



Analyzing and Evaluating Usability of Electronic Payment Systems (EPS) through End-User Acceptance Testing

Mohammad Alshira'H¹, Mohammad Al-Omari²

¹Prince Hussein Bin Abdullah College for Information Technology, Al alBays University, Mafraq, Jordan, alshirah@aabu.edu.jo

²King Talal School of Business Technology, Princess Sumaya University for Technology, Amman, Jordan, m.alomari@psut.edu.jo

ABSTRACT

The proposed research in this paper intends to investigate and evaluate the perceptions of end-users regarding the use of the EPS and testing their acceptance. Besides, testing the effectiveness of the TAM model as a theoretical basis for understanding users' perspectives. The research followed the descriptive analytical method through the electronic survey. The sample consisted of (282) students from several Jordanian universities working on the EPS. This research also aims to investigate and evaluate the relationship between students' intentions in the direction of using EPS and some variables such as "perceived ease of use, perceived benefit, behavioral intentions, and the actual use of the system". The research findings show that approximately all the participants in this study had a positive agreement that the overall relationship between "EPS acceptance and usability" and "TAM model factors" is a positive relationship. Moreover, the participants' responses were consistent that there is no relationship between "user gender", and "level of educational" and between "perceived ease of use", and the "perceived benefit". Additionally, the results show that the relationship between the "perceived ease of use" and "perceived benefit" and the "actual use" of the EPS is a positive relationship. Furthermore, the results show that the relationship between the "perceived ease of use" and "perceived benefit" and the "behavioral intentions" of the EPS is a positive relationship. Finally, the result shows that the relationship between "perceived ease of use" and "perceived benefit" of EPS is a positive relationship.

Key words: Usability, Technology Acceptance Model (TAM), User Acceptance, User Satisfaction

1. INTRODUCTION

The importance of transporting money online has been an imperative matter to effort customers for the improvement of e-commerce. These electronic payment systems (EPS) be able to distribute usually by means of direct in real time credit/debit payments, intercede credit/debit payments, put in storage value ready cash, and electronic invoice payments. Add to that, the old-style EPS are well known to reign many entries that prevents customers from embracing them.

Previous studies proposed that more or less of these agents link to shortage of belief, safety, usability, in elevation business deal cost, and lack of perceived features and understand risk. These features are rate to be significant to extended clientele by the dependably to turn to an online payment system. Further customers will pause attractive in online doings if these basics are not smooth in the EPS, so it will give rise to the dealer to be defeated on possible online transactions [4]. According to Singh et al [13] "Electronic payment system" is a method of payments through an electronic network just like the internet. In other words, the e-payment is a process that the individual can make Online Payments for the "purchase of goods or services" deprived of sustainable transport of cash and checks, irrespective of time and location. Moreover, E-payment system is the base of on-line payments, and online payment system improvement is a higher form of E-payments. It produces electronic payments at any time by the internet immediately to achieve the e-business environment. The problems of EPS that the user is confronting nowadays can be explained by way of fail to head user matters and requirements in the design and setting out of the systems. Moreover, it can be proposed which in the resolve of EPS no more than technical but then again as well userlinked features ought to be considered. Just as if there are perfect technical solutions, but they are not acceptable by end-users or sellers, the in-one-piece system would flop. The present works that depot the needs for electronic payment systems do not supply rationalization for chosen of the selecting needs. This inattention can be deceptive for style and supporter of electronic payment systems. There is a certain need for user feedback on these manners. Thus, some studies proposed that it is significant to be acquainted with what advantages of payment systems have almost immediate effect on user acceptance. It is enjoyable to discover what uniqueness are crucial for success and what can be disregarded, if necessary. Thus, it must be conducted to asses' user attitudes in connection with an area of characteristics of payment systems. "The investigated characteristics that are cited in the studies are anonymity (protecting or concealing customers' identity), applicability (ability to pay with a payment system at multiple and diverse points of sale),

