think back to your first time use of e-gov services again then explain to me if you have done it because you felt excited to try something new to you? Was
excitement enough reason for you to engage?

19.0 Please explain if that excitement would still push you to do it again even if something else was annoying?

20.0 Think of your e-government experience (such as applying for a visa), if you were asked to participate with a government that you don’t trust, would you still do it? Please explain.

21.0 Think about yourself when using e-government for first, second or any time, did you ever stop and ask yourself whether you trust this online program or this government agent?

22.0 Please elaborate if you were worried to give your personal details?

23.0 What if the service was conducted by a contractor to a government, would you still participate? Why?

24.0 Please explain if you think there is a risk you are taking when using internet at all ,
24.1 e-Commerce,
24.2 e-Government?

25.0 If yes, how did you overcome that risk?

26.0 If you knew that e-government is citizen-centric would you still accept it? Why?

27.0 What, in your opinion, would make you change your decision in the future? Please give full details. For both e-gov and e-com

28.0 In your opinion, what do you want the Saudi government to do to convince you and other nationals to engage more with its e-government systems?

29.0 Anything you want to add?
Other information

30.0 Age:  (18-25) (25+ 35) (35+ 45) (45+55) (55+)

31.0 Gender: Male/Female

32.0 *Nationality: (Dual only)

33.0

34.0 Income (in Saudi Riyal): 1k-5k/month 5k-10k/month 10k-20k/month more than 20k/month

35.0 Occupation

36.0 Level of education:

37.0 *Current location:

38.0 *Previous location: (in the past 5 years)

39.0 Have you ever lived outside Saudi? (group determining question)

In answering this, distinguish between short term stays, residential (staying with family and relatives) and work. For work related time outside the KSA, distinguish between working for an employer who sent them abroad and going abroad independently to look for work. Also distinguish between stays in (a) other Gulf States; (b) the wider Arab world; and (c) OECD countries.

Thank you very much for your participation in this study. I assure you once again that data will be kept confidential.
APPENDIX 4. SCHEDULE OF INTERVIEW (ARABIC)

جدول أعمال المقابلة

عنوان الدراسة: العوامل التي تؤثر على المستفيض في تبني برامج الحكومة الإلكترونية (e-government) في الدول

الناشئة: دراسة نموذجية عن المملكة العربية السعودية.

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<td>إذا لا، اشرح لماذا من فضلك؟</td>
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انقل للسؤال 6.1 ثم اشكر الشخص وانهي المقابلة.

من فضلكا صف طبيعة النشاطات التي تستخدم الإنترنت لدائنها.

3.0
3.1 البحث عن معلومات.
3.2 عملات
3.2.1 بيع (بضائع أو خدمات)
3.2.2 شراء (بضائع أو خدمات)
3.3 نشاطات اجتماعية
3.3.1 فيس بوك
3.3.2 تويتر
3.3.3 نشاط آخر
3.4 اغراض أخرى (الرجاء الشرح).

4.0
كم تتردد على استخدام الإنترنت داخل المملكة؟

4.1 ما هو مستوى رضاك عن خدمة الإنترنت عوماماً داخل المملكة؟

5.0
كم تتردد على استخدام الإنترنت خارج المملكة (عدد المرات في الأسبوع)؟

5.1 ما مدى رضاك عن خدمة الإنترنت عموماً خارج المملكة؟

5.2 تذكر أول مرة استخدمت الإنترنت للمعاملات التجارية الإلكترونية (e-commerce) لبيع أو شراء

5.2.1 بضائع أو خدمات. ما كانت العوامل التي احتبتها بعض الاعتبار؟ بمماني أخرى، هل أسترشدت وجود

5.2.2 أمور مماثلة قبل الاستخدام؟

(على سبيل المثال: عملك، جنسك (ذكر أو أنثى)، خبرتك السابقة وما إلى ذلك) للإنترنت. دواوحك للاستعمال. أي

عوامل الاجتماعية ثقافية. مدى فائدة الموقع، مدى سهولة استخدام الموقع. تواقق الموقع مع اسلفيني الاستعمال

tradicional. تجربة شيء جديد. اللغة بالإنترنت. حب المغامرة.)

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<td>خارج المملكة</td>
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</table>

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<tr>
<th></th>
<th>5.2.1</th>
<th>5.2.2</th>
<th>5.2.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>اي عامل من هذه العوامل كان الأكثر أهمية لك؟</td>
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<tr>
<td>اي عامل من هذه العوامل كان أقل أهمية أو بلا أهمية لك؟</td>
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<tr>
<td>اي عامل آخر تريد أن تضيفه؟</td>
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</table>

من فضلكا اشرح إذا كانت هناك تباين في هذه العوامل بين شراء البضائع وشراء الخدمات.

