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FACTORS AFFECTING THE ADOPTION AND USAGE OF ONLINE SERVICES IN OMAN

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Abstract

Online services are a great solution to many trendy businesses and individuals if adopted and used properly, and if not will cause many interruptions to the businesses and end-users. This research paper investigates the factors that affecting the adoption and usage of online services in Oman. A survey questionnaire was used to explore the impact of some core influential factors on the adoption and usage of online services within the Omani context by testing the data that were collected from 270 participants in Al-Batinah North region. This study identifies the key influential factors such as usefulness, ease of use, cultural and social issues, awareness, trustworthiness, security, and privacy. The findings of this research show that there is a significant relationship between usefulness, ease of use, and trustworthiness with the adoption and use of online services in Oman. The results clarify the main factors that influence the decision of Omanis and other residents to adopt and use the online services that are provided by many firms in the Sultanate of Oman. The implication of findings is briefly discussed.

Keywords: **Online Services; E-Services; Influential Factors; Adoption; Usage; E-Oman**

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INTRODUCTION

The Internet has changed everything; entire industries, publishing firms, banks, airlines, government agencies, and many others will never be the same. Companies such as e-Bay, Amazon, Dell, etc. have created a very powerful mechanism to connect with their customers in order to provide pure and partial e-commerce. This new movement has created great opportunities to several industries and individuals to cut costs and save time, meanwhile it has also created threats and many other challenges. Public and private sectors as well as the end-users must work together to take advantage of this opportunities and overcome the associated risks. The Internet connection is available almost in every place and to everyone which assists many end-users to adopt and use the provided online services. It has also provided the platform for businesses and individuals to connect and meet in a virtual community which facilitate information sharing and e-business transactions. Firms realized the importance of being part of this e-business community and create many channels to grasp the end customers regardless to their locations. The huge shift from PCs to mobile devices by many businesses and individuals has contributed to make the location of sellers and buyers irrelevant which helps in extending the buying and selling activities everywhere to a large extent [1-4].

This rapid growth of using the Internet has increased the use of e-services in modern businesses which affects individuals, small, medium, and large organizations, and has also reformed the marketplace and business relationships. Adopting e-services by organizations and individuals becomes mandatory to facilitate many business transactions and enhance the relationship among business partners. Many steps have been taken by government and private agents to achieve the national digital strategy (e-Oman), but on the other hand the engagement of the end-users still needs enormous efforts and innovative ways to better engage and interact with the end-users. Very few studies investigated the factors affecting the adoption and usage of online services in the Arab world particularly in the Gulf region, therefore it very important to conduct such a study in Oman or any other Arab country. In Oman, there are many public and private organizations that provide online services, yet the usage of online services is very limited due to the absence of some of the influential factors such as usefulness, ease of use, cultural and social issues, awareness, trustworthiness, security, and privacy. This research will raise awareness and provide a clear understanding of the end-users' perceptions towards the online services in general and the related factors in particular within the Omani context.

The objective of this study is to understand the influential factors that influence the adoption and usage of online services in Oman and also to raise awareness of those important factors within the Omani context.

1. To examine the factors that would boost the usage of online services.
2. To understand the users' willingness to adopt online services.
3. To investigate the extent of online services' acceptance by end-users.
4. To understand the perceptions of the end-users towards the influential factors that influences the online services.

LITERATURE REVIEW

Online Services and the Influential Factors

The fast growth of Internet adoption and usage every day has increased the demand on online services in every sectors, this new movement has restructured the marketplace and the business relationships among businesses and individuals. Adopting the online services by businesses and individuals has become almost mandatory in the current fast growing digital economy. The literatures have identified several organizational factors that may affect the individuals and organizations decision to use and adopt the technology in different context. These factors include cultural, organizational, managerial, political, social, economic, and many other technological factors [5,6] .

In literatures there are numerous studies identified the factors influencing the end-users' decision to accept new technology. For instance, Baker et al. [7] considered the lack of awareness of any technology as essential concern related to the adoption and usage of that technology. Factors such as lack of familiarity, lack of awareness, culture and other factors will influence the adoption of online services significantly. Therefore, decision makers need to consider and understand these factors in order to encourage the use of technology instead of the traditional way of delivering services [8,9]. Ghobakhloo et al. [10] classified the factors influencing the users' adoption in small and medium sized enterprises (SMEs) into two major categories, internal and external factors. The internal factors were within the organizational context which consists of top management, organizational behavior and characteristics, and end-users (staff) and resources. The other external factors include IT products in market, external and competitive pressure, government and external IT consultant, and vendors.

Lee [11] used the theory of planned behavior to describe the factors affection the intention to use online financial services which indicates that the quality of information received from online services needs to be considered by the decision makers throughout many mechanisms. Khalil et al. [12] examine factors such as relative advantage, compatibility, complexity, trial ability and observability, their study aimed to explore the impact of such factors on using online banking among university students based on theory of diffusion of innovation (IDT). In Malaysia, Suganthi et al. [13] found that factors of accessibility, reluctance to changes, costs, trust, security concerns,

convenience, and ease of use are influencing the adoption of Internet banking. Another study by Naidoo [14] in South Africa identified the key factors that affect the acceptance and the adoption of electronic bill payment solution such as usefulness, time saving, cost saving, convenience, trust and self-efficiency. In India Malhotra et al. [15] investigated the Internet banking adoption by end-users which indicates that factors such as perceived reliability, perceived ease of use and perceived usefulness have a significant relationship with end-users' adoption.

