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DO E-GOVERNMENT SERVICES AFFECT JORDANIAN CUSTOMER LOYALTY?

Abstract. E-governance could be understood as the performance of the governance via the electronic medium to facilitate a transparent, efficient, and speedy process for making information readily available to the public, government organs, and other social agencies to perform administration activities of the government. Likewise, e-governance has become the most adopted instrument to transform government functionalities in service delivery. Therefore, the current study was carried out to investigate the effect of e-government services dimensions (Protection Perception, Data Protection Act, Available Information, and Government Commitment) on Jordanian customer loyalty. This study adopted a quantitative research method to gather data from customers related to the e-governance service facilities in Jordan. The findings showed that Information and Communication Technology (ICT) advancement through the adoption of e-governance is not significant in Jordan. Along with adoption, the performance indices related to e-governance showed poor performance of the Jordanian government's official website. The commitment such as REACH25 of Jordan aims to digitize government services on the public platform. Absent of a dedicated data protection act and regulation makes it harder for government agencies to deal with the data breach issue. To protect customers' loyalty to the e-governance of Jordan, its government needs to address the grievances of the customers that suffer from online fraud. Accordingly, it has become imperative for the Jordanian government to adopt the best practices of e-governance from developed countries to enhance their customer's experiences. Jordanian government could adopt the data protection act in line with the European Union's general data protection regulation to protect data flow across boundaries. By adopting robust data regulation, the Jordanian government could ensure that the generated data is processed and stored in the country and other regulations regarding sharing data between countries.

Keywords: e-government services, customer loyalty, protection perception, data protection act, available information, and government commitment.

Introduction. Governance means the process of decision-making and providing services to the country's citizens. E-governance is carrying out government functions and achieving the results by using available Information and Communication Technology (ICT). Many international organizations such as UNDP, World Bank, UNESCO, and World Bank have defined the various aspects of e-governance. As per the United Nations Educational, Scientific and Cultural Organization (UNESCO), «e-governance could be understood as the government performance via the electronic medium to facilitate transparent, efficient, and speedy process for making information readily available to the public, other organs of the government

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and other social agencies to perform administration activities of the government». World Bank defined e-governance as a governance process where government agencies use information technologies such as wide area networks, mobile computing, and the internet to transform relations with businesses, citizens, and other arms of the government.

Besides, government agencies use the internet as an effective instrument to provide government services through digital means to citizens and organizations. This e-governance method seeks to increase accountability, transparency, and other means to reduce corruption at various levels of governance. It is the governance instrument to increase government efficiency and redress the citizens' issues in a time-effective manner. In the country, citizens and organizations have access to services that help them in decision-making.

Jordan, a Middle East country, is one of the leading regional countries in the availability of IT infrastructure for online services (Alsikkah et al., 2018). However, integrating IT infrastructure is not significant in delivering public services even after having a clear ICT and e-governance strategy. In Jordan, e-government services could be provided to citizens and businesses to create greater public value (Alhanatleh et al., 2022). The Jordanian government plan has been placed on improving and increasing social integration for more than 15 years. However, the results are not significant yet.

Literature Review. Jordan is one of the leading Middle East regional developed countries in ITC. Being an ICT-developed country, Jordan has the potential to change the governance of the country to provide a better service experience to its people. Aims and Objectives of e-governance services in Jordan: Growing developments of information technologies worldwide provide modern, efficient e-services. In response to the growing worldwide development and adoption of e-governance, the Jordanian government has spearheaded e-government services to provide governmental services to its people and business organization. The e-governance initiative of Jordan was initiated in 2000 by its ICT ministry.

E-governance in Jordan mainly relies on ICT to provide information and services and improve the efficiency of the government. According to the United Nations (UN), Jordan ranked 98 among 193 countries in EGDI in 2018 and 51 in 2010. The declining number shows the lack of development and adoption of e-governance in governmental functions. In 2019, the Jordanian government formulated a forum that is a Jordanian non-profit association affiliated with the ministry of culture (UNESCO, 2018). This forum introduced a report that outlined the performance in the various axes of EGDI. This report also recapped the reasons for the declining trend of the rank of Jordan and paid attention to adopting public e-services from the best practices of other countries.

1. Enhance the efficiencies and effectiveness of the governmental sector's internal operation:
 - a. reducing the time required in action within each arm of the government;
 - b. increasing accuracy level;
 - c. learning from previous best practices in the performance of action.
2. Reducing associated costs of the government by:
 - a. improving existing business processes and developing new business processes;
 - b. making the flow of business easier and providing higher transparency;
 - c. reducing duplicate processes and other information in the governance system decreases the cascading effect on services;
 - d. advocating data integration and exchange of data.
3. Increasing the level of customer satisfaction.
 - a. reducing the time required to avail the goods and services;
 - b. availability of required data and information for the customers;
 - c. protection of the data generated within the country's sovereign boundary;
 - d. addressing the customers' problems in lesser time;
 - e. complied of the organization to the Jordanian rules and regulations.