authorization type “ability to perform offline or online payments”, convertibility “ability to convert money to and from a system to another system”, ease of use “usability”, efficiency “the ability of payment system to service small and micropayments”, interoperability “support of open standards and protocols”, reliability, scalability “ability to accept new users without performance degradation”, security, traceability “ability to trace sources of money”, revenue or physical presence” [2]. The electronic payment system has simplified the acceptance of electronic payment for online transactions, and electronic commerce payment systems, also known as the sub-component (electronic data exchange system), are becoming increasingly popular due to widespread use of online shopping and shopping. In addition, an electronic payment mechanism is a convenient option for paying bills. When consuming this way, there will be no essential to conclude a check or use cash by hand. All that requirements to be sort out is to enter information into the browser and click on the mouse, so it is not surprising that a lot of individuals switch to using a method Electronic payment as an unusual to sending checks by e-mail. Add to that, electronic payment has many benefits such as; electronic payment is a comfortable method for the consumer, as it only requires entering account information, such as credit card information and storing information in the payment site database, which facilitates access to the site in the next times as it will only require a user name and password. Also, the electronic payment method reduces costs, the greater the possibility of electronic payment, the lower the costs of sending securities or checks [1]. In spite of this, the adopt of modern technology and electronic payment systems depends on the extent of customer acceptance or the target group for such technology, and several previous studies have examined the field of info technology acceptance and the “technology acceptance model (TAM)”. A large and growing body of current research has focused on the usability concept [17], [18], [19]. Ekuobase & Oliha study [7] conducted a questioner to educated guess the level of “acceptance and usability of existing EPSs among Nigerian traders”. The opinion poll was planned after the “Unified Theory of Acceptance and Use of Technology (UTUAT) model”. The outcomes display that dealers in Nigeria main marketplaces are up till now, and are not on a par smooth, to embrace existing EPS in their everyday purchasing and selling activities. Tella study [14] manufactured “TAM” to describe and forecast the success of the “EPS” utilizing users ‘satisfaction as the in need of variable. A total of 74 principles in teaching educational staff carefully chosen from the “Faculty of Communication and Information Sciences, University of Ilorin, Nigeria constituted the sample for the research paper”. The outcomes detect a correlation between perceived benefits, perceived enjoyment, speed; service quality, ease of use, and actual use and e-payment success. Furthermore, “all the seven e-payment predictive factors jointly made 69% of e-payment

system success”. Likewise, perceived benefits, perceived enjoyment, speed; quality of service, real use and perceived ease of use are good predictors of e-payment system success. One of the implications pointed out by the study is that the measures for the construct of EPS success used are self-reported. Furthermore, Singh et.al, study [13] aimed to identify the matters and tasks of electronic EPS and offer some solutions to improve the e-payment system quality. the result showed that the successful implementations of EPS be determined by how the “security and privacy” dimensions perceived by consumers as well as sellers are popularly managed, in turn would get better the market dependability in the system. Masihuddin et al. study [10] study aimed to discussing and raising awareness about different concepts regarding to “EPS” including its benefits, face up to and safety deliberations. The suggest paper also assesses the implementation “EPS” and the follow-on effect on financial prudence of a nation. The conclusion of the study presented that in spite of different issues that use of “EPS” pose, these are set as an affirmative phase to the trade and industry improvement of a nation. All the same, it is full up possible can be recognized no more than by raising its attentiveness amongst individuals. Eelu and Nakakawa study [6] aimed to investigates issues hindering increased adoption of e payment systems in an improving economy (specifically Uganda), and propose possible strategic capabilities that key stakeholders can actualize to address the issues and enhance e payment adoption. The result showed that the challenges hindering technology adoption and critical success factors; conducting a survey on challenges hindering e-payment adoption and possible solutions; and “using factor analysis, correlation analysis, regression analysis, and thematic analysis to identify factors influencing adoption of e payment”. Action Taking stage was executed by extending TAM to derive FAEP as a holistic framework that provides an understanding of requirements for increasing adoption of e-payment in a developing economy. Evaluate and specify learning stages were executed by subjecting FAEP to expert scrutiny using walkthroughs. Accordingly, the use of “EPS” depends on the extent of acquiescence of the targeted users and customers, especially in universities, and in light of the rapid development in the number of Internet users, electronic commerce, and electronic payment systems in Jordan, many Jordanian universities have tended to provide electronic payment service to their students, except that The number of users of this service is still limited. Therefore, the major idea of research in this paper is to investigate the attitudes of users towards adopt of EPS mechanism, and to test their acceptance to that. and also, to test the TAM model as a Theoretical basis for understanding user attitudes regarding the use of EPS. This research also aims to investigate and evaluation the relationship between students' intentions in the direction of using EPS and some variables such as “perceived ease of use, perceived benefit, behavioral intentions, and the actual use of