Online Services in Arab Countries

Al-adwan et al. [16] investigated the factors affecting the impact of e-learning implementation in the Jordanian higher education system. The study was conducted on full time staff and students in two Jordanian universities and revealed that training and development were critically required prior to the implementation stage of e-learning system. Another study by Al-adwan et al. [16] shows the factors affecting the adoption of self-service technology by the Jordanian users which classified them into three groups, factors relating to automated teller machine technology, psychological factors, and demographic factors. The study was conducted on seven major banks located in Amman; it concluded that all the three groups affected the adoption of self-service technology. Naji [17] examined the factors influencing the teachers' acceptance to work on Moodle system at the Islamic university of Gaza as a case study which came up with factors such as service quality, system quality, technical support, confidence, satisfaction, perceived usefulness, and perceived ease of use that are affecting the acceptance of using Moodle system. Abukhzam et al. [18] highlighted several factors affect the intention to adopt e-banking technology by bank staff in Libya. The study identified lessons which can guide the future of e-banking implementation projects in Arab countries. Another study conducted in Lebanon to explore the critical factors influencing the e-banking adoption like intention, attitude, perceived behavioral control, trust, perceived usefulness, and perceived ease of use [19].

Alshehri et al. [20] observed the challenges and obstacles of e-government adoption in Saudi Arabia using an empirical study to survey 460 IT department employees from different public sectors. The study came out with a list of recommendations for the policy makers to improve the e-government services in Saudi Arabia. Al-Awadhi et al. [21], studied the e-government services adoption by in Kuwait, the study concluded that factors such usefulness, ease of use, reforming bureaucracy, cultural and social influences, technology issues and lack of awareness are affecting the adoption of e-government services in Kuwait. In UAE in 2012, a research identified the characteristics of UAE consumers and attitude toward the Internet banking. The study realized that security is the most factors influencing the adoption of Internet banking in UAE [22]. Swid et al. [23] conducted a study to investigate the factors affecting the consumer intention to use e-services among telecommunication providers in Bahrain. The study examined the effect of regulatory environment on the users' intention to adopt e-services; it has been found that there is a significant impact of perceived ease of use and perceived usefulness on the users' intention to adopt e-services.

Online Services in Oman

The number of Internet users in Oman is growing significantly. According to the Internet Word State Report the number of Internet users in Oman was 2,584,316 as on Dec 31, 2014 representing 78.6% of the population [24]. The UN e-government report stated that the Omani e-government has been improved in the global rankings jumping from 64 in 2012 to 84 in 2014 [25]. However, there are many barriers preventing many Internet users to adopt and use the online services. A study has been conducted in Oman by AlShihi [26] highlighted some barriers affecting the adoption and usage of the e-government services in Oman such as users' lack of IT Knowledge, awareness and motivation, absence of marketing campaigns, users' lack of trust and confidence. Al-Rahbi, et al. [27] studied the technical factors affecting the e-government in six government agencies in Oman which are ICT infrastructure, IT security, IT standards and technical expertise. According to Alraja et al. [28], trust and relative advantage are significantly affecting the online intention to use e-government in Dhofar citizens. E-business is growing rapidly in Oman and elsewhere and everyone should take advantage of this technology to contribute in the national strategy e-Oman and to be part of the global digital strategy. Limited studies have been found in literature investigating the factors influencing the adoption and usage of online services in Oman. This research will contribute to the literature by exploring the major influential factors that enhance the usage and adoption of online services within the Omani society. The outcome of this research is expected to assist the decision makers to have a better and deeper understanding of users' perception towards the usage and adoption of online services to develop and provide more effective e-services.

Summary of Literature Review in Several Countries

Table 1 presents the key influential factors that affecting the adoption and usage of e-services in several countries. All influential factors that are used in this study to investigate the impact of these factors on the adoption and usage of online services are presented in one or more studies in literatures.

Table 1: Summary of literature review in several countries.

1.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
OMAN	Factors Affecting M-commerce adoption in Oman using Technology Acceptance Modelling Approach	Naqvi et al. [29]	2014	To explore the factors affecting the adoption of M-commerce services in Oman using the Technology Acceptance Model (TAM) approach.	Quantitative survey questionnaire 89 respondents of which 61% were male and 39% female.
	Main factors	**Data analysis**	**Major findings**	**Significance of the**	**Conclusion**