Online Service Index (OSI) ranked countries based on the country's national websites available in the native language (Figure 1). This website includes a national portal, e-participant portal, service-providing companies, finance, and an environment for providing customer or citizen services. OSI measures the availability of data and its readiness and viability for delivering online services. The Jordanian government has identified low-performance websites and recommended the inclusion of IT industries to enhance their functionality.

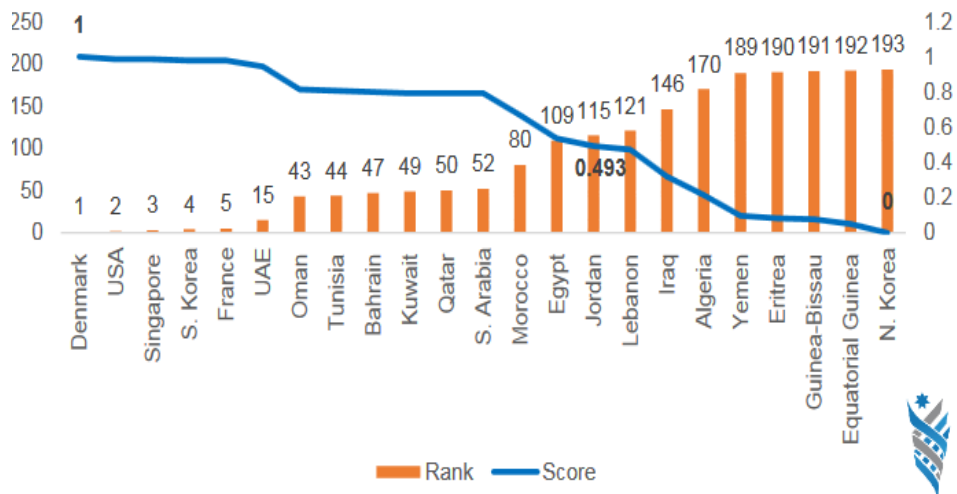


Figure 1. Online Service Rank Index

Sources: developed by the authors on the basis of (Jordan Strategy Forum, 2019).

The above graph shows the rank and score for Online Service Rank Index among 193 countries. Jordan has ranked 115 in 193 countries, and its score is 0.493. The score below the half of developed countries such as Denmark and the USA shows the level of adoption of e-governance in Jordanian governmental functionalities.

Telecommunication Infrastructure Index (TII) measures an average of five parameters that are:

- 1) fixed broadband subscribers per 100;
- 2) fixed telephone numbers per 100 inhabitants;
- 3) wireless broadband users per 100 inhabitants;
- 4) mobile subscribers per 100 inhabitants;
- 5) numbers of internet users per 100 inhabitants.

This graph exhibits the ranks and scores based on telecommunication infrastructure. As per the 2018 report, Jordan ranked 86th with the score of 0.4406 in terms of telecommunication infrastructure (Jordan Strategy Forum, 2019). The poor performance of Jordanian websites of various arms does not have uniform functionality. Skewed development among the official websites and non-availability of the website in native languages are reasons for performing substandard.

Compatibility refers to how innovation is compatible with values, values, experiences, and other social norms among people. As per the OECD, the country should include its citizens in decision-making to highlight and respect the cultural aspect of e-governance (OECD, 2022). In developing countries like Jordan, cultural barriers to adopting innovation have not been explored so far.

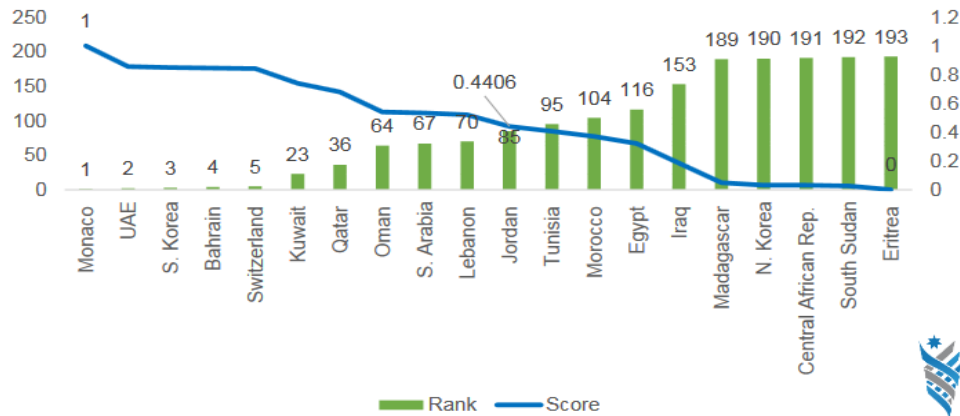


Figure 2. Telecommunication Infrastructure Index

Sources: developed by the authors on the basis of (Jordan Strategy Forum, 2019).

A robust legal framework is desired to increase the effectiveness and efficiency of e-governance to ensure customer loyalty. The services and redressing the issues generated in the service delivery process should be delivered amicably in less time. The Jordanian government does not have a dedicated legal framework to deal with the issues in ensuring customer loyalty (GDPR, 2022). Jordanian government follows provisions of other IT laws available to deal with issues.