the system". Add to that, the importance of the current research stems from an attempt to find out the latest information technology models used in determining the extent to which students accept electronic payment systems in Jordanian universities. Also, the importance of the research comes from the scarcity of previous studies in the Jordanian environment that dealt with analyzing students' attitudes and intentions towards using electronic payment systems in the light of information technology features. Accordingly, the main research problem can be identified in the following question: What is the extent of acceptance and the usability of using electronic payment systems in Jordanian universities?

2. ELECTRONIC PAYMENT SYSTEM

The electronic payment process began in Jordan in 1991, through an institution created from banks, which is the Jordanian payment services that aimed to form an umbrella for electronic payment services in the Kingdom, and the company was working on establishing an integrated system for electronic payment services in the Kingdom, represented by devices POS terminals, after which a network of ATMs is established within the national ATM network. This network linked all ATMs in the Kingdom to one network, which enhanced the credibility of electronic use through ATMs and POS devices. Trust has also been strengthened in infrastructure in Jordan to deploy specialized electronic payment devices, in addition to enhancing confidence in banks to issue cash tools such as electronic payment cards of all kinds; Because of the strong infrastructure in Jordan, whether through banks or through network systems and telecommunications companies. Therefore, thanks to the efficient strategy that was pursued, and in view of the company's ongoing efforts, Jordan was able to launch and publish other tools such as mobile payment, which falls within the framework of enhancing financial inclusion, which the Central Bank began calling for and setting general frameworks for work in it for a while. Therefore, the "e-Fawateercom" system has been launched, which means that the form of the electronic payment system in Jordan is beginning to take an advanced form and a clear vision to achieve the financial inclusion strategy, which is concerned with providing all modern, easy and safe payment methods for citizens. The attitudes of the government and related parties have strengthened the cybersecurity system, which means providing security for all governmental and private networks, and thus enhancing the confidence of citizens to go towards electronic payment channels [3]. Moreover, the "legislative environment in Jordan" is supportive of the spread of electronic payment, especially after "the Central Bank of Jordan" has taken active steps to regulate the work of the market. "The Central Bank" has carried out a development of the regulatory framework for the EPS through a smartphone, and has also developed a legislative framework for the system and the companies operating in it, which enabled large companies that possess the ability and expertise, to meet the requirements of "the Central Bank".

Which is considered as standards requirements of global institutions, particularly in Cybersecurity and maintaining process during crises, which are necessary requirements at the global level. Taking measures, whether from the central bank or operating companies, has enhanced financial inclusion, and has enabled the goals of the financial inclusion strategy launched by the central years ago, which are concerned with providing all modern, easy and safe payment methods for citizens [8] [11]. There is a significant increase towards the adopt of electronic commerce in Jordan; Due to the presence of strong infrastructure and tools that reinforce this trend, such as the proliferation of smartphones connected to the Internet around the clock, and this is also done through the use of various electronic payment channels, this has contributed to doubling the percentage of electronic commerce annually, due to the increased consumer awareness of electronic payment uses, As a result of the high friendliness of the electronic payment system in the Kingdom and its great reliability. The development witnessed by the Kingdom in this field during the past decades puts Jordan in a good location in terms of infrastructure and availability of electronic payment tools. The legislative environment in the Kingdom and its support has helped in the spread of electronic payment, as the Central Bank took several years ago to take effective steps towards regulating the work of the market, And he set a regulatory framework for the smartphone payment system, and the legislative framework for the work of this system and the companies operating in it, in addition to launching the general framework for the work of system of "e-Fawateercom" in 2014, and asking the companies operating in this field to adjust their conditions according to the framework of the EPS on the Central Bank. This measure has enabled large companies that possess the ability and expertise, such as Network International Jordan, to meet the necessities of the Central Bank, which are relatively compatible with the necessities and values of global institutions, especially in the field of cybersecurity and business sustainability during crises [9].