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من فضلك اشرح إذا كان هناك تباين بين شراء البضائع وشراء الخدمات في قرارك للاستعمال الإلكتروني:

5.2.5 تذكر المرات اللاتقاط للاستعمال للاستقرار. هل كانت هناك تغييرات في المصايب التي ذكرتها؟

من فضلك اشرح بالتفصيل إذا واجهت أي ضغوط اجتماعية، أو ثقافية للاستعمال أو عدم استعمال الإنترنت لأغراض تجارية؟

(مثال: هل استخدام زمانك أو أهلك للاستراتيجية كان حائز إيجابي لمحبة أنه بمكانك أن تستخدم الإنترنت أيضاً؟ أو على العكس، هل واجهت انتقادات أو ضغوط تثبطك في استخدام الإنترنت لأغراض تجارية؟

من فضلك اشرح إذا كان نوع عملك له أي تأثير على استخدامك للمعاملات التجارية الإلكترونية؟

من فضلك اشرح إذا كانت درجتك العلمية لها أي تأثير على استخدامك للمعاملات التجارية الإلكترونية؟

من فضلك اشرح إذا كانت الفئة للاستراتيجية والتكنولوجيا لهما أي تأثير على استخدامك للمعاملات التجارية الإلكترونية؟

من فضلك اشرح إذا كان عمرك أو جنسك لهما أي تأثير على استخدامك للمعاملات التجارية الإلكترونية؟

من فضلك اشرح إذا كانت تأثير لها أي تأثير على استخدامك للمعاملات التجارية الإلكترونية؟

من فضلك اشرح إذا كان موقع البائع له تأثير على قرارك للمشاركة بالتجارة الإلكترونية (أي في التعامل مع التجار المحليين أو التجار الدوليين).؟

من فضلك قم هذه العوامل من الأكثر أهمية إلى الأقل أهمية وماهو الأساسي منها وغير الأساسي؟

5.11  سنركز الآن على أسئلة تخص بالحكومة الإلكترونية. الحكومة الإلكترونية هي استعمال الإنترنت لداء على المعاملات الحكومية. من فضلك جواب على الأسئلة التالية في هذا السياق.

هل استخدمت الحكومة الإلكترونية في المملكة؟ إذا نعم فاقل. إذا لم تأثر من فضلك ما هي أسباب عدم استخدامك لها؟

في رأيك، ماذا تريده حكومة المملكة أن تفعل لتفعيل في استعمال الحكومة الإلكترونية؟ (مثال: موظفين حكوميين أكثر تعلماً؟ توفر مواقع حكومية أسهل للاستخدام؟)

من فضلك أخبرنا عن خبرتك باستخدام الحكومة الإلكترونية داخل وخارج المملكة.

5.10  (الرجاء اعادة الأسئلة 5.2 إلى 5.11)

من فضلك اشرح ما كان سبب استخدامك للحكومة الإلكترونية لأول مرة سواء داخل أو خارج المملكة؟ (إذا لم يستطع أن تذكر، لمح له بشكل عام بناء على قائمة العوامل المتواجدة هنا).

من تجربتك السابقة لاستخدام الحكومة الإلكترونية، إذا واجهت مصاعب بالتسجيل أو بتأكيد الهوية أو أي مشكلة أخرى، هل ستكمل معاملتك الحكومية على الإنترنت؟ من فضلك اشرح لماذا؟

من فضلك اشرح إذا كانت تعقد أن قرار استخدامك للحكومة الإلكترونية متاثر بالعوامل التالية:

رجاءً، أعد الأسئلة 5.12 إلى 10.1.1. (للمرتين)