One of the main goals of e-governance is to provide quality services in terms of better products, services, and customer experiences (Alnaser et al., 2018a). Service quality is the major driving force of a company that helps the organization sustain for a longer period. Along with service quality, ensuring the customers' benefits as per the best standard are desired in the country. This transparent mechanism allows for finding loopholes in the governance systems and mitigating the same issues.

Perceived usefulness could be defined as the extension of an innovative technology that enhances work performance. In e-governance, it is generally perceived that the service receivers have advantages in accessing government services at ease that cut down the time required to avail of the service otherwise. The redresses of the end lever users could be addressed digitally in a faster way without involving significant human resources and other unnecessary assets (Al-Allak et al., 2011).

E-governance has many barriers to realizing its usefulness in governmental functionaries. Few barriers, such as the complex nature of ICT, are one of the inherited barriers to adopting e-governance (Alnaser et al., 2018b). The other factors such the socio-economic status of the citizens and their capability to afford digital devices, and the other is the literacy rate that determines the ability to access government services. Concerning the social demographic status, literacy in Jordan is more than 98.2%, which is an added advantage for the government (Al-rawahna et al., 2019). However, the financial support for e-governance is non-significant due to the higher cost of e-governance for the Jordanian government.

The digital divide refers to the situation of skewed access to government services that are available to the general people of the country. The poor and the socio-economically disadvantaged group have lesser access to e-governance services. Thus the potential is not realized in Jordan. Digital devices and functionality of website of various arms of the government is not uniform, which creates a gap in providing service delivery. Data is considered to be a new oil of the 21st century due to its nature of intrinsic value. Every individual wants to protect their privacy from any third-party interferences. At the individual level, tempered data could be used to steal money from others' accounts in an unauthorized manner. Besides, data could be used to influence geopolitical decisions of a country as well other important factors such as

the national election. As individual and national threats could be conceived from breached data, it is important to prevent data from flowing outside sovereign control. It is imperative to develop and implement a data protection act and policy to protect the interests of the customers, citizens, and other stakeholders of the government arms (Alnaser and Khalid, 2014). Jordan's government does not have a dedicated data protection act to protect its customers or end-users. The available IT laws are being used to deal with data breaches, data stolen, cybercrimes, and online transaction fraud cases. Jordanian government could adopt a data protection act in line with the European General Data Protection Regulation (GDPR). GDPR is considered the toughest data protection act to deal with data-related legislation (GDPR, 2022). By adopting a robust data protection act, the Jordanian government could ensure customer loyalty in e-governance systems in the country. The online transaction has increased manifold, increasing KYC and generated data (MoDEE, 2022).

Customers' satisfaction is the factor that determines the sustainability of the e-governance systems. The citizens' satisfaction could be enhanced by availing a service that requires less time and better user experiences. The customers' satisfaction could ensure by providing them with available data in the public domain, assurance of legal support in case of monetary loss, and others. Assurance of data protection of the customers by processing and storing the generated data in the sovereign boundary is used to eliminate the threat and non-state actor influence in decision making. To enhance customer satisfaction through e-governance Jordanian government has implemented REACH25. The main agenda of REACH25 is to transform government services from manual to digital mode (ITA, 2021).

Methodology and research methods. This study follows relevant methods and techniques to collect data and analyze it to research Jordanian e-governance to ensure customers' interests.

A quantitative research method has been adopted to gather data from customers related to the e-governance service facilities in Jordan. In this case, it is proven that quantitative design has been an immense help in evaluating Jordanian e-governance. However, as per the researcher's experience, it is found that satisfaction among users through e-governance is not distinguished. Therefore, quantitative design is one of the well-suited methods to assess the experiences of customers and other end-users in the e-governances arena.

In this research method, a wide range of respondents has been selected from different socioeconomic backgrounds in Jordan to collect the data. The main goal is to gather data from respondents whether they have availed of services through a digital platform or not. The selected criteria are imposed to evaluate both advantages and disadvantages of customers' perceived trust in protecting their interests and meeting the quality perception through e-governance. Table 1 contains the variables of the study.

Table 1. Research variables

Dependent variable	Operational variables	Independent variable
Customers loyalty	Protection perception Data protection act Available information Government commitment	E-governance in Jordan

Sources: developed by the authors.

The data collection method is significant in research study to source authentic data related to the topic of study. Related data regarding assurances of customer loyalty in Jordan were collected from random participants through digital services. In this research, a primary quantitative method was used to collect data to gather fist hand topic-related information. A primary quantitative method for data collection helps achieve real data and personal experiences based on information directly from participants. In this case, the researcher has collected data from general citizens of Jordan that are eligible for availing services

through online digital devices. The area of research has been expanded to eliminate any such biases in collected data. 7 close-ended questions were structured for conducting research across 4 demographics. Data were collected from different levels of socioeconomic status to analyze all sections of people.