3. TECHNOLOGY ACCEPTANCE MODEL

The TAM (Technology Acceptance Model) is the honest and reliable forms that aims to give details the "acceptance of information systems". Thus, this model is one of the most model that used in many studies. "TAM" aims to clarify the user's behavior towards information systems. In 1986, Davis [16] established this model based on the logical "theory of action" established by Ajzen & Fishbein [15] in 1980 and the "theory of behavior". The original form of accepting "complete" technology claims on an individual's use of the information system can be explained by three factors: "perceived benefit", "ease of use", and a intuition towards use, as this model assumed that the trend towards use was a determining factor for actual use or not to use. The user's direction, in turn, is influenced by two main factors: perceived benefit, and perceived ease of use. "The perceived ease of use" also has a direct effect on the perceived benefit.

Finally, “the perceived benefit and ease of use” are affected by other external factors. Further, in 1993, Davis [5] modified the “complete” TAM model (shown in Figure 1) as the “perceived benefit” effects the intention toward the “actual use of the system” [5].

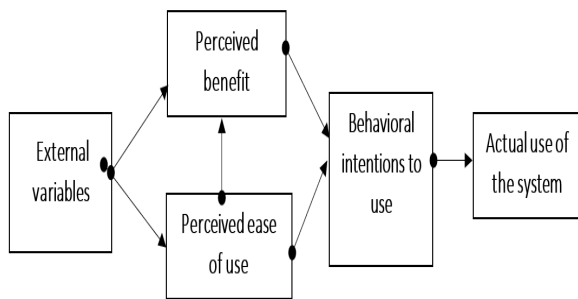


Figure (1): "modified technology acceptance model".

4. RESEARCH MODEL

This section, the research model for the variables is presented, and an explanation of each of the variables in order to construct the main research and its hypotheses. This research seeks to examine the attitudes of participants universities regarding the use of the EPS and to validate their acceptance level. The research also seeks to test the effectiveness of the technology acceptance model as a theoretical basis for understanding users’ attitudes towards using of EPS. Figure (2) shows the independent variables (gender and educational level) and the dependent variable “the effectiveness of the TAM”. Furthermore, this figure demonstrates the relationship between “gender” and “educational level” on acceptance of EPS, based on the TAM variables which are “the perceived ease of use, perceived of the benefit, behavioral intentions to use, and the actual use of the system”.

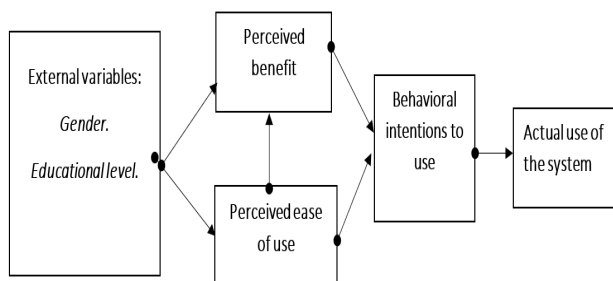


Figure (2): The Conceptual (TAM) of the research model

Figure above shows the research conceptual model according to what has been seen and observed through previous studies. In the following, the research hypotheses are presented according to what have been seen and observed through research theoretical framework.

1. “There is a significant relationship between students’ gender and the (perceived ease of use, and the perceived of the benefit) of the electronic payment in Jordanian universities”.

2. “There is a significant relationship between students’ educational level and the (perceived ease of use, and the perceived of the benefit) of the electronic payment in Jordanian universities”.
3. “There is a significant relationship between the perceived ease of use and the actual use of the system of electronic payment in Jordanian universities”.
4. “There is a significant relationship between the perceived of the benefit and the actual use of the system of electronic payment in Jordanian universities”.
5. “There is a significant relationship between the perceived ease of use and the behavioral intentions to use the use of the electronic payment in Jordanian universities”.
6. “There is a significant relationship between the perceived of the benefit and the behavioral intentions to use the use of the electronic payment in Jordanian universities”.
7. “There is a significant relationship between perceived ease of use and the perceived of the benefit towards the use of the electronic payment in Jordanian universities”.