		methods		**study**	
	users' attitudes security privacy trust regulatory framework, legislations, awareness, risks uncertainties' speed, user friendly	Computing and comparing the percentages of the users' responses.	Many mobile users were unaware of the M-commerce services initiatives as there were no or very little publicity and marketing campaigns to promote them. Many individuals were unaware of the benefits of using M-commerce service. Many users were not fully comfortable in using their mobile devices and were not so keen to try the new services. Many users experienced slow responses from the mobile networks or its unavailability. Many users felt the cost of SMS and MMS were high which limit the adopters of these services	This study is an attempt towards understanding and highlighting the issues related to the adoption of M-commerce services recently offered in Oman.	The trust appears as one of the major inhibiting factor for adopting M-commerce services. Individuals appear to have doubts over business transactions security and its confidentiality and the lack of firm legislations in the country. The main limitations of the study are the sample size and robust analytical model.
2.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
UAE	Adaptation of Internet Banking In UAE: Factors Underlying Adoption Characteristics	Mansumitrchai S [22]	2012	To identify the characteristics of UAE consumers and their attitudes toward the Internet banking.	Qualitative and quantitative research methods were used. The qualitative method was used to gain insight into how consumers value the online banking -Two different focus groups, adopters and non-adopters, were interviewed.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Compatibility Difficulty Security Trust Third Party Concern Status Human Contact	Analysis of variance (ANOVA)	There is a difference between adopters and non-adopters' attitudes toward three factors of adoption: compatibility, trust, and human contact. No significance differences were found between the attitudes of adopters and non-adopters toward the issues of security, third party concern and status.	The Factor analysis suggested seven characteristics that important for Internet banking adoption, namely compatibility, difficulty, security, trust, third party concern, status,	Investigating and comparing of characteristics of the adoption of Internet banking between adopters and non-adopters. There is a difference between adopters and non-adopters on

			An interesting finding was that the human or physical contact and trust were the most important factors for non-adopter. Compatibility was an important attribute for the adoption of online banking, indicating that consumers in UAE preferred innovations for their lifestyle. Ease of use, convenience and twenty-four-hour availability of services from online banking was favourable for UAE consumers.	and human contact.	their perceptions of online Banking adoption on three factors (compatibility, trust and human contact). The limitation of this study is the sample selection, due to non-random sampling.
3.	**Title**	**Authors**	**Year**	**Research objectives**	**Research Methodology**
	Adoption and use of E-Government Services In The Abu Dhabi Police Force: A Qualitative Study	Hassan et al. [30]	2012	To identify and understand factors affecting the diffusion, adoption and use of e-services in a public sector organization.	Qualitative 39 participants' interviews from different management levels and ranks.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Age Education Position	Several analysis	Younger participants in certain departments displayed more interest in adopting and using e-services. Education has a large hand in changing individuals' attitudes towards acceptance and use of innovative technologies. The position that one holds within the organization impacts the acceptance and use of innovation.	The contributions from this research are anticipated to be a better understanding of the diffusion, adoption and use of e-services in the UAE region.	Age, education level and position are influencing the adoption of e-government services in UAE.
4.	**Title**	**Authors**	**Year**	**Research objectives**	**Research Methodology**
Qatar	Factors Affecting E-Government Adoption in The State of Qatar	Al-Shafi et al. [31]	2010	To Explore The Factors Affecting E-Government Adoption in the State of Qatar	Survey questionnaire was selected as the primary data collection method 35 closed format questions were used limiting individual responses to multiple choice.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Facilitating condition Performance Expectancy Effort Expectancy	Regression analysis	That effort expectancy and social influences Determine citizens' behavioral intention	This research presents an initial attempt towards	Performance Expectancy, Social Influence, and

	Social Influence Behavioral intention to adopt Adoption behavior Gender Age Education level		towards e-government. Additionally, facilitating conditions and behavioral intention were found to determine citizens' use of e- government services in Qatar	understanding the adoption of the e-government Services in Qatar from citizen's perspective	Facilitating Conditions significantly influenced the behavioural intention to use of citizens for adopting e-government services in Qatar.
5.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
Saudi Arabia	Factors Influencing E-Commerce Adoption By Retailers In Saudi Arabia : A Quantitative Analysis	AlGhamdi et al. [32]	2010	To identify and explore key issues that positively and negatively influence Saudi retailers in deciding whether to adopt the online channel or not.	Quantitative analysis-148 participants
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Trust government support assistance for e-commerce ICT Infrastructure educational programs unfavorable Saudi consumer habits, lack of government regulations, lack of online payment options	Several analysis	Listing the key factors that affect retailers' decision to adopt e-commerce	Understanding the adoption of the e-commerce by retailers in Sadia Arabia	Government and the industry should pay attentions to these factors to facilitate e-retail growth in the country.
6.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
	Factors Influencing the Adoption and Usage of Online Services in Saudi Arabia	Al-Ghaith et al. [33]	2010	To investigate the factors influencing the adoption and usage of e-service in Saudi Arabia. To raise awareness and enhance understanding of factors that influence adoption and usage of online services in Saudi Arabia in the light of the Rogers' (2003) diffusion of innovations theory DOI.	Quantitative 651 individuals participated in a survey questionnaires.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Relative Advantage Compatibility Complexity	Regression	Perceived complexity factor was found to be the most significantly related factor affecting e-	Understanding the factors influencing the online services	This study covered the online services that are offered by