The sampling method helps researchers select a targeted group of participants from an available population. The selection of an appropriate sampling method is desired to ensure the credibility of collected data relevant to the topics. Probability and non-probability sampling are two types of sampling methods available. In this study, the non-probability sampling method has been chosen to select participants for conducting the survey. It is beneficial for the researcher to select participants by not allowing equal chances of representation. For this type of situation, the purposive sampling technique is used in this research to include participants and address the criteria for their engagement. In this case sample size is 51, and participants are customers associated with the Jordanian business sector. Figure 3 contains main hypothesis of the investigation.

Hypothesis. H0: e-governance could not maintain citizens' satisfaction by ensuring customer loyalty in Jordan. The Jordanian government does have dedicated data protection laws, such as the European Union's General Data Protection Regulation (GDPR). Due to the absence of data protection laws, Jordanian customers' information such as online transactions, medical status, gender, and sexual interest are not protected and could be misused without their prior consent.

H1: E-governance is significant to maintaining citizens' satisfaction by ensuring Jordan's customer loyalty. Jordan has implemented e-governance to increase the effectiveness of government organs and, as a whole, improve customers' experiences. Moreover, it is helpful to instill customers' trust in e-governance systems.

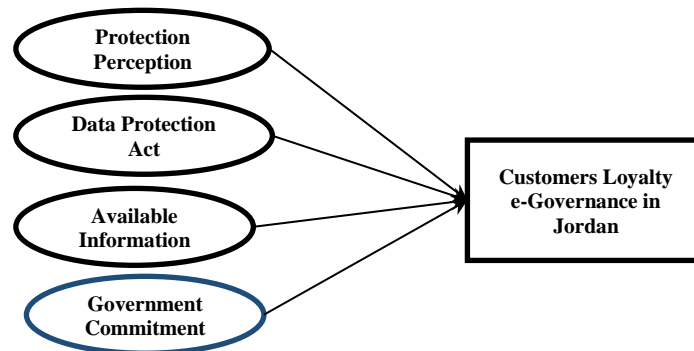


Figure 3. Research framework

Sources: developed by the authors.

Results. Data analysis is the process of studying the collected data that has been collected from participants during the survey. All responses are marked as per the Likert scale and a separated data set is prepared. After that, this study used the IBM SPSS software to analyze the prepared data and achieve the research objectives. It has helped evaluate interrelations between perceived qualities, performance expectations, and customer loyalty in e-governance systems. Statistical analysis such as descriptive statistics, regression, validity test, and correlation analysis is performed in this paper to assess the collected data through the quantitative method.

The descriptive statistics analysis would provide a detailed understanding of the patterns present in the participants' responses (Table 2).

Table 2. Descriptive statistics

Indicatore	Q1	Q2	Q3	Q4	Q5	Q6	Q7
N							
valid	51	51	51	51	51	51	51
missing	0	0	0	0	0	0	0
mean	2.82	3.35	3.78	4.06	3.94	2.71	3.88
Median	2.00	4.00	4.00	5.00	4.00	2.00	4.00
Mode	2	4	4 ^a	5	4 ^a	2	5
Std.	1.292	1.110	1.270	1.240	1.240	1.361	1.306
Deviation							
Variance	1.668	1.233	1.613	1.536	1.536	1.852	1.706
Skewness	.284	-1.118	-.918	-1.230	-1.327	.363	-1.119
Std. Error of	.333	.333	.333	.333	.333	.333	.333
skewness							
Kurtosis	-1.194	.089	-.219	.421	.927	-1.266	.148
Std. Error of	.656	.656	.656	.656	.656	.656	.656
skewness							
Minimum	1	1	1	1	1	1	1
Maximum	5	5	5	5	5	5	5
sum	144	171	193	207	201	138	198

Note: Q1 – Do you feel safe doing online transactions?; Q2 – Do you think that sellers manipulate their product contents chart online?; Q3 – Do you think that customers' value perception regarding the e-governance of Jordan?; Q4 – Do you feel an e-governance system is an efficient way of delivering public services?; Q5 Do you think grievances could be addressed on a digital platform?; Q6 – Do you think the Jordanian government has adequate regulations to protect customers' interests?; Q7 – Do you think the Jordanian government could make MNCs comply with the national laws to ensure customer loyalty?

Sources: developed by the authors using SPSS.

Figure 4 shows that 51 participants are presented in the sample space. There are no missing values present in the table, indicating a highly concentrated sample. As per the views of George and Mallery (2018), the descriptive statistics process helps assess the overall distribution of the variables. Herewith, it would also be essential to assess the central tendencies of the data as a way to handle the overall data tendencies. A base value of scale could be established for the overall dataset using the mean. Figures 6-10 provide a graphical estimation of the overall response to the survey questions.