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<table>
<thead>
<tr>
<th>الاستجابة</th>
<th>سؤال</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1.2</td>
<td>النظام (الحاسب المستخدم أو سرعة الرسائل أو التوصيل أو سهولة استخدام الموقع) بما في ذلك：</td>
</tr>
<tr>
<td>10.1.3</td>
<td>العاملة (مؤمنة؟) شبه المعلقات التي تستخدمها دائما)</td>
</tr>
<tr>
<td>10.1.4</td>
<td>إذا كانت أي من تلك العوامل تؤثر على استخدامك، لماذا تؤثر وكيف؟</td>
</tr>
<tr>
<td>11.0</td>
<td>نيرانانية: إذا كنت مستخدمًا للإنترنت، ما هي المواقع الإلكترونية التي تشتهر؟</td>
</tr>
<tr>
<td>11.1</td>
<td>تقديم بطاقة حكومية على الإنترنت وسرقة معلومات السكنية.</td>
</tr>
<tr>
<td>11.2</td>
<td>تقديم بطاقة حكومية على الإنترنت وصياغة.</td>
</tr>
<tr>
<td>11.3</td>
<td>تقديم بطاقة حكومية على الإنترنت واتخاذ وقت طويل للاكتمال، أو قالت ما مدى قدرتها ورقيا.</td>
</tr>
<tr>
<td>12.0</td>
<td>من وجهة نظرك، ما هي العوامل التقنية التي تشجع أي مستخدم على استخدام أي موقع حكومي؟</td>
</tr>
<tr>
<td>13.0</td>
<td>إذا كانت الخدمة متاحة على الإنترنت، إذا كنت استخدام الموقع الإلكتروني صعب الاستعمال (مثلًا يتطلب كثير من الوقت أو سرعة الإنترنت بطيئة أو اللغة على الموقع غير مفهومة) ، هل تستخدم الموقع الإلكتروني على أي حال؟ إذا نعم فلماذا؟</td>
</tr>
<tr>
<td>14.0</td>
<td>من فضلك شارك معي إذا كان لديك تجربة باستخدام مواقع حكومية إلكترونية لم تكن مجدية فيما كنت تريد ان تتجرب على الإنترنت. ما كان رداً عنك لهذه التجربة؟</td>
</tr>
<tr>
<td>15.0</td>
<td>إذا كنت باروك في استخدام الإنترنت، ما هي إشراقة استخدام متعلقة على الإنترنت بدلا من استخدام الهاتف أو الممارسات الرقمية أو الذهاب شخصيا أو غيرها من الطرق؟</td>
</tr>
<tr>
<td>16.0</td>
<td>اشرح إذا كانت تجربة استخدام الإنترنت تباني بحسب النظرة الحكومية التي تعرض صفحة الإنترنت (مثلًا إذا كانت الحكومة المحلية أو إذا كانت حكومة مركزية).</td>
</tr>
<tr>
<td>17.0</td>
<td>فضلاً اشرح إذا كان وجود قانون إلكتروني يحظر مثل هذه الممارسات ، هل تعتقد أن هذا يفيد بأي شكل من الأشكال؟</td>
</tr>
<tr>
<td>18.0</td>
<td>تريد أن يعرف عما إذا كان هناك محفز مباشر أو غير مباشر للاستخدام الحكومة الإلكترونية؟</td>
</tr>
<tr>
<td>19.0</td>
<td>فكر أول مرّة استخدمت فيها الحكومة الإلكترونية. هل كنت متحمسا لاستخدامها لأنها تكنولوجيا جيدة؟ هل كان ذلك سبب كافي لكي تشارك؟</td>
</tr>
<tr>
<td>20.0</td>
<td>من فضلك فسر إذا كانت تلك الأدوات تستهدف للمشاركة مجددا حتى لو تواجهت بعض المضاعفات في استعمال.</td>
</tr>
<tr>
<td>21.0</td>
<td>فكر في تجربتك باستخدام الحكومة الإلكترونية (ركز على تقديم طلب على تأشيرة على سبيل المثال). إذا طلب منك استخدام حكومة إلكترونية لتقديم طلب إلى عنوانها الرجاء التفصيل.</td>
</tr>
<tr>
<td>22.0</td>
<td>تفكّر في تجربتك باستخدام الحكومة الإلكترونية لأول مرّة أو ثاني مرّة أو مرات. هل وقفت و سألت نفسك إذا كنت تثق بالبرنامج الذي تستخدمه أو بالجهة الحكومية التي تعرضة؟</td>
</tr>
<tr>
<td>23.0</td>
<td>من فضلك اشرح إذا كنت قلقا لإعطاء معلومات شخصية عن نفسك؟</td>
</tr>
<tr>
<td>24.0</td>
<td>اشرح إذا كنت تعقد أنك تجادل أي شك في الأشكال عندما تستخدم الإنترنت للتجارة الإلكترونية (24.1) للحكومة الإلكترونية (24.2) إذا نعم كيف تخطط لذلك؟</td>
</tr>
<tr>
<td>25.0</td>
<td>إذا كنت تعلم أن الحكومة الإلكترونية متخصصة حول المواطنين (تزيد الرقابة عليه) ، هل ستقبل بها على أي الأحوال؟</td>
</tr>
<tr>
<td>26.0</td>
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</tbody>
</table>
ما هو في ذلك سبب تبني الحكومة السعودية لبرامج الحكومة الإلكترونية؟ بمعنى آخر، ما هو غرض الحكومة من تبني مشروع الحكومة الإلكترونية؟