4.1 Methodology

This investigation applied a survey methodology. The “survey” was planned to explore “the level of acceptance and use of the existing electronic payment system in Jordan”. The population for the research was Jordanian universities. since that the Central Bank of Jordan supervises the procedures for providing the service “e-Fawateercom”, which is a system for viewing and collecting bills electronically in the Kingdom in order to facilitate on the citizens, and to provide time, effort and flexibility in using the various banking channels to perform the processes of displaying and paying bills due to many private and governmental sectors; and for the Higher education sector, the governmental and private universities have participated in using the electronic payment system through this service. Accordingly, universities in Jordan involved in this service will represent the paper population for the present research. As well as the sample and sampling mechanism and survey method were adopted. Particularly, the questionnaire was shaped in accordance with the TAM model. The outcome of the survey is offered using descriptive and chart symbol.

4.2 Research sample

In the current research, the survey targeted Jordanian university students. And due to the inaccessibility of all students of Jordanian universities that use the EPS, it was relied upon to take samples. And participated in this electronic survey (282) students in Jordanian universities that use the electronic payment service. As for the Jordanian universities that were involved in this research study, there were 24 universities. Given the large size of the research population and the difficulty of restricting it, the study sample was randomly selected from all Jordanian university students that offer electronic payment services from among its services. To achieve the research objectives, the questionnaire was applied electronically that was specifically designed for

research purposes and was formed. The questionnaires were retrieved and questionnaires that were not answered seriously or in an objective manner were deleted. The final sample of the study contained of (282) respondents, who were analyzed. Table (1) shows the demographic characteristics.

Table 1: The Demographic Characteristics of the participants (N= 282).

Variable	N (%)
Gender	
Male	134 (47.5%)
Female	148 (52.5%)
Educational level	
Bachelor	148 (52.5%)
Master	107 (37.9%)
Doctorate	27 (9.6%)

The male participants make up 134 (47.5%) of the total sampled individuals. while the female of participants makes up 148 (52.5%) of the total sampled individuals. most of the participants Educational level refers to Bachelor, which make up 148 (52.5%) of the total sampled individuals. Cronbach Alpha was employed to find a measurement of the internal consistency and reliability of data collection tools. As mentioned by Sekaran & Bougie [12], the value of Cronbach's Alpha must be more than (0.70) to be acceptable. The reliability test for all variables was (.922), hence, it reflects the agreement of the conditions related to the attitudes of participants towards the use of the EPS, and their acceptance test for that, in addition to the effectiveness of accepting technology in the use of EPS.

5. RESULTS & DISCUSSION

This part displays an examination of the data collected surrounded by questionnaires, which aims to analyze the attitudes of learners in Jordanian universities on the way to the use of the “EPS”, and to test their receipt to that, in addition to examination the effectiveness of the “TAM” as a theoretical starting point for understanding student attitudes on the way to the use of the “EPS”. SPSS was used to perform statistical analysis for the participants responses.

5.1 Descriptive Statistics

Descriptive Statistics analysis shows the responses views and agreement with the statements that examine the attitudes of students (users) in several Jordanian universities towards the use of the EPS, and to test their acceptance to that, in addition to test the effectiveness of the “TAM” as a theoretical basis for understanding student attitudes towards the use of the “EPS”, which have recently become a major place in Jordanian universities. next section shows each statements with its associated mean and Standard Deviation (SD), which gives

more insight about the sample agreement of the “TAM” factors “acceptance and usability of electronic payment systems in Jordanian universities”, which have recently become a most important place in Jordanian government systems with a sample the Jordanian society.