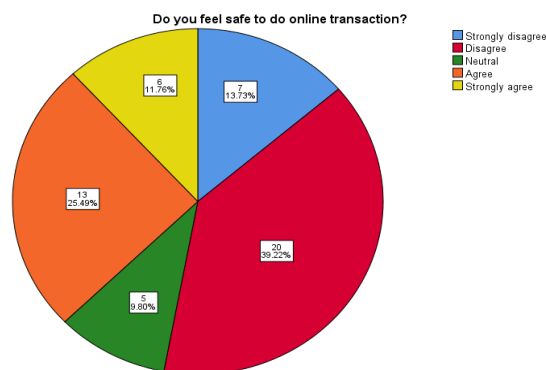


Figure 4. Pie chart of respondents

Sources: developed by the authors using SPSS.

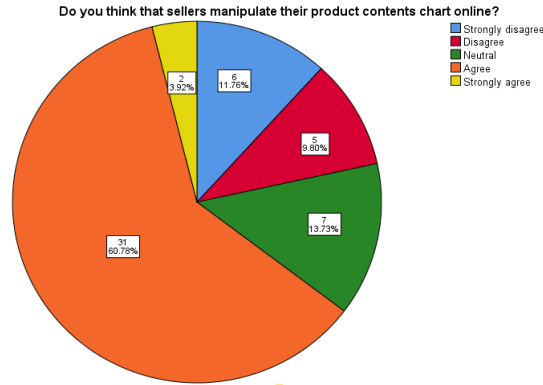


Figure 5. Pie chart of respondents

Sources: developed by the authors using SPSS.

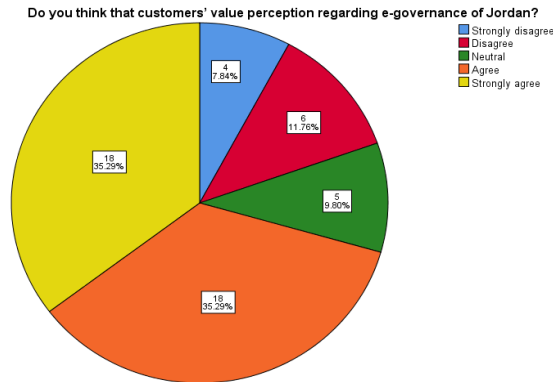


Figure 6. Pie chart of respondents

Sources: developed by the authors using SPSS.

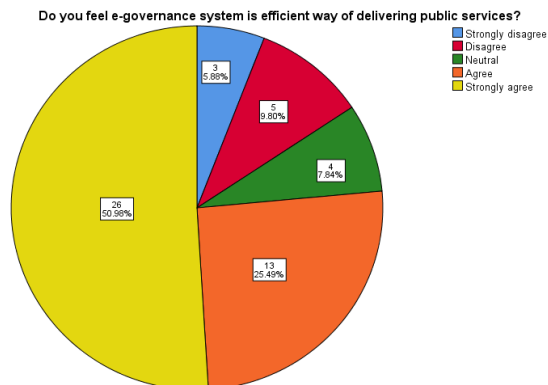


Figure 7. Pie chart of respondents

Sources: developed by the authors using SPSS.

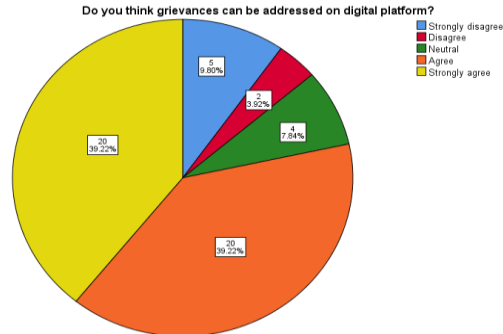


Figure 8. Pie chart of respondents

Sources: developed by the authors using SPSS.

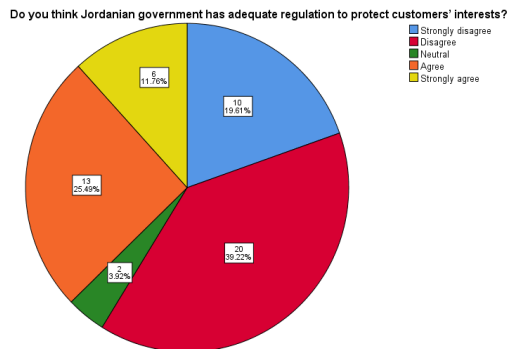


Figure 9. Pie chart of respondents

Sources: developed by the authors using SPSS.

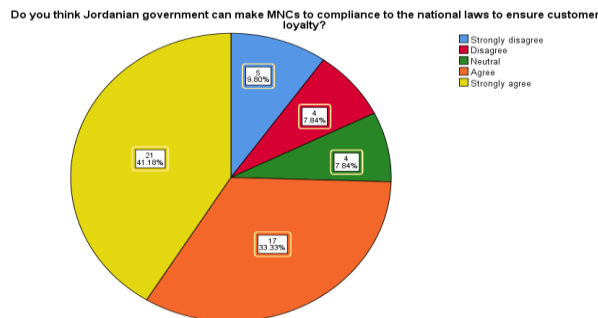


Figure 10. Pie chart of respondents

Sources: developed by the authors using SPSS.