	Observability Trainability Demographic Variables Cost of the Internet Quality of the Internet, Quality of e-service Security of e-Trust Compatibility, Complexity Observability		service adoption in Saudi Arabia, followed in turn by Privacy and Compatibility. Quality of the Internet and its relative advantage also had a notable effect on e-service usage and adoption in Saudi Arabia.	users to help the decision makers to improve the service provided.	Internet websites in Saudi Arabia Rogers (2003) showed demographic attributes play an important role in predicting adoption and that economic status (income) is highly correlated to initial adoption Complexity was the best predictor of e-service adoption. Relative advantage was the second predictor of e-service adoption Compatibility was the predictor of e-service adoption.
7.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
Kuwait	Factors Influencing the Adoption of E-government Services	Al-awadhi et al. [21]	2009	Identified the attitudes and perceptions of the citizens of Kuwait, a developing country, towards the adoption of e-government services.	Quantitative
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Usefulness ease of use reforming bureaucracy cultural and social influences technology issues lack of awareness	percentages of the users' responses	Attractive awareness campaigns are very important for the adoption of online services.	Provides useful insights into the motivations underlying the intentions to use e-government services in developing countries.	In order to attract users to adopt these services, the decision makers should provide an efficient and should meet their specific needs. Attractive awareness campaigns should be conducted; easy services and available sources and knowledge should be provided to the users.
8.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
Gulf Countr	Technology Adoption in The Arabian Gulf Countries: The Case of E-Government	Omari [34]	2013	To investigate the advantages of implementing e-government	Qualitative

				systems throughout Arabian Gulf countries. To discuss the challenges facing the adoption of e-government in the Arabian Gulf countries. To highlight some important points that need to be taken into account in all phases of the engineering process of the e-government.	
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Infrastructure, Policy issues Human development, continuous learning Change management Strategy, Cultural differences Ease of use, E-Bureaucracy	Descriptive	There is an advantage of reducing cost, time, efforts, and bureaucracy.	The understanding of these advantages can help decision-makers recognize the success and risk factors in e-government adoption. Also, understanding the culture requirements and considering it during the design process.	Some practices and design strategies should be considering in during the design phase of e-government website.
9.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
Iran	Factors influencing the adoption of Internet banking	Naimi Baraghani [35]	2007	To investigate the adoption and usage of Internet banking transactions by individuals in Iran as an example of a developing country.	Quantitative
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Perceived usefulness Perceived ease of use Attitude Perceived Behavioral Control Subjective norms Perceived Risk Intention of construct trust	Regression	Attitude, Perceived Behavioral Control, perceived usefulness, Perceived ease of use have significantly effect on influencing the adoption of Internet banking	The Internet banking is a worthwhile topic to study so that the quality of services in Iranian banking sector can be enhanced for the future. There is a need to understand	The study shows that there is a problem in using the Internet in the middle east, and there is a lack of experience within individuals and organizations, and most of the potential users are unqualified.

				user's acceptance of Internet banking and a need to identify the factors that can affect their intention to use Internet banking.	
10.	**Title**	**Authors**	**Year**	**Research Objectives**	**Research Methodology**
Ethiopia	Analysis of factors influencing customers' intention to the adoption of E-banking services channels in Bahir Dar city : an integration of TAM, TPB, and PR.	Takele et al. [36]	2013	To examine the determinants of customers' intention to adopt e-banking service channels in Bahir Dar city by deriving factors from (TAM).	Quantitative, 10 commercial banks were surveyed in Bahir Dar city.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Perceived usefulness Perceived ease of use Attitude Perceived Behavioral control Subjective norms Perceived Risk	Regression	The seven factors of the study were significantly influencing the users' behavioural intention to use e-banking.	Understanding the factors influencing the e-banking services users help the decision maker to improve the service provided	The factors that included in the model of this research are significantly influencing the adoption of e-banking services.
11.	**Title**	**Authors**	**Year**	**Research objectives**	**Research Methodology**
	Factors influencing the adoption of M-commerce: An exploratory Analysis	Sadi et al. [37]	2011	To identify some factors that affect the adoption of M-commerce in Malaysia based on traditional technology models such as Theory of Reason Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and Diffusion Innovation theory (DOI).	600 questionnaires were distributed and 349 usable questionnaires returned after 28 questionnaires omitted due to the missing data found.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Perceived Usefulness Perceived Ease of Use Personal Innovativeness Perceived Trust Perceived Cost Subjective norms Perceived Behavioral	An exploratory factor analysis	All the thirteen (13) factors were statistically significant and can affect the adoption of m-commerce**.**	Finding the major factors influencing the adoption of M-commerce.	Improvement required for M-commerce in order to attract more users in Malaysia. Perceived usefulness found to be one of the critical