5.2 The Technology acceptance model factors

This part represents for the “TAM” factors, which talk about to the members’ level of preparation with the lower than declarations about usability and accessibility. Table (2) displays the sample agreement as regards the “TAM” factors statements. Table (2) gives the idea of the general mean of all statement associated to perceive benefit in “TAM” factors was (3.88), which reflects a high-level agreement. The SD value was (0.667), this value gives details about the convergence on selected sample response. The maximum mean was (4.07) for statement number 7 “I think EPS are a safe system and protect the data for the user.”, This indicates high-level agreement. The lowest mean was (3.80) for statement number 1 “I found that the EPS is easy to use”, which indicates high-level agreement. In most cases, the participant attitude was positive. The collected responses show that the participants have a positive attitude towards the perceived ease of use in the acceptance and usability of “EPS”. Moreover, the overall mean of all responses related to perceived ease of use in “TAM” factors was (3.96), which reflects a high agreement. Moreover, the SD value was (.672), this was normal and reflects convergence on the response of the sample. The highest mean was (4.13) for statement number 7 “I have sufficient knowledge in using the EPS.”. This reveals high agreement, and the lowest mean was (3.66) for statement 6 “I think that the EPS makes it easy to pay the fees owed to me to the university”.

Table 2: The Technology acceptance model factors

Statement	Mean	Standard deviation	Rank
Perceived ease of use			
“I found that the EPS is easy to use”.	3.80	.950	high
I have sufficient knowledge in using the electronic payment system.	4.13	.795	high
“I think it is easy to be proficient in using the electronic payment system”.	3.96	.808	high
“Total Mean and SD”	3.96	.672	high
Perceived benefit			
“I think that the EPS will improve the way I pay	3.81	.892	high

for university fees”.			
I think that the EPS will increase the productivity of the university and facilitate its transactions.	3.98	.889	high
I think that the EPS makes it easy to pay the fees owed to me to the university.	3.66	.979	good
I think EPS are a safe system and protect the data for the user.	4.06	.755	high
Total Mean and SD	3.88	.667	high
Behavioural intentions to use			
I think the EPS is a good idea.	3.82	.888	high
“I think paying with an EPS is a wise idea”.	3.50	.967	good
I feel positive about the EPS.	3.76	.917	high
I feel there is a self-efficacy for EPS.	3.73	.947	high
I have the intention to be a permanent user of the EPS.	3.70	.956	high
I feel confident that my information is in the EPS.	3.99	.893	high
Total Mean and SD	3.75	.757	high
Actual use of the system			
I do not find any difficulty in accessing the university's EPS.	3.79	.953	high
I do not find it difficult to use the university's EPS.	3.54	1.057	good
I have no difficulty in clarity of the university's EPS.	3.66	.899	good
“Total Mean and SD	3.66	.836	good

In general, the participants were agreeing that there is perceived benefit in the acceptance and usability of electronic payment systems in Jordanian universities, and participants have a positive attitude towards that. The general mean of all statement associated to behavioral intentions to use “TAM” factors was (3.75), which reflects a high agreement. Moreover, the SD value was (.757), which reflects convergence on the response of the sample. The maximum mean was (3.99) for statement number 13 “I feel confident

that my information is in the EPS.” which reflects high agreement, and the lowest mean was (3.50) for statement number 9 “I think paying with an EPS is a wise idea, which reflects good agreement. In general, the sample attitude toward the questions was positive. Consequently, the participants were agreeing that the behavioral intentions to use in the acceptance and usability of “EPS” in Jordanian universities, and participants have a positive attitude towards that”. Finally, the overall mean associated to actual use of the system in “TAM” factors was (3.66), which reflects a good agreement. Moreover, the SD value was (.836), which indicates convergence on the response of the sample. The highest mean was (3.79) for “I do not find any difficulty in accessing the university's EPS” statement, which reflects high agreement. the lowest mean was (3.54) for “I do not find it difficult to use the university's EPS” statement, which indicates good agreement. Overall, the sample attitude toward the questions was positive.

5.3 Research Hypothesis

Hypothesis 1: “There is a significant relationship between students’ gender and the (perceived ease of use, and the perceived of the benefit) of the electronic payment in Jordanian universities”.

The above hypothesis was tested using Regression. Table (3) illustrates the correlation between the “students’ gender” variable and the “perceived ease of use, perceived of the benefit” variable. The R-value (.059 a, .011a) implies the correlation between the (gender) and the “perceived ease of use, perceived of the benefit” respectively. R square shows that 3% of the change observed from the ease of use by gender, and the other remains percentage (97%) was expressed by other factors. Also, the R square indicates that 0% of the change observed from the perceived benefit expressed by gender. The value of sigma (.324) and (.857) which was greater than the significant level (0.05), which implies that there was no significant relationship between “gender” and the “perceived ease of use and perceived of the benefit” of the EPS.