It can be seen that the median values for the first three questions fall between 2.00 and 4.00. In turn, it is slightly different for the next questions. Overall, the median values vary from 2.00 to 5.00, indicating similar data points from the responses. It would help the researcher estimate the central points of data, as it points out the overall amount of deviation present in the dataset. Various datasets need to be addressed properly in any response dataset to make viable research assumptions (Kaliyadan and Kulkarni, 2019).

Estimation of the standard deviation indicates 1.361 for the sixth question and 1.306 for the last question. Large values of standard deviation indicate a greater spread of the responses for these two questions. Under aligning this assumption with the questions in the discussion, the variable factors could be termed as adequate government regulations and national compliance, which needs further evaluation. Figure 4 shows that the responses to the sixth question are polarised in nature. On the other hand, smaller values of standard deviation may not always ensure the integrity of the collected data. In this regard, the standard deviation value of 1.240 could be considered an optimal value as it occurred twice in the dataset. The response sum indicates that agreeableness is higher for the fourth, fifth, and sixth questions.

Table 3. Findings of the Regression analysis

model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R square change	F change	Df1	Df2	Sig. F Change	Durbin-Watson
1	.979a	.959	.953	.279	.959	171.087	6	44	.000	1.009
a.	Predictors: (constant) Do you think the Jordanian government could make MNCs comply with the national laws to ensure customer loyalty?, Do you think the Jordanian government has adequate regulation to protect customers' interests?, Do you think sellers manipulate their product contents chart online?, Do you feel e-government system is an efficient way of delivering public services?, Do you think that customers' value perception regarding the e-governance of Jordan?, Do you think grievances could be addressed on digital platforms?									
b.	Dependent variable: Do you feel safe doing online transactions?									

Sources: calculated by the authors using SPSS.

Table 4. Findings ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	79.983	6	13.331	171.087	.000
1 Residual	3.428	44	.078		
Total	83.412	50			

Sources: calculated by the authors using SPSS.

A single model is being used here to conduct the regression analysis. However, more models could also be used in case of having a larger dataset with more participants. De Menezes et al. (2021) noted relationships between the research variables could be assessed properly with the help of regression analysis. The correlation between the different variables is being assessed here concerning the dependent variable. The adjusted R square value is .953, indicating the level of variance present in the table. 95.3% of the variances observed in the independent variables could be predicted using the dependent variables (Table 3). The strength of association could be assessed using the r squared value.

On the other hand, it may not properly estimate the association between the dependent and independent variables. Therefore, the determination coefficient was termed. The differences between the r squared and the adjusted r squared values are indicators for the overall variance present in the dataset. In this sample, the difference is only 0.06, indicating lower chances of variance from the respondents.

The next factor is the degree of freedom present in the research, known as the df value. Table 3 shows that the df of regression is 6, along with a mean square of 13.331. Besides, the F value would be essential here to assess the ability of the independent variable to represent the dependent variable. In the case of this dataset, the F value is 171.087.

The spread of the standard error and variable relationship could be assessed using the coefficient analysis. Table 5 indicates that the B value is highest for the fifth question. It could represent almost 90% of the dependent variable. On the other hand, the B value may not be enough to represent the most impactful values present in the table. The B values in the negative range indicate a lower level of

significance. Therefore, the questions having a lower level of significance are less likely to impact the overall prediction of the independent variable.

Table 5. Coefficients

Model	Indicators	under standardized		Standardized Coefficients Beta	T	Sig.
		B	Std. Error			
	(Constant)	.000	.146		-.003	.997
	Do you think that sellers manipulate their product contents chart online	.000	.110	.000	.001	.999
	Do you think that customers' value perception regarding the e-governance of Jordan	-.179	.132	-.176	-1.355	.182
	Do you feel the e-governance system is an efficient way of delivering public services	.355	.121	.341	2.933	.005
1	Do you think grievances could be addressed on digital platforms	.282	.139	.270	2.028	.049
	Do you think the Jordanian government has adequate regulations to protect customers' interests	.927	.060	.977	15.353	.000
	Do you think the Jordanian government could make MNCs to compliance with the national laws to ensure customer loyalty	.401	.170	-.406	-2.362	.023

Sources: calculated by the authors using SPSS.

Along with that, the standard error estimation provides an estimation of the error associated with the coefficients. As per the views of Astivia and Zumbo (2019), standard error estimation provides a more detailed description of the deviation observed across the selected research variables. The t value allows stating that the sixth question is more likely to have a wide range of errors, mostly because of the large-scale variance observed within it. The beta values could be termed here as the standardized value for the overall estimates that are observed within the dataset. An estimation of the distribution could also be conducted with the help of the beta values. However, this is more likely to increase the complexity of the research. The estimation may provide wrong error values if a similar scale of measure is not maintained beforehand. The t-value and the sig value allow evaluation of the research hypothesis. Furthermore, it could also be used to support or evaluate the research hypothesis.