هل تعتقد أن مستوى الخدمة المقدمة ونجاح المشروع مرتبط بشكل أو بآخر بهذا الغرض الذي ذكرت؟

ما مدى معرفتك ببرنامج يسر (البوابة الوطنية لتعاملات الإلكترونية) الذي طرحته الحكومة السعودية في 2005؟

إذا ما مدى وجود دعاؤه وإعلان من قبل الحكومة وهل هي مجدية في رأيك؟

ما قد يغير قرارك باستعمال الحكومة الإلكترونية أو التجارة الإلكترونية في المستقبل؟ الرجاء الشرح.

برايتك، ما يوسع الحكومة السعودية ان تفعل لتنعتك بالمشاركة بالحكومة الإلكترونية؟

هل تعتقد أن الحكومة الإلكترونية مجرد خدمة تقدم على موقع أم هي أبعد من ذلك؟

هل تريد إضافة أي شيء آخر؟
التعليمات الأخرى:

<table>
<thead>
<tr>
<th>العمر</th>
<th>18-25</th>
<th>25-45</th>
<th>45-60</th>
<th>أكثر من 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>جنس</td>
<td>35.0</td>
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<td></td>
<td></td>
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<tr>
<td>الجنسية</td>
<td>37.0</td>
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<td></td>
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</tr>
</tbody>
</table>

الدخل الشهري (بالريال السعودي): ّ 1-5 الف الف والمئة: 38.0 39.0

المهنة: 40.0

الدرجة التعليمية: 41.0

الموقع الحالي: 42.0

الموقع السابق (في السنوات الخمس الماضية): 43.0

هل عشت على الإطلاق خارج المملكة؟ (هذا السؤال لتحديد المجموعة): 44.0

شكراً جزيلاً على مشاركتك بهذه الدراسة. أؤكد لك مرة أخرى أن معلوماتك ستبقى سرية.

_____________________________
APPENDIX 5. SAMPLE TRANSCRIPT OF INTERVIEW WITH A NATIVE SAUDI RESPONDENT (TRANSLATED INTO ENGLISH)

Do you use the internet?
Yes of course.

What are the type of activities you use the internet for?
Browsing, communication, banking and commercial activities, personal accounts, search for information; and sometimes selling and buying, but not locally in Saudi Arabia.

How frequent do you use internet?
I won’t say daily, but each one or two hours.

To what extent are you satisfied with the internet service?
In Saudi?
In Saudi and outside Saudi.

In Saudi, it’s not good at all. Although things are not as before, but it did not develop a lot, technology exists, but internet service providers seem to take it drop by drop! Till now there is no fiber connection, speed is very low, the number of ISPs is very small and they have the same offers, so clients are obliged to use their services.

How frequent do you use internet outside Saudi?
Like in KSA, a lot.

What is your level of satisfaction?
I won’t say it’s excellent, but it’s very good.

I want you to think of the first time you used internet for commercial purposes, buying or selling, bank transactions….did you require any specific factors?
In Saudi, it was in 2005, to buy and sell shares, there was no problem when doing the transaction, it was safe because I was dealing with a bank; the only problem I faced is network disconnection.

Outside Saudi, I was reticent in the beginning, but after some friends gave me more assurance, I began to use it and found it was safe; and with time I you discover that there are some factors that determine the service provider, service provider may be a bank, or ebay or any online store. These websites for example have a tool that tell you about the vendor’s
experience in selling, for example, I will be more likely to trust someone with a 100% or 70% experience, than someone who has 0%. And with this your own experience with online transactions will improve.

Did you have any specific conditions? When you were doing your online banking transactions, did you require the website to be secure or anything else?

No, I didn’t have any conditions in the beginning, but I after I received messages about security improvement, I started to be more careful about these things.

Did you take in account factors like age or gender, familiarity with technology, motivations, socio-cultural pressure, you location, usefulness of the website, ease of use of the website, compatibility of the website with yourself, newness, trust, or risk?

The thing I took in account the most was trying something new, other factors like age or anything else didn’t have any impact. I feel very worried when trying something new, that’s why I like to see the others’ experience, if the thing I am going to use has a history or not. Once I get this information I can use the website without any worries.

Why do you worry? Because of risk?

Yes, financial risk.

Are there any other factors?