	Control Facilitating Conditions Self-Efficacy Attitude towards Use connection speed secure systems easy transaction method				factors affecting these services.
12.	**Title**	**Authors**	**Year**	**Research objectives**	**Research Methodology**
Kenya	Factors Influencing the Adoption of Internet Banking in Kenya: A Case of Imperial Bank	Warui [38]	2014	To investigate the factors influencing the adoption of Internet banking among users using a case of Imperial bank in Kenya.	Descriptive research design. The research population was 4,916 which consisted of 476 employees "Structured questionnaires".
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Security users 'attitude Internet payment	Descriptive analysis: transforming a mass of raw data into tables, charts, with frequency distribution and percentages.	The findings on the perception of security and utilization of Internet banking services indicated that customers face a dilemma between desirable and undesirable consequences of the adoption and hence face a risky decision on security. Insufficient trust on financial institutions is a critical perceived credibility issues that lower Internet banking acceptance. Customer trust is an essential way to retain existing bank customers as well as encouraging the adoption of Internet banking.	Provide a practical understanding of Internet banking among the financial institutions. From a practical standpoint, the study can provide banks with a better understanding of the determinants of Internet banking acceptance and be able to address and review their Internet banking strategies, website features, and online security features.	The study recommends that banks should ensure Internet banking security to boost consumer confidence. Internet banking should be trustworthy and secure to avoid undesirable consequences in the face of risky decisions. There should be a fast response time to answer customer queries in relation to Internet banking services. Banks should hire well knowledgeable and qualified personnel to answer customer queries.
13.	**Title**	**Authors**	**Year**	**Research objectives**	**Research Methodology**
Mexico	Factors Underlying the Adoption of Online Banking by Mexican Consumers	Mansumitrchai et al. [39]	2011	To examine the factors underlying the adoption characteristics of Internet (online) banking by Mexican consumers.	Qualitative and quantitative approaches.
	Main factors	**Data analysis methods**	**Major findings**	**Significance of the study**	**Conclusion**
	Difficulty,	Analysis of	The results from factor	Benefit for both	There is a difference

	Trust, Compatibility, Third party concerns, Human contact, Social influence, Security Computer Proficiency	variance (ANOVA)	analysis suggest eight characteristics of the adoption, namely difficulty, trust, compatibility, third party concerns, human contact, social influence, security, and computer proficiency. The results show statistically significant differences on the adoption between adopters and non-adopters on four factors (difficulty, trust, compatibility and human contact).	academics and financial institutions.	on the adoption of online banking between the adopters and non-adopters.

RESEARCH METHODOLOGY

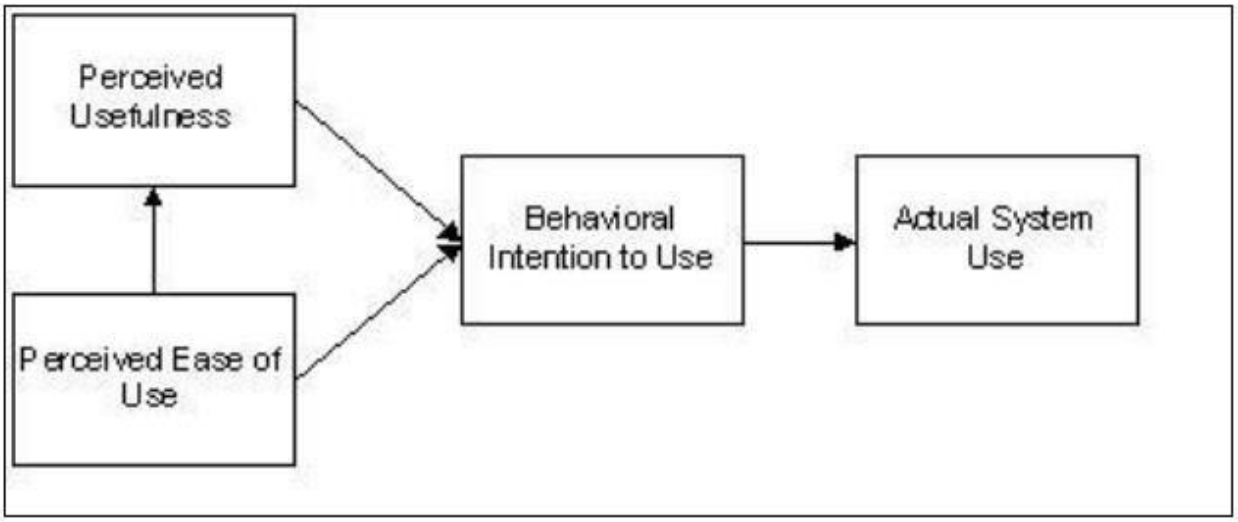
This research attempts to investigate the impact of the influential factors on adoption and usage of online services in Oman. A field study has been conducted in a natural e-business environment where a questionnaire survey has been used in order to collect data related to the variables of interest in this research. The questionnaire has been posted to e-services' end-users in Oman as they have been the key informant and the unit of analysis for this study. The population of this research was all e-services' end-users in Oman, whereas the sample has been determined using convenience sampling technique. The design of the questionnaire for this research requires variety of measures and items which has been collected and adapted from different sources. The selection of the factors of this study is based on the expected significant contribution of these factors in improving the adoption and usage of online services in Oman.