Reliability statistics. This study performed a reliability analysis to assess the measurement scales' properties and the factors used to compose these scales. According to Li et al. (2019), an individual scale and item-based analysis are easier with the help of the reliability analysis. Therefore, the Cronbach's Alpha test was performed.

Table 6 shows the value of Cronbach's alpha is .980 for the dataset. It could be categorized as a high value, which also signifies higher significance levels for the dataset. On the other hand, the higher alpha level also indicates multiple similar responses in the given questions. The value is standardized under the overall base value to get a more definitive output. After standardization, the value comes down to .980. A round-off value signifies a more balanced and interrelated dataset property.

Table 6. Reliability statistics

Cronbach's alpha	Cronbach's alpha based on standardized items	N of items
.980	.980	7

Sources: calculated by the authors using SPSS.

Table 7. One sample t-test

Statements	N	Mean	Std. Deviation	Std. Error Mean
Do you feel safe doing online transactions	51	2.82	1.292	.181
Do you think that sellers manipulate their product contents chart online	51	3.35	1.110	.155
Do you think that customers' value perception regarding the e-governance of Jordan	51	3.78	1.270	.178
Do you feel the e-governance system is an efficient way of delivering public services	51	4.06	1.240	.174
Do you think grievances could be addressed on digital platforms	51	3.94	1.240	.174
Do you think the Jordanian government has adequate regulations to protect customers' interests	51	2.71	1.361	.191
Do you think the Jordanian government could make MNCs to compliance with the national laws to ensure customer loyalty	51	3.88	1.306	.183

Sources: calculated by the authors using SPSS.

The t-test was performed to identify the specific variables impacting the analysis. Many different variables are observed in a t-test, having different implications for the research outcomes. The test variables are the dependent variables, which could be termed here as the consumer perspectives towards the different parameters of the study. The other variables are the grouping variables, also termed the independent variables. According to the statement of Gerald (2018), using the grouping variables, different groups can be assessed, and their overall impact on the research outcomes is also detailed. This study assessed the effectiveness of the e-governance system in handling and delivering public services. The findings showed that the mean is comparatively higher than the other portions, indicating a higher range of responses from the participants. The standard mean of error is .191 here, indicating a slight deviation from the usual pattern from the respondents. The outcomes of this test could also be associated with the null hypothesis observed in the study. Following the standard error means, higher values indicate more deviation from the assumed research outcomes. Evaluation of the different factors and tests performed here indicates that the statistical analysis has been conducted with a sample size of 51 participants. Besides, there are no missing values present within the sample set. The dataset and the responses indicated a high rate of reliability in the overall process. Some of the questions present in the dataset provided a higher rate of responses. Moreover, there are some polarised responses as well. It would be essential to identify the variables having a higher response rate and evaluate these variables properly.

Conclusion. Middle East country Jordan has potential advantages for ICT development in the country. However, it has not experienced any significant adoption of e-governance in the governmental service delivery systems. Jordanian government could utilize its favorable demographic dividend to enhance customers' experiences by ensuring transparency and accountability of e-governance. Besides, the government could address other loopholes in the systems by adopting an appropriate data act. Research work commonly faces many limitations in researching to achieve desired results. In this research, limitations include the selection of participants from the huge population, knowledge of digital devices,

knowledge of e-governance services available for general customers, knowledge, and information regarding available grievance redressal mechanisms. The language barrier is of the constraints in data collection from wide diversified groups of the participants. Based on current research, it would be accurate to conclude that e-governance has been adopted worldwide to facilitate government service delivery. It has become imperative for the Jordanian government to adopt the best practices of e-governance from developed countries to enhance their customer's experiences. Jordanian government could adopt the data protection act in line with the European Union's general data protection regulation to protect data flow across boundaries. By adopting robust data regulation, the Jordanian government could ensure the data processing and storage within the country and other regulations regarding sharing data between countries. Government commitment such as REACH25 could be promoted to include members from all sections of society (ITA, 2021). Jordanian government can make national and multinational companies comply with the national and international regulations for processing and storing the data. A robust data act could ensure customers' loyalty to e-governance systems in Jordan. The policy related to e-governance could be formulated to reach the larger numbers of customers and end-users. In turn, government dedicated awareness campaigns could promote information regarding the vulnerabilities of shared data on the online platform.