Table 3: Correlation between students’ gender and “perceived ease of use, perceived of the benefit”

TAM Variables	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
ease of use	.059 a	.003	.000	.500	.324	-.059
benefit	.011 a	.000	-.003	.501	.857	-.011

Hypothesis 2: “There is a significant relationship between students’ educational level and the (perceived ease of use, and the perceived of the benefit) of the electronic payment in Jordanian universities”.

Hypothesis 2 was tested using Regression. Table (4) demonstrates the results of the correlation between the (educational level) and the “perceived ease of use, perceived

of the benefit". The R-value (.027a,) and (.012a) shows that the correlation between the (educational level) and the "perceived ease of use, perceived of the benefit" respectively. R square indicates that 1% change from the "perceived ease of use" by "educational level", and the other remains percentage (99%) was expressed by other factors. R square for perceived benefit shows that 0% change from the perceived benefit expressed by educational level. The value of sigma (.651, .847) respectively, which was more than significant level (0.05), which means that there was no significant relationship between students' educational level and the "perceived ease of use, and perceived of the benefit" of the electronic payment in Jordanian universities.

Table 4: Correlation between educational level and perceived ease of use, perceived of the benefit

TAM Variables	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
ease of use	.027a	.001	-.003	.630	.651	.027
benefit	.012a	.000	-.003	.630	.847	-.012

Giving to the aforementioned results in Table (4), this confirms the hypothesis "there is no relationship between students' educational level and the perceived ease of use and the perceived of the benefit towards the use of EPS".

Hypothesis 3: "There is a significant relationship between the perceived ease of use and the actual use of the system of electronic payment in Jordanian universities".

Table (5) illustrates the correlation between "perceived ease of use" and "actual use of the system". The R-value (.399a) refers to the correlation between "perceived ease of use" and "actual use of the system". R square for actual use of the system indicates that a 16% change in the actual use of the system expressed by perceived ease of use, and the remaining percentage (84%) was expressed by other factors. The value of sigma (.000) was less than the significant level (0.05), which confirms that there was a significant relationship between the "perceived ease of use" and "actual use of the system". Moreover, along with Beta values (.399), this indicates a positive relationship and indicates that any enhancement on perceived ease of use will enhance the actual use of the system.

Table 5: Correlation between perceived ease of use and actual use of the system

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
Actual Use	.399a	.159	.156	.61693	.000	.399

Hypothesis 4: "There is a significant relationship between the perceived of the benefit and the actual use of the system of electronic payment in Jordanian universities"

Table (6) shows the results of the correlation between "perceived of the benefit" and "actual use of the system" of EPS. The R-value (.489a) refers to the correlation between independent variable "perceived of the benefit" and the dependent variable "actual use of the system" of electronic payment. R square indicates that 23.9% variance in the perceived of the benefit, and the other remains percentage (76.1 %) was expressed by other factors. The value of sigma (.000) less than the significant level (0.05), which reveals that there was a significant relationship between "perceived the benefit and the actual use of the system". Beta values (.489) strengthens that this relationship was positive. This signifies that any enhancement in perceived benefit will enhance the actual use of the system.

Table 6: Correlation between perceived of the benefit and actual use of the system

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
Actual Use	.489a	.239	.239	.58334	.000	.489

Hypothesis 5: "There is a significant relationship between the perceived ease of use and the behavioral intentions to use the use of the electronic payment in Jordanian universities"

Table (7) demonstrates the correlation between the "perceived ease of use" and "behavioral intentions to use". The R-value (.635a) refers to the correlation between the "perceived ease of use" and" (behavioral intentions to use". R square for actual use indicates that 40.3% variance in behavioural intentions articulated by perceived ease of use and the remaining percentage (59.7 %) was expressed by other factors. The value of sigma (0.000) was less than the significant level (0.05), this specifies that there was a significant relationship between the "perceived ease of use and the behavioural intentions of the system". Similarly, Beta values (.635) confirms that this relationship was positive and implies that any enhancement on perceived ease of use will enhance the behavioural intentions to use. Consequently, the result shows that "there is a positive between the perceived ease of use and the behavioral intentions of the electronic payment in Jordanian universities".