Seven factors have been selected as the major influential factors that improve the adoption and usage of e-services and this is after extensive literature review, the factors are usefulness, ease of use, cultural and social issues, awareness, trustworthiness, security, and privacy. This study went through the basic research phases such as proposal writing, which includes observation, preliminary data gathering, problem definition, and review of literature; theoretical framework and hypothesis; research design; data collection and analysis; and report writing and presentation. This research is based on Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA). TAM is a tool to test the adoption of any new technology by end-users [40,41]. It is a common tool and widely used to measure the consumers' intention to accept or decline a particular technology. It is proposed by Davis [42] in 1986 and help to predict the users' behavior of any piece of information technology [43]. TAM addressed two particular beliefs which are:

- Perceived usefulness (PU): The perspective of user that using the technology will improve the performance of the work by increasing the work productivity, effectiveness and useful.
- Perceived ease of use (PEOU): The perspective of user that using the

technology will reduce the effort require for doing the work by easy, clear, controllable, and understandable system (Figure 1).

Figure 1: Schematics of the theory Technology Acceptance Model TAM. Source: Davis et al. [40], Venkatesh et al.

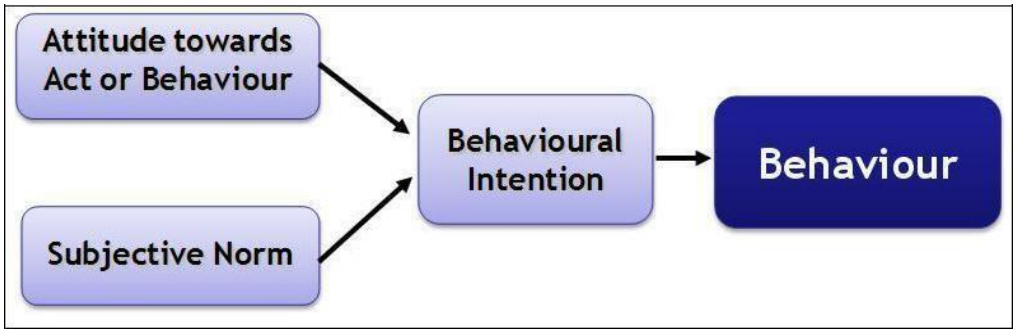


The TRA was first developed in the late 1960s by Martin Fishbein and Icek Azjen. It explains the users' intentions to actually use the system and behave in a way that gives direction to consumers' behavior toward innovation which links behavior, beliefs, norms, intentions, and attitudes together. TRA addressed two particular beliefs which are:

- Attitude towards an act or a behavior: i.e. the degree in which the behavior performance is positive or negative. O Subjective norm: i.e. the person's perception toward any behavior [44].

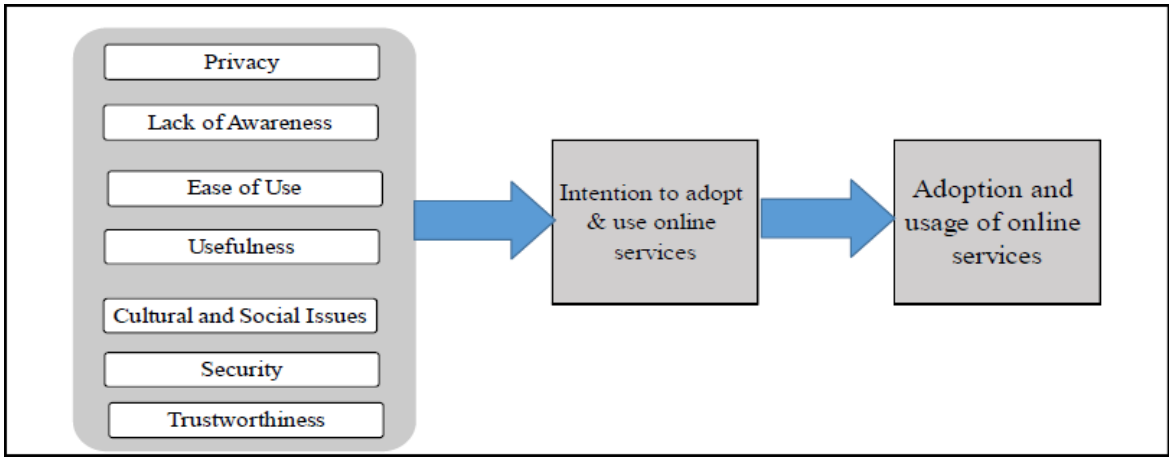
The theory can be summarized by this equation, Behavioral Intention=Attitude + Subjective norms [45] (Figure 2).

Figure 2: Schematics of the theory of reasoned action (TRA).



Based on the above theories the following framework has been developed to examine the relationship between the critical influential factors and the adoption and usage of online services (Figure 3):

Figure 3: The Research Framework.



The purpose of this research is to examine the impact of influential factors on the adoption and usage of online services throughout testing the relationship between the proposed variables. Therefore, the following hypotheses have been developed:

H_1: Privacy is positively related to the adoption and usage of online services in Oman.
H_2: Awareness is positively related to the adoption and usage of online services in Oman.
H_3: Ease of Use is positively related to the adoption and usage of online services in Oman.
H_4: Usefulness is positively related to the adoption and usage of online services in Oman.
H_5: Cultural and Social Issues are positively related to the adoption and usage of online services in Oman.
H_6: Security is positively related to the adoption and usage of online services in Oman.
H_7: Trustworthiness is positively related to the adoption and usage of online services in Oman.