No, the only thing I have is worrying about risk. There is also another type of risk, related to stealing accounts.

Can you list these two factors: newness and risk? Which one was most important?

Risk.

Was trust also important?

Yes, but not as important as risk.

Ok, then newness comes after risk.

Yes.

Which of the factors I mentioned was the least important to you?

Age, gender

What about previous familiarity with internet?

Experience is important; it may be in the fourth position.

Motivations?
I don’t need any motivations; I usually get excited about anything new. If there is something new, and if I find it to be trustworthy, right then I’ll start using it.

Please explain if these factors are different when buying goods or buying services? All these factors are not necessary when buying services, because in this case, you’ll be dealing with companies or governments, which are supposed to be secure, well managed and subject to strict regulations. So you can discard risk and newness, because they already have experience in doing this, and there is no need to worry about anything. These factors are only applicable when buying goods.

When you use internet for commercial purposes, do you buy both goods and services? I use it only for goods; in Saudi there are no services. Think about your subsequent use of internet for commercial purposes, did you have the same factors as before? No, they lessened. For a website I already used, there will be no newness, less risk, and more trust.

Please explain if you have faced any socio-cultural pressure to use or not to use internet for commercial purposes? There is some social pressure, which is due to sellers’ cupidity. I found that foreign goods are cheaper than those available in the local market. For example, before the Iphone 4G was available at Mobily, which has a contract with Apple, some sellers brought it from foreign countries, and put it up for sale at a price of 4500 riyal, when the original price outside KSA was only 3000 or 3100 riyal. And as a person who knows the internet, I visited the apple store online, and I found that its original price was only 1000 AUD, so why pay 4500 when I can get it for only 3000?

These are the types of social pressure that made me prefer buying from foreign websites.

Did you participate in e-commerce because you found that your friends or colleagues were already doing it? Yes, they did influence me.

Did anyone of them ever criticize you or warn you not to buy online? No.

Maybe it’s because I don’t speak about commercial transactions a lot, and in contrary, when I do it, they may benefit from it, and do the same as me.

Did your type of work have any impact on your decision? No.

Did your level of education have any impact? A little.

Did your familiarity with technology have any impact?
Yes, a lot.

Did age and gender have any impact?
No.

Did the fact of being bilingual have any impact?
Yes.

How?
70%.

Did your location or the vendor’s location have any impact?
Yes.

Please explain.
Far distance, risk while buying from some countries, like Hong Kong, delay in shipping.

Why doesn’t your type of work have any Influence?
I work as a laboratory specialist, and my job is not related to commerce by any mean.

And internet?
The only relation with internet consist of searching for information.

And how does your level of education impact?
It makes you more open minded, as I had to continue my studies in a foreign country, to get my master’s degree; which made me begin to know how to use internet for commercial purposes. Even if my familiarity with technology began in Saudi, I started with these things only once I was abroad.

Why did familiarity with technology impact your decision?
Like I said before; familiarity with technology gave knowledge about browsers, computers, and websites’ security: which websites are secure, and which of them are not.

So it did increase your trust.

Yes.

What about language? Why did it impact?
Because most or 100% of e-commerce websites are in English, there are no e-commerce websites in Arabic. And although if there were Arabic stores, I will not use, because I’ve never tried them. a month ago I saw an air conditioner put up for sale at a price of 300 riyal,
when I asked for its price in local market, I found it was 1400 riyal; so I wondered how they did! And it’s impossible that I buy it.

We need websites such as ebay or amazon, well-known and secure.

Which of these factors was most important to you: location of the vendor, level of education, familiarity with technology, or language?

The most important thing is language, if you don’t have the language you won’t understand anything. Then comes familiarity with technology, then the location, and level of education.

Now we will concentrate on questions related to E.gov; it is also a part of e-commerce, but in this case the service is provided by the government.

Have you used any e-gov services in Saudi Arabia?

Only once.

Please tell us about your e-government experience in Saudi.
Before moving to Australia, there was no experience.

Once in Australia, I didn’t even know it was e-gov, although I used the service, I believed it was a new technology or a method to simplify things; after that, I learnt that it was provided by the government itself.

This was outside Saudi.

Yes, outside Saudi. In Saudi ,I used it only one time.

Tell us about your experience outside Saudi.

For example, you can apply for a visa or renew it online, but you’ll have to do a medical examination; they send you the visa on your post code or by email.

How was that experience?

Excellent and comfortable.

Can you compare between e-gov in KSA and in Australia?

No comparison is possible, in KSA there is no e-gov at all, or we can say that it’s in its beginning. In Australia, they rely a lot on e-gov to lessen the pressure on government offices.

