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**FACTORS INFLUENCING E-GOVERNMENT SERVICES  
USAGE BEHAVIOUR AMONG SAUDI ARABIA'S SME  
EMPLOYEES**



**DOCTOR OF PHILOSOPHY  
UNIVERSITI UTARA MALAYSIA  
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**FACTORS INFLUENCING E-GOVERNMENT SERVICES USAGE  
BEHAVIOUR AMONG SAUDI ARABIA'S SME EMPLOYEES**



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Awang Had Salleh  
Graduate School  
of Arts And Sciences

Universiti Utara Malaysia

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## Abstrak

Absher adalah platform e-kerajaan yang menyediakan kemudahan dan meningkatkan perkhidmatan elektronik untuk warganegara dan agensi / perniagaan di Arab Saudi. Namun, kurang penggunaan e-perkhidmatan yang diberikan oleh Absher di kalangan pekerja PKS dilaporkan. Kajian empirikal kurang mengungkap isu penggunaan e-kerajaan oleh pekerja PKS-Arab Saudi. Kajian ini menyelidiki faktor-faktor yang menghalangi pekerja PKS untuk melakukan tugas kerja peribadi mereka melalui perkhidmatan e- Absher. Model bersepadu dicadangkan berdasarkan teori dominan. Data dikumpulkan menggunakan soal selidik berstruktur dari sampel 477 pekerja PKS dari industri yang berbeza di Saudi. Analisis dilakukan dengan menggunakan Covariance-Based Structural Equation Modeling (CB-SEM) melalui AMOS untuk menilai hubungan antara faktor yang dicadangkan dan tingkah laku penggunaan perkhidmatan Absher. Hasil kajian menunjukkan bahawa ketidakamanan dan ketidakselesaan mempunyai kesan negatif, sementara optimisme, keadaan pemudah cara, pengaruh sosial dan kebiasaan mempunyai pengaruh positif terhadap niat tingkah laku untuk menggunakan perkhidmatan e-kerajaan di kalangan pekerja PKS-Saudi. Penemuan juga mendapati bahawa walaupun tidak ada hubungan langsung antara memfasilitasi keadaan dan kebiasaan, dan tingkah laku penggunaan, niat tingkah laku secara signifikan memantapkan hubungan ini dan semua hubungan lain antara pemboleh ubah bebas dengan tingkah laku penggunaan. Tambahan pula, jantina secara sederhana mempengaruhi kesan ketidakselesaan, rasa tidak selamat, optimisme, dan kebiasaan terhadap niat tingkah laku untuk menggunakan perkhidmatan e-kerajaan di kalangan pekerja PKS di Arab Saudi, usia dengan ketara mempengaruhi kesan ketidakamanan, pengaruh sosial, dan kebiasaan terhadap tingkah laku niat, dan pengalaman ICT secara signifikan mengurangkan kesan ketidakamanan, ketidakselesaan, pengaruh sosial, dan kebiasaan terhadap niat tingkah laku. Model tersebut sebagai hasil dari penemuan kajian dapat membantu pembuat kebijakan dan pembuat keputusan untuk menyesuaikan perkhidmatan e-kerajaan dengan pilihan dan keperluan pekerja PKS dengan lebih baik, yang seharusnya menghasilkan tingkat penggunaan yang lebih tinggi.