The following Table 2 presents a summary of each variable that is used in this research model which includes clarification and the source of each variable.

Table 2: Summary of Variables.

Variable	Explanation	Source
Usefulness	The degree to which a person believes that using online services would enhance the job performance and serving some purposes.	Sadi et al. [37], Mansumitrchai [22], Naimi Baraghani [35], Al-Ghaith et al. [33], Takele et al. [36]
Ease of Use	The degree to which a person believes that using online services would be free of effort.	Naimi Baraghani [35], Omari [34], Sadi et al. [37], Al-Ghaith et al. [33], Yitbarek Takele et al. [36]
Cultural and Social Issues	The degree, to which peers influence use of the system, be it positive or negative.	Al-Awadhi et al. [21], Mansumitrchai [22], Al-Ghaith et al. [33]
Awareness	The degree to which a person is unconscious, ignoring and has no intention to use online services.	Al-Shafi et al. [31, Sathye [46], Polatoglu et al. [47]
Trustworthiness	The degree to which a person belief, depend on and confidence in online service.	Naqvi et al. [29], Naimi Baraghani [35], Al-Ghaith et al. [33]
Security	The degree to which the online services is protecting the user information and begin free of harm.	Naqvi et al. [29], Mansumitrchai [22], Naimi Baraghani [35], Warui [38], Al-Ghaith et al. [33]
Privacy	The degree to which the online services is protecting the user information.	Naqvi et al. [29], Mansumitrchai [22], Naimi Baraghani [35], Al-Ghaith et al. [33]

ANALYSIS AND FINDINGS

Response rate

A total of 270 usable questionnaires were received out of 400 questionnaires distributed conveniently to the participants in different places in Al-Batinah north region. Out of that 168 were male represents 62.2 percent and 102 were female represents 37.8 percent; however, 79.3 percent of the participants are Omanis. The majority of the respondents were between 19 to 45 years of age group and most of them are married, their salary mostly ranges between 1000 to 2000 Omani Rial. 44 percent of the participants are working in government sectors, 39.3 percent in private sectors, and 16.7 percent are others including students, unemployed, or they have their own business. Table 3 presents the demographic profile of the respondents.

Table 3: Summary of Demographic Profile of Respondents.

Variables	Category	Frequency	Percentage
Gender	Male	168	62.2
	Female	102	37.8
Nationality	Omani	214	79.3
	non-Omani	56	20.7
Age	less than 18	9	3.3
	Between 19-30	127	47.0
	Between 31-45	108	40.0
	Between 46-60	25	9.3
	more than 60	1	0.4
Marital Status	Married	166	61.5
	Divorced	7	2.6
	Single	96	35.6
	Widower/Widow	1	0.4
Occupation	Government employee	119	44
	Private sector	106	39.3
	Others	45	16.7
Monthly income	Less than 500 OMR	61	22.6
	between 501-1000 OMR	88	32.6
	between 1001-1500 OMR	78	28.9
	between 1501-2000 OMR	22	8.1
	more than 2001 OMR	21	7.8

Reliability analysis

Reliability analysis has been conducted in order to measure internal consistency across items in the instrument which provided by Coefficient Alpha (α) or Cronbach's Alpha. The Cronbach's Alpha of the measures in this study was all above the lower limit of acceptability which is 0.60 (Cronbach's Alpha>0.60). Table 4 presents the reliability analysis for this study which shows that Cronbach's Alpha is equal to 0.83 and that highly reliable (Table 5).

Table 4: Reliability Analysis of Scales.

Item	Result
Cronbach's Alpha	0.83
Split-Half (odd-even) Correlation	0.74
Spearman-Brown Prophecy	0.85
Mean for Test	104.14
Standard Deviation for Test	14.80

The usage of online services

Around 32 percent of the respondents are using online services more than 20 times per single day, and 18 percent of them are using the provided online services between 10 to 20 times per day. However, minimum 5 to 10 times per day are the usage of online services by around 25 percent of the respondents.

Table 5: Online services usage information.

Variables		**Frequency**	**Percentage**
Frequency of online services usage	Less than 5 times	68	25.18
	Between 5 and 10	68	25.18
	Between 10 and 20	48	17.77
	More than 20 times	86	31.85
The place of using the online services	Home	215	79.62
	Library	24	8.88
	Workplace	120	44.44
	Café	30	11.11
	Other places	41	15.18
The mode to know about the provided online services	Newsletter/magazine	69	25.6
	TV/Radio	72	26.7
	Referred by friend	133	49.3
	Word of mouth	34	12.6
	Others	52	19.3
The mechanism by which participants use the online services	Mobile	248	92.22
	Laptop	123	45.55
	Office Computer	86	31.9

	Tablet	44	16.3
	Others	13	4.8

Hypotheses testing

The following Table 6 indicates significant correlation among most of the independent variables that affecting the adoption and usage of online services and with the dependent variable as well which is the adoption. However, variables such as usefulness ($r=0.36$, $p<0.01$), ease of use ($r=0.43$, $p<0.01$), cultural and social issues ($r=0.22$, $p<0.01$), trustworthiness ($r=0.51$, $p<0.01$), and privacy ($r=0.31$, $p<0.01$) are significantly and positively correlated with the adoption and usage of online services.