Think about the first time you used any e-gov service; did you have any conditions before participating?

No.

What factors did you take in account?

Nothing.
For example, when you were applying for a visa online, did require that the website should contain clear information, easy, be in your own language, not to be time consuming…

No, I didn’t require language, as I am bilingual, and the country I was going to is English speaking one, I didn’t have any problem.

Regarding ease of use, I can’t make a comparison, because I participated only with Australian e-gov programs, and in Saudi, there is no e-gov.

In other words, why did you prefer to apply online, rather than using paper based methods?

Because it’s easier, saves times and efforts, I don’t see any reason to go do it myself if I can get it at my home.

When you first used e-government, what was your motivation to participate in general?

No, there were no motivations.

In your previous e-government experience, if you have faced any problem with registration, conformation of your identity or any other possible complexity, would you still do your government work online?

I will contact the person who is responsible for the website, first by email, if no response, then by phone, if no response again, I will be obliged to go myself.

Will this be likely to stop using e-gov?

Only with that website, not all e-gov systems.

Please explain if your decision to use e-gov services affected by any of the following factors

Yourself: your age, gender, values and culture?

No, not at all.

Why?

Like I said, age doesn’t have any impact, whether young or old, as long as I am convinced by something I’ll do it.

As for gender, I think being a man gives me the possibility of going to the place where is the department, for a woman, she has to delegate someone or wait for e-government if it exists. So for me it doesn’t have any influence. The same for values and culture.

Do you think that the system itself, being easy or difficult, will affect?

Yes of course.

How?
If the website was complex, not clear, required a lot of things built in a way that won’t be easy to use for average people, it will be better to do it manually.

The transaction itself? Do you require it to be secure, clear, get a copy of it…?

As it is a government, I think security is required, and the user who will make a transaction should trust it, because it's a government.

Think about the following scenarios, which one is risky to the extent that makes you say no:

You did an online application then your personal data was theft.

I will never use this system, I’ll do it manually.

To what extent will this affect your future participation in e-gov programs?

I will not use that specific website, for example, if I use the traffic’s e-gov systems and my personal data was theft, I will never do my transactions with them online, I’ll do it manually; also, if the department of passports has made a good e-gov system, and there were no problems when using it, in this case I’ll apply electronically.

You did an online application then it got lost, you did again and again, but got lost each time;

It’s like what happened with the Saudi airlines, you book a ticket, and once at the airport they tell you that you did not reserve; so it’s now impossible that I will buy a ticket from them again; I will do it myself.

You did an online application, submitted all requirements though, it took more than usual processing time

This will end up my relation with e-gov.

Why?
Because some transactions need to be done quickly, like declarations or licenses…. in this case I will do it manually and save time. E-gov is for saving time and efforts, so if it fails in one of these, it’s no use.

What is your motivation to use e-gov?
Like I said, saving time, and comfort.

If a service is available both online and offline and use of Saudi e-gov website is too difficult to use would you still use you online facility?
Yes, I’ll use it.

Why?
Even if the website is complex, I think my familiarity with technology and language will help; because the two essential conditions comfort and time saving will still be there. But if there is no complexity, no delays, and no loss, there will be no problem.

What if the connection speed was very low?
I’ll use it in spite of this.

For example, I think that connection speed should be improved before building any e-gov systems.

Ok, I agree with you. I consider this as a preference, I would prefer if there was more speed.
What about the language used? Strange terms….

I prefer websites to be in Arabic and in English, because many people speak only Arabic and don’t have a second language.

Would you please share your experience with any e-gov websites or part of them that was not useful?

No, I didn’t have any experience with e-gov in Saudi.

I remember an online service, although I did never use it, but many colleagues say it is extremely complex and slow. You should upload the transaction, but they just give you 1mo of space, which obliges you to upload each page separately;

And all this should be done in three minutes;

I don’t know about time. Although we were doing it this transaction in a country where network speed is quite good. So I don’t where slowness comes from, from the network of the country we lived in, or from the website itself?

It’s slow because it’s hosted in Saudi.

So here is the problem.

These are the complexities that I still didn’t face, but maybe I’ll do it in the coming weeks.

In your views, what influences your decision to choose an online service rather than paper based methods?

Moving from one office to another, in government departments, the government staff who are not trained to receive people, all your transaction depends on the employee’s mood. They don’t have any policy. Third, the sections are not well arranged, you can have two sections of the same department in two different buildings, and the director in another building!

Is there any kind of displeasing behavior from the staff?