**Kata kunci:** KSA, PKS, Niat tingkah laku untuk digunakan, Ketersediaan teknologi.

## Abstract

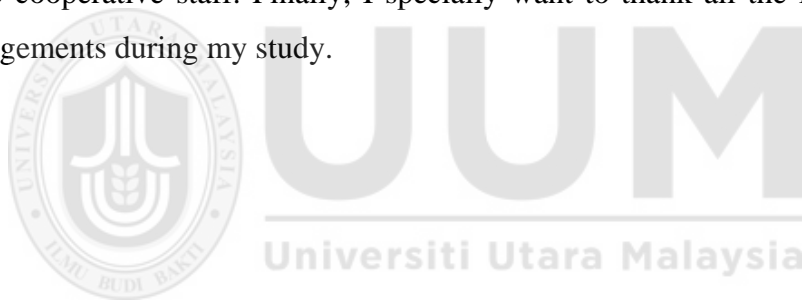
Absher is an e-government platform that provides facilities and enhances e-services for citizens and agencies/businesses in Saudi Arabia. However, less usage of e-services provided by Absher amongst the SME employees is reported. There are no empirical studies to uncover the issue of the uses of e-government by employees of SMEs-Saudi Arabia. This work investigates the factors hindering the SMEs employees to perform their personal work tasks through Absher e-services. An integrated model was proposed based on the dominant theories; the Unified Theory of Acceptance and Use of Technology 2 (UTUAT2) and Technology Readiness Index (TRI) by considering the context of the study. The proposed model encompasses insecurity, discomfort, optimism, social influence, facilitating condition, and habit as independent variables, behavioural intention as a mediating variable, gender, age, and ICT experience as moderating variables, and use behavior as dependent variable. Data were collected using structured questionnaires from a sample of 477 SME's employees from different industries in Saudi Arabia. The analysis was conducted using Covariance-Based Structural Equation Modeling (CB-SEM) via AMOS to evaluate the relationships among the proposed factors and the use of behaviour of Absher services. The findings showed that insecurity and discomfort have a negative effect, while optimism, facilitating condition, social influence and habit positively affect the behavioural intentions for using e-government services by employees of SMEs-Saudi Arabia. The findings also showed no direct relationships between facilitating conditions and habits, and the use behaviours. Behavioural intention significantly mediates these relationships and all other relationships between the independent variables and the use of behaviour. Furthermore, gender significantly moderates the effect of discomfort, insecurity, optimism, and habit on the behavioural intentions for using e- government service by the staff of Saudi Arabia SMEs while age significantly moderates the effect of insecurity, social influence and habit on the behavioural intention. Also, ICT experience considerably moderates the influences of insecurity, discomfort, social influence, and habit on the behavioural intention. The model as an output from the findings of the study can help policy and decision makers to better tailor e-government services to the options and needs of SMEs' employees leading to higher levels of usage.

**Keywords:** KSA, SMEs, Behavioural intention to use, Technology readiness ...

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## Lists of Abbreviations

AGFI	Adjusted Goodness of Fit Index
AVE	Average variance extracted
BI	Behavioural Intention
CCC	Gulf Cooperation Council
CFA	Confirmatory Factor Analysis
CFI	Comparative-fit-index
CR	Ccomposite reliability
DF	Degree of freedom
DIS	Discomfort
DMISM	DeLone and McLean information systems successmodel
DOI	Diffusion of Innovation
EFA	Exploratory Factor Analysiss
EGDI	E-government Development Index
FC	Facilitating Condition
G2B	Government to Business
G2C	Government to Citizen
G2E	Government to Employee
GDP	Gross Domestic Products
GFI	Goodness-of-fit
HAB	Habit
ICT	Information and communication technology
IFI	Incremental fit index
INS	Insecurity
IS	Information Systems
IT	Information Technology
KSA	Kingdom of Saudi Arabia
MGA	multi-group analysis
MLSD	Ministry of Labor and Social Development
MPCU	Model of PC Utilization
NFI	Normed fit index
OPT	Optimism
PC	personal computer
PEOU	Perceived Ease of Use
PNFI	Parsimony Normed Fit Index
PU	Perceived Usefulness
RCCI	Riyadh Chamber of Commerce and Industry
RMSEA	Root Mean Square Error of Approximation
SCT	Social Cognitive Theory
SD	Standard deviation
SEM	Structural equation modelling
SI	Social Influence
SMEs	Small and Medium enterprise
SRMR	Standardized Root Mean Square Residual
TAM	Technology Acceptance Model
TPB	Theory of Planned behaviour
TRA	Theory of Reasoned Action
TRI	Technology Readiness Index