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References

- Al-Allak, B. A., Alnaser, A. S., & Saeed, M. A. (2011). Education and Globalisation: Conceptual and Visionary Approach. *Advanced Social Research*, 1: 1-10. [\[Google Scholar\]](#)
- Alhanatleh, H., Aboalqanam, K., & Awad, H. (2022). Electronic government public value of public institutions in Jordan. *International Journal of Data and Network Science*, 6(1), 27-36. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Alnaser, A. S., & Khalid, M. (2014). Service quality dimensions and students satisfaction. *Journal of Advanced Social Research*, 4(6): 1-17. [\[Google Scholar\]](#)
- Alnaser, A., Almuala, I., & Alshibly, M., (2018a). Conceptual Research on Mobile Government Service Quality and its Impact on Jordanian Citizen Satisfaction, *International Journal of Business Society*, 2(2): 15-21. Retrieved from [\[Link\]](#)
- Alnaser, A., Saeed, M., & Alrawashedh, N. (2018b). Adoption of e-commerce by SMEs and its impact on customer satisfaction. *Journal of Advanced Social Research*, 8(01): 01-14. [\[Google Scholar\]](#)
- Al-rawahna, A. S. M., Chen, S. C., & Hung, C. W., (2019). The barriers of e-government success: An empirical study from Jordan. *International Journal of Managing Public Sector Information and Communication Technologies*, Available at SSRN 3498847. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Alsikkah, A. A., Alabbasi, H. A. S., Saeed, M. A. Y., & Alnaser, A. S. M. (2018). Attitude of Limkokwing Students toward Mobile Marketing in the Smartphones Era, *International Journal of Business Society*, 2(2), 7-14. Retrieved from [\[Link\]](#)
- Astivia, O. L. O., & Zumbo, B. D. (2019). Heteroskedasticity in Multiple Regression Analysis: What it is, How to Detect it and How to Solve it with Applications in R and SPSS. *Practical Assessment, Research, and Evaluation*, 24(1):1. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- De Menezes, D. Q. F., Prata, D. M., Secchi, A. R., & Pinto, J. C. (2021). A review on robust M-estimators for regression analysis. *Computers & Chemical Engineering*, 147,107-254. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- GDPR. (2022). *EU's New Data Protection Law*. Retrieved from [\[Link\]](#)
- George, D., & Mallery, P. (2018). *Descriptive statistics. In IBM SPSS Statistics 25 Step by Step* (pp. 126-134). Routledge. [\[Google Scholar\]](#)
- Gerald, B., (2018). A brief review of independent, dependent and one-sample t-test. *International Journal of Applied Mathematics and Theoretical Physics*, 4(2):50-54. [\[Google Scholar\]](#)
- ITA, (2021). *Jordan Community Guide*. Retrieved from [\[Link\]](#)
- Jordan Strategy Forum. (2019). *E-Government in Jordan*. Retrieved from [\[Link\]](#)
- Kaliyadan, F., & Kulkarni, V., (2019). Types of variables, descriptive statistics, and sample size. *Indian dermatology online journal*, 10(1):82. [\[Google Scholar\]](#) [\[CrossRef\]](#)

Li, L., Wan, H., Gao, W., Tong, F., & Li, H. (2019). Reliability based multidisciplinary design optimization of cooling turbine blade considering uncertainty data statistics. *Structural and multidisciplinary optimization*, 59(2):659-673. [\[Google Scholar\]](#) [\[CrossRef\]](#)
MoDEE. (2022). *E-Government Management and its operations*. Retrieved from [\[Link\]](#)
OECD. (2022). Good governance in Jordan. Retrieved from [\[Link\]](#)
UNESCO. (2018). Jordan. Retrieved from [\[Link\]](#)

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Послуги електронного урядування та лояльність споживачів: на прикладі Йорданії

У статті розглянуто концепцію розвитку електронного урядування під якою розуміється організація державного управління в електронному середовищі з використанням інформаційно-комунікаційних технологій. Авторами зазначено, що електронне урядування сприяє прозорому, ефективному, спрощеному та оперативному процесу інформування суспільства, органів державної влади та інших громадських організацій. Електронне урядування є найбільш ефективним інструментом трансформації державних службовців у сфері надання послуг. Метою даного дослідження є визначення впливу послуг електронного урядування (сприйняття захисту, закон про захист даних, доступна інформація та зобов'язання уряду) на лояльність споживачів в Йорданії. Емпіричний аналіз базується на даних опитування споживачів послуг електронного урядування в Йорданії. Отримані результати засвідчили незначний розвиток інформаційно-комунікаційних послуг від впровадження електронного урядування в Йорданії. Встановлено, що для офіційного сайту уряду Йорданії характерні низькі показники ефективності. Авторами зазначено, що такі послуги як REACH25 Йорданії спрямовані на діджиталізацію державних послуг на громадській платформі. При цьому відсутність закону про захист даних та відповідних нормативних актів ускладнює розв'язання проблеми витоку даних у державних установах. За результатами дослідження, авторами наголошено на необхідності підвищення задоволеності клієнтів, які постраждали від шахрайства в Інтернеті. Таким чином, уряд Йорданії має підвищувати якість обслуговування клієнтів спираючись на кращі практики в електронному урядуванні від розвинених країн. Уряду Йорданії необхідно прийняти закон «Про захист даних» відповідно до Загального положення ЄС про захист даних. Впровадження ефективного механізму регулювання даних сприятиме забезпеченню обробки та зберігання даних в Йорданії, а також низки інших правил, які стосуються обміну даними між країнами.

Ключові слова: послуги електронного урядування, лояльність клієнтів, сприйняття захисту, закон про захист особистих даних, доступна інформація, державні зобов'язання.