Yes, as I said, it depends on the mood of the employee. they are not trained to receive people, so they are likely to answer you in a way that is not good, although not injuring, but not good.

Is there any corruption?

Yes.

Does all this push you to use e-gov?

I will use it if it exists, it will make me avoid jumping up and down the stairs, and wasting time.
Please explain if it makes a difference if the service was conducted by the government itself, or by a contractor with the government?

I think it should be conducted by a contractor; the government doesn’t put the right person in the right place. The government can’t make e-gov if they don’t have the required experience. So we must have a company which is specialized in this field, and of course they will have a contract to set all conditions and penalties.

Will the existence of an e-policy encourage people to participate in e-gov and e-commerce?

Yes, everything lays on policies.

You said that government departments don’t have any policy?

Yes they don’t have any policy, but if they were controlled by independent companies, as companies do have policies, and they are specialized in this. Of course they should not take a beginner contractor, but choose a well reputed one.

When you used e-gov for the first time, did you feel excited because you were trying something new?

The first time I checked my traffic tickets online, I just wanted to test if they are credible. And I found it was true, and they also give you a specific transaction number so you can follow it.

As for the website of the cultural mission, I used it only because it was going to be very useful to me, as their department was in another city.

Will this excitement push you to use e-gov in the future, is excitement important?

Yes, it is.

Think of your e-government experience, such as applying for a visa, if you were asked to participate with a government that you don’t trust, would you still do it?

No I won’t do it if there is another method like fax, post, or do it manually.

Think about yourself when using e-government for first, second or any time, did you ever stop and ask yourself whether you trust this online program or this government agent?

This was only the first time; I won’t ask it again if I don’t have any bad experience with that website.

Please elaborate if you were worried to give your personal details? Like you ID number.

Yes, in the beginnings, in Saudi. Because they kept telling us that giving the ID number to someone can be dangerous.

Do you think there is a risk you are taking when using internet in e-gov or e-commerce?
I don’t think there is a risk, only in case the public service you applied for was given to another person, like if someone applies for a passport and they give the passport to another person, or if you apply for a license and they give it to another although you have already paid for it, so this will be a problem, and this is the only risk, but with an e-policy it will lessen.

**How do you overcome this risk?**

I can’t overcome it. Only if I face problems with the service, and in this case I will overcome it by doing the work manually.

**If you knew that e-government is citizen-centric would you still accept it?**

It’s like what they are doing in Saher program, they ask you to update you data and they will immediately send you a message to show if you have any traffic violation, So I thought that they just want me to update my data because they don’t have it. as it is an independent company, not a public one. I don’t know why, but there is no trust in the government, whether face to face or electronically.

**In your views, what will make you adopt e-gov and switch from paper based transactions to electronic ones?**

The most important reason is avoiding meeting that employee. You’ll face peak-hour traffic jams, search for a parking space, and once there you’ll need to waste time moving from one section to another, running…..You need a whole day to do only one simple transaction.

Maybe e-gov will make us avoid all these things.

**What do you want the Saudi government to do to convince you to engage with its e-government systems?**

I just want two things:

Control: there should be strict monitoring of the website; a committee or a special room which will look into any claim about the website.

The second thing is that they entrust it to a specialized company with excellent e-policy and good reputation, whatever it costs.

**You said that in Australia you used to participate in e-gov, but once back to Saudi you stopped, what changed? What is the difference between the services in Australia and Saudi?**

There is no comparison; in Saudi there is no e-gov, and even if it exists, the service is very modest, and always requires you to do it manually.

As for delivery, here in Saudi doing it manually is faster, because you follow the transaction yourself until it is done; electronically, I didn’t try it here, but regarding the cultural mission in Australia, the service delivery was quite good.
For example, one of my colleagues did an application, but took it himself to each of the concerned departments; and in a few hours, he got it done. For me, who did it electronically, it took me many weeks. So I think that doing it manually is better.

Have you heard of Yesser program? It is an initiative launched by the government in 2005.

No. In 2005, I didn’t even know what e-gov is.

Do you think is there any kind of awareness programs?

Neither the people nor the government are aware of it.

Maybe it’s only the idea of one person, and the rest of ministers or employees don’t even know about the matter. That’s why when they apply it, they do it in a barbaric way. and Yesser is a good example of this.

Do you think awareness programs are important?

Yes, that’s important.

For example, two weeks ago, there has been some change in the directorate of civil status, and they did some awareness programs about it, in newspapers. Although they should have used different means, once not all people read newspapers, like sending short messages, ads on TV, and at the departments themselves, or oblige people to use it.