TTF	task-technology fit
UAE	United Arab Emirate
UAUT	Unified Theory of Acceptance and Use of Technology
UN	United Nations
USA	United State of America
USE	Use Behaviour
VIF	Variance Inflation Factor
WTO	World Trade Organization



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

Phenomenal technological advancement and advance of the Internet have opened new avenues, whereby a government is required to do more than just offering services in a conventional manner (Abu-Shanab, Harb, 2019; Glyptis, et. al., 2020). With an excessive pressure on governments to be more responsive, authorities in the public sector have strived to explore how they could make more effective and more efficient use of technological advancements for exceptional service provision. Government use of technology for offering the variety of different services is called E-government. According to Isaac (2007), E-governments are the state authorities` utilizations of technology through incorporating software and internet to increase access to information/services /products delivered by governments to businesses, local citizens, employees and other related agencies. E-government which provides suitable data for easy access, sharing, and using it within and among different agencies at a federal and municipal level is one of the important inputs for a successful decision making (Glyptiset al., 2020). This allows citizens for updating information and thereby transforming the efficiency, transparency, and effectiveness of data transactions among government, firms, and citizens (Mensah & Mi, 2018). E-government provided through different electronic platforms and official websites have a critical effect on the lifestyle of citizens which enable them to easily access, use, and exchange the information needed (Nica & Potcovaru, 2015).

The critical effect of E-government on the economy attracted significant attention from policymakers and stakeholders as evidenced through several programs and strategies

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## APPENDIX

UNIVERSITI UTARA MALAYSIA SCHOOL OF COMPUTING  
COLLEGE OF ARTS AND SCIENCES (UUMCAS) 06010 SINTOK, KEDAH DARUL  
AMAN, MALAYSIA REQUEST FOR SURVEY

Dear Respondents,

I am a doctoral student from the School of Computing, Universiti Utara Malaysia (UUM). This questionnaire is designed to find out factors for measuring the intention to use of Absher.

Absher refers to electronic services system to make it easier for citizens conduct transactions for passports visa requirements and all related transaction management through electronic gate system-specific Absher in Saudi Arabia. Please complete the questionnaire based on your honest and frank opinion.

I would appreciate if you could spend some time and thoughts in completing this questionnaire. I hope that you will cooperate and complete the following questionnaire with the best of your knowledge. Your responses will be considered confidential and used for research purposes only. There is no right or wrong answer. By completing this questionnaire, you will help Saudi citizens to improve the awareness to use of Absher. Thank you for your willingness to participate in this study. Should you have any queries or if you are interested to know the outcomes of the research kindly contact me.

**Yours Sincerely**

**Al Jerais Turki Mansonr PhD Student**

**School of Computing Universiti Utara Malaysia. Hand Phone No:  
00966554474490**

**Email: [turkey\\_2005\\_31@hotmail.com](mailto:turkey_2005_31@hotmail.com)**



**APPENDIX A**  
**QUESTIONNAIRE**

The items are measured with the help of following Likert scale:

1	2	3	4	5
Strongly disagree	Disagree Agree	Neutral	Agree	Strongly Agree

<b>SECTION A – FACTORS</b>						
No	Constructs	Please Circle				
<b>Insecurity</b>						
Ins 1	People are too dependent on e-service provided by Absher to do things for them.	1	2	3	4	5
Ins 2	Too much use of e-service provided by Absher distracts people to a point that is harmful.	1	2	3	4	5
Ins 3	e-service provided by Absher lowers the quality of relationships by reducing personal interaction.	1	2	3	4	5
Ins 4	I do not feel confident doing business with a Absher services that can only be reached online.	1	2	3	4	5
<b>Discomfort</b>						
DC1	When I get technical support from a provider by e-service provided by Absher I sometimes feel as if I am being taken advantage of by someone who knows more than I do.	1	2	3	4	5
DC2	Technical support lines of e-service provided by Absher are not helpful because they don't explain things in terms I understand.	1	2	3	4	5
DC3	Sometimes, I think that e-service provided by Absher are not designed for use by ordinary people.	1	2	3	4	5
DC4	There is no such thing as a manual for Abshir that's written in simple language.	1	2	3	4	5
<b>Optimism</b>						
Op1	E-service provided by Absher contributes to a better quality of life.	1	2	3	4	5
Op2	E-service provided by Absher gives me more freedom of mobility.	1	2	3	4	5
Op3	E-service provided by Absher gives people more control over their daily lives.	1	2	3	4	5
Op4	E-service provided by Absher makes me more productive in my personal life.	1	2	3	4	5
<b>Social Influence</b>						