Table 6: Summary of Correlation Analysis.

Measures	USE	EASE	CSI	A	TRUST	PRI	SEC	ADOP
Usefulness (USE)	1.00							
Ease of Use (EASE)	0.491**	1.00						
Cultural and Social Issues (CSI)	0.148*	0.272**	1.00					
awareness (A)	-0.148*	-0.066	0.339**	1.00				
Trustworthiness (TRUST)	0.246**	0.258**	0.269**	0.049	1.00			
Privacy (PRI)	0.174**	0.231**	0.213**	0.251**	0.483**	1.00		
Security (SEC)	0.237**	0.201**	0.381**	0.049	0.008	0.209**	1.00	
Adoption (ADOP)	0.355**	0.429**	0.216**	0.045	0.508**	0.309**	0.113	1.00
Note: *Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).								

According to the results in the Table 7 below the influential factors explain 36% of the variance in adoption and usage of online services ($R^2=0.36$). The F value is around 21 and the significant linear model is at alpha=0.01 which indicates that all the variables collectively make a significant contribution to the adoption and usage of online services. Trustworthiness and ease of use are the two major factors that contribute significantly in the influence of adoption and usage of online service as they have the largest beta coefficient among all factors ($\beta=0.38$, $p<0.01$) and ($\beta=0.20$, $p<0.01$) respectively, this followed by usefulness ($\beta=0.091$, $p<0.05$) which contributes significantly but comparatively low. On other hands, security, awareness, and privacy are also contributing positively to the effect on the adoption and usage of online service but not significantly. However, cultural and social issues show no contribution at all to the overall adoption of these services.

Table 7: Multiple Regressions: (Std. Beta coefficient).

Factors affecting the adoption and usage of online services	Adoption and usage of online services
Usefulness	0.091**
Ease of Use	0.204***
Cultural and Social Issues	-0.011
Awareness	0.068
Trustworthiness	0.381***
Privacy	0.016
Security	0.009
R	0.600
R^2	0.360
Adjust R^2	0.343
F	20.90***
Notes: Significant levels: ***p<0.01; **p<0.05; *p<0.1	

Table 8 presents the summary of hypotheses testing for the adoption and usage of online services in Oman. The research findings supported all the proposed hypotheses except one which is hypothesis number 5 cultural and social issues where its standard beta coefficient shows negative result. The definition of cultural and social issues is the degree to which peers influence the use of the system, be it positive or negative. However, in this study the culture and social issues were negatively related to the adoption and usage of online services in Oman.

Table 8: Summary of the hypotheses testing for the adoption and usage of online services in Oman.

Hypotheses No.	Statement of Hypotheses	Remarks
H_1	Privacy is positively related to the adoption and usage of online services in Oman.	Accepted
H_2	Awareness is positively related to the adoption and usage of online services in Oman.	Accepted
H_3	Ease of Use is positively related to the adoption and usage of online services in Oman.	Accepted
H_4	Usefulness is positively related to the adoption and usage of online services in Oman.	Accepted
H_5	Cultural and Social Issues is positively related to the adoption and usage of online services in Oman.	Rejected
H_6	Security is positively related to the adoption and usage of online services in Oman.	Accepted
H_7	Trustworthiness is positively related to the adoption and usage of online services in Oman.	Accepted

CONCLUSION

The findings of this study indicate that, privacy, awareness, ease of use, usefulness, security, and trustworthiness are all positively influencing the adoption and usage of online services in Oman. The existence of these influential factors will contribute toward enhancing the perceptions of the end-users to adopt and use the available online services which will encourage many users to do most of the transactions online and that will help many stakeholders to save time and efforts. The outcome of this study is providing the decision makers a better and deeper understanding of the users' perceptions towards the adoption and usage of online services to develop and provide more effective e-services architecture that motivates the end-users to use the provided online services and eventually contribute to the national digital strategy, known as e-Oman. As more private and public organizations adopt online services, it becomes important for these organizations to identify factors that influence end-users' adoption. The factors that being investigated in this research are giving a clear thoughtful about the users' perceptions which will help many firms to develop some critical factors in order to improve the current e-services and therefore satisfy the end-users.

In order to have better understanding of the end-users' perceptions towards the online services and to improve the representation of population, the survey should be extended to another states in Oman to cover a larger sample size to get more respondents from different background and different environment. The research would also propose a future field of study known as co-created e-services which can help the end-users and the e-services providers to work and interact closely with each other to share ideas for better development of the existing e-services. Currently in Oman there are many end-users are not fully aware and they do not take full advantage of all available online services that provided by many private and public organizations. This is mainly due to lack of awareness that the online services are easy to use, secure, and very useful for all stakeholders particularly the end-users. The continuance enhancement of the influential factors such as privacy, lack of awareness, ease of use, usefulness, security, and trustworthiness will certainly enhance the adoption and usage of online services in Oman.

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