I have two examples regarding an e-gov experience with the Saudi credit and saving bank. six or eight months ago, when I was doing my marriage, I wanted to apply for a marriage loan, so I went to the website, read all policies and information, and they required me to complete three forms. I printed the papers, filled them out, and went to see the department. Once there, I gave the application to the employee, everything was ok until he asked me to fill out the forms. I showed him the ones I printed from the site, but he told me they can’t accept it, because the papers they have are coloured. This is one of the disadvantages of using online services.

So why did they put it online if they don’t accept it?

I don’t know, I asked the employee, and he didn’t know too! The director told me the same thing when I spoke to him about this problem; after signing my application, he told me that the forms were not available in Riyadh, so it’s preferable to pick them from here.

The second situation is about one of my colleagues who came from Australia to live definitely in KSA, he specialized as an engineer. Looking for a job, he submitted many online applications, more than seven or eight companies, but each time he consults a company they tell him that they didn’t receive his application. And he tells them he did it online, they reply they don’t consider online applications. And these were not public companies. In another opportunity, he applied online for a job published by a semi-public company, but they didn’t answer him too. Until he did it himself; paper based, and went personally to city where they have their office.
So it’s useless.

Yes, using e-gov is useless.

From this we can deduce that they adopted it only to show the person who gave them this order, that they really did it.

Who is the person that gave them that order?

The person who issued this decision. like if the king says “launch e-gov services», so they’ll launch it, but nit use it. Like if the minister of labour says to employ Saudi staff, and they employ only one person.

So you think that government’s intentions are not clear.

Yes, because they don’t want to change anything, because they want to continue in corruption, manipulate the system as they wish….

I think policies exist, but they are not applied, so if they adopt e-gov as it should , I think it will people more open ,will lessen corruption ,and it will abolish the bad image of the current e-gov systems. and here lays all the problem, because they don’t apply it as it should.

Regarding the question I asked you previously, do you require any motivations to use e-gov in Saudi?

In the beginning, I said that I didn’t need any motivation. But after I saw what the other said, I changed my mind. I think a cultured or educated person will not need motivation, because his knowledge will make things easier for him. But people who are not educated, like my mother for example, they don’t like to use electronic methods. That’s why they will need motivations, like showing them the benefits they will get from e-gov, such as avoiding the pain of moving to the department, traffic jams, filling forms …..

So do you think that e-gov is just a service, or is it related to many other domains?

This was on my mind in the beginning, nut I forgot to tell you about it.

There are many advantages in launching e-gov services: you’ll make things easier to people, the area will benefit from it by avoiding congestions, avoid traffic jams, it will conserve the employee’s ethics, it may lessen road accidents, it will be beneficial for the economy by decreasing services costs. I think it is sufficient that it will make the employee feel comfortable; at least you’ll avoid insults. So there are many things that are related: health, traffic, statistics…. It may help.

Do you think that to apply e-gov as it should, the whole government should be re-structured?

I think they should start the change from the head; they should bring a good president. for example, it’s been more than 40 years that the minister of finance is on that position, for the minister of traffic it’s been more than 9 or 10 years, without doing anything significant. They don’t bring people specialized in administration, or they bring an Emir or someone who has
just got his doctorate degree. And this is what we lack, we should change the director, and sure this will reflect on all the employees under him, which will show results when adopting e-gov.

On another note, if you want to build anything, you’ll need a certain period of time, Singapore established itself in about 40 years, and emirates took only 12 years to do it!

**Do you think that it will be enough to make online services, or does it need to be integrated into education?**

It’s evident;

**Like training programs, improving infrastructures, improve networks….?**

I will give you an example.

It’s like the time when they made a national day, the first thing they did is providing education programs related to it, because this is something that will preserve their positions, they want to make people remember the person who united the kingdom, this is what they want from it; But the reason why people love the national day, is that it is a holiday, they motivated them with a holiday.

They should do the same for e-gov, motivate people, educate them and make them aware, and when they’ll realize how important and beneficial it is; people will adopt it naturally.

Like Saher also, they showed people how this system succeeded to decrease the number of traffic accidents in only one month.

I think they can do it if they really have this intention, but they should forget about showiness.

**Other information**

**Age Group: (25- 35)**

**Gender: male**

**Nationality: Saudi**

**Income Group: 10k-20k/month**

**Occupation: Laboratory specialist**

**Level of education: Master’s degree**

**Current location: KSA**

**Previous location: Australia, returned to Saudi after living in Australia for 4 years**

**Have you ever lived outside Saudi? Yes**