SI1	People who are important to me think that I should use-services of Absher.	1	2	3	4	5
SI2	People who influence my behaviour think that I should use e-services of Absher	1	2	3	4	5
SI3	People whose opinions that I value prefer that I use e-services of Absher	1	2	3	4	5
<b>Facilitating Condition</b>						
FC1	I have the resources necessary to use Absher Services.	1	2	3	4	5
FC2	I have the knowledge necessary to use Absher Services.	1	2	3	4	5
FC3	E-services of Absher is compatible with other technologies I use.	1	2	3	4	5
FC4	I can get help from others when I have difficulties using e-services of Absher	1	2	3	4	5
<b>Habit</b>						
HB 1	Using the e-service provided by Absher has become a habit for me.	1	2	3	4	5
HB2	I am addicted to using e-service provided by Absher.	1	2	3	4	5
HB3	I must use e-service provided by Absher.	1	2	3	4	5
HB4	People who use the e-service provided by Absher for immigration become natural to me.	1	2	3	4	5
<b>SECTION B –Behavioural Intention of e-government service</b>						
Never	Once a month or less	Once a week	Every day or two	Several times a day		
1	2	3	4	5		
UB 1	I really want to use e-government services provided by Absher to perform my task related immigration	1	2	3	4	5
UB 2	I frequently use e-government services provided by Absher.	1	2	3	4	5
UB 3	I use e-government services provided by Absher on a regular basis	1	2	3	4	5
UB4	Most of my governmental requests and immigration tasks are done through e-government services provided by Absher	1	2	3	4	5

#### SECTION D - DEMOGRAPHIC ANALYSIS.

Please check the box and fill the answer which is best describing you and your firm. D1 Gender.

1. Male
2. Female

D 2. AGE:

1. 18-25
2. 26-34
3. 35-42
4. 43-50
5. 51- to above

D 3. What is your level of education?

1. High School
2. Bachelor Degree
3. Master
4. PhD
5. Other

D4. Nationality

1. Citizen
2. Residential

D5. Do you have a computer or smart phone to use e-services?

1. Computer
2. Smartphone

D6. Where do you use the e-services?

1. Office
2. House
3. Café
4. All of them

D7: Please choose your e-service usage for using e-services of Absher frequency for each of the following.

1. SMS
2. MMS
3. Ringtone and logo download
4. Jav a games
5. Browse websites
6. Mobile e-email note.

D8. My total years of ICT Experience is.

1. <1 year
2. 1-3 years
3. 3-5 years
4. 5-10 years
5. >10 years

D9: How often do you use the internet?

1. Once a month or less

- 2. A few times a month
- 3. Once a week
- 4. Every day ortwo
- 5. Several times a day

D10: what is the sector of your company?

- 1. Post and communication,
- 2. Trading,
- 3. Building and contraction,
- 4. Mining and quarrying,
- 5. Collective and other social
- 6. Agriculture and fishing,
- 7. Electricity, gas and water,
- 8. Real Estate and  
business services.
- 9. Others.

D11. What is your Internet experience, please write in years?

D12. Please state any other factors that stops you to use e-government services.

Please specify .....

D13. If you have any comment.....

Thank you

## APPENDIX B

### ASSESSMENT OF OUTLIERS THROUGH MAHALANOBIS

*Summary of Assessment of Outliers through Mahalanobis*

<i>Observation number</i>	<i>Mahalanobis d-squared</i>	<i>p1</i>	<i>p2</i>	<i>Mahalanobis d-square/df</i>
310	89.957	0	0	0.258
285	78.726	0	0	0.226
100	73.987	0	0	0.212
379	68.914	0	0	0.197
363	67.849	0	0	0.194
151	63.730	0	0	0.183
68	62.223	0	0	0.178
175	59.997	0.001	0	0.172
77	59.915	0.001	0	0.172
401	59.681	0.001	0	0.171
433	59.575	0.001	0	0.171
210	59.357	0.001	0	0.170
41	57.993	0.001	0	0.166
321	57.691	0.001	0	0.165
265	57.629	0.001	0	0.165
238	57.157	0.001	0	0.164
178	55.651	0.002	0	0.159
278	54.505	0.003	0	0.156
97	53.652	0.004	0	0.154
83	52.960	0.004	0	0.152
394	52.782	0.004	0	0.151
397	52.370	0.005	0	0.150
392	51.895	0.006	0	0.149
415	51.569	0.006	0	0.148
271	51.415	0.006	0	0.147
277	51.180	0.007	0	0.147
205	51.159	0.007	0	0.147
299	50.712	0.008	0	0.145
196	50.372	0.008	0	0.144
58	50.151	0.009	0	0.144
405	49.819	0.009	0	0.143
10	49.579	0.01	0	0.142
280	48.194	0.014	0	0.138
375	48.109	0.014	0	0.138
104	47.654	0.016	0	0.137
324	47.443	0.017	0	0.136
133	47.151	0.018	0	0.135
168	46.922	0.019	0	0.134
144	46.344	0.022	0	0.133
120	45.925	0.024	0	0.132
216	45.797	0.025	0	0.131
126	45.624	0.026	0	0.131
386	45.303	0.027	0	0.130
249	44.884	0.03	0	0.129
121	44.626	0.032	0	0.128
139	44.165	0.035	0	0.127
25	44.163	0.035	0	0.127
330	44.119	0.036	0	0.126
70	44.046	0.036	0	0.126
224	43.972	0.037	0	0.126
181	43.965	0.037	0	0.126
22	43.517	0.041	0	0.125
137	43.348	0.042	0	0.124
225	43.018	0.045	0	0.123
413	42.929	0.046	0	0.123
374	42.871	0.047	0	0.123

184	42.468	0.051	0	0.122
388	41.716	0.06	0	0.120
343	41.515	0.062	0	0.119
189	41.481	0.062	0	0.119
309	41.476	0.063	0	0.119
164	41.373	0.064	0	0.119
284	41.160	0.067	0	0.118
48	41.118	0.067	0	0.118
161	41.036	0.068	0	0.118
156	40.987	0.069	0	0.117
7	40.665	0.074	0	0.117
35	40.369	0.078	0	0.116
203	39.975	0.084	0	0.115
311	39.919	0.085	0	0.114
296	39.851	0.086	0	0.114
385	39.527	0.092	0	0.113
199	39.380	0.095	0	0.113
432	39.273	0.097	0	0.113
200	39.136	0.099	0	0.112
69	39.127	0.099	0	0.112
228	38.833	0.105	0	0.111
345	38.763	0.106	0	0.111
111	38.717	0.107	0	0.111
317	38.681	0.108	0	0.111
218	38.625	0.109	0	0.111
230	38.601	0.11	0	0.111
258	38.541	0.111	0	0.110
425	38.419	0.113	0	0.110
6	38.288	0.116	0	0.110
253	38.262	0.117	0	0.110
390	38.149	0.119	0	0.109
182	38.102	0.12	0	0.109
416	38.052	0.121	0	0.109
308	37.968	0.123	0	0.109
154	37.878	0.125	0	0.109
408	37.602	0.131	0	0.108
117	37.478	0.134	0	0.107
362	37.383	0.137	0	0.107
170	37.364	0.137	0	0.107
226	37.334	0.138	0	0.107
131	37.047	0.145	0	0.106
400	36.938	0.148	0	0.106
248	36.707	0.154	0	0.105
438	36.688	0.154	0	0.105