Table 7: Correlation between the perceived ease of use and the behavioral intentions

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
Behavioral intentions to use.	.635a	.403	.403	.51997	.000	.635

Hypothesis 6: “There is a significant relationship between the perceived of the benefit and the behavioral intentions to use the use of the electronic payment in Jordanian universities”

Table (8) shows the correlation between the “perceived of the benefit” and the “behavioral intentions to use”. The R-value (.745a) refers to the correlation between the dependent variable “perceived of the benefit” and the independent variable “behavioral intentions to use”. R square for behavioural intentions to use indicates that 55.5% change in the behavioural intentions to use expressed by perceived of the benefit and the remaining percentage (44.5%) was expressed by other factors. The value of sigma (.000) was less than the significant level ($\alpha=0.05$), which means that there was a significant relationship between the” perceived of the benefit and behavioural intentions to use”, and according to Beta values (.745), the type of this relationship was positive which means that any improvement and increased on perceived of the benefit will increase the behavioural intentions to use. Giving to the above, the result shows that “there was a positive relationship between perceived of the benefit and the behavioral intentions to use of EPS”.

Table 8: Correlation between perceived of the benefit and behavioral intentions to use in

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
Behavioral intentions to use	.745a	.555	.554	.44581	.000	.745

Hypothesis 7: “There is a significant relationship between perceived ease of use and the perceived of the benefit towards the use of the electronic payment in Jordanian universities”.

Regression test was used to test this hypothesis; Table (9) shows the correlation between the “perceived ease of use” and the “perceived of the benefit”. The R-value (.639a) refers to the correlation between the dependent variable “perceived ease of use” and the independent variable “perceived of the

benefit”. R square for actual use indicates that 40.8% change in perceived of the benefit expressed by perceived ease of use, and the remaining percentage (59.2%) was expressed by other factors. The value of sigma (0.000) was less than the significant level ($\alpha=0.05$), which means that there was a significant relationship between the “perceived ease of use and perceived of the benefit”, and according to Beta values (.639), the type of this relationship was positive which means that any improvement and increased on perceived ease of use will increase the perceived of the benefit. Thus, the result confirms that “there is a positive relationship between perceived ease of use and the perceived of the benefit of EPS”.

Table 9: Correlation between perceived ease of use and the perceived of the benefit in TA Model

Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sigma	Beta
perceived benefit	.639a	.408	.408	.51770	.000	.639

6. CONCLUSION

The research noted that Jordan's ambition towards electronic payment services has been increasing significantly, and the use of this service has been increasing in the recent period in the various institutions of the Hashemite Kingdom of Jordan, and not only in institutions of higher education; Due to the appearance of the COVID 19 pandemic. The present investigation used the way of the electronic survey by means of a questionnaire that was designed according to the “TAM” and used to decide the level and possibility of accepting the use of EPS from the viewpoint of end-users. The outcomes of the investigation showed that almost all the members had a positive approving that there is a relation between acceptance and usability and “TAM” factors of EPS in Jordanian universities. Additionally, the study sample were agreeing that there were no relations among students’ gender and “the perceived ease of use and the perceived of the benefit” to use of the “EPS” in Jordanian universities.

The outcome displays that there is no relationship among students’ educational level and “the perceived ease of use and the perceived of the benefit” to use of the “EPS” in Jordanian universities. Moreover, the result displays that there is a positive relationship between “perceived ease of use and the actual use” of the EPS in Jordanian universities. The result illustrates that there is a positive relationship between “perceived benefit and the actual use” of “EPS” in Jordanian universities. Also, the result displays that there is a positive between the “perceived ease of use and the behavioral intentions” of the EPS in Jordanian universities. The result shows that there is a positive relationship between “perceived of the benefit and behavioral intentions” to use EPS. Finally, the result confirms that there is a positive relationship

between perceived ease of use and the perceived benefit of EPS in Jordanian universities. As a result, the research recommended that:

- With individual characteristics, success or failure can be predicted in electronic payment systems in Jordanian universities which helps universities to predict the range of Acceptance and Usability for the system.
- The necessity to study the factors that support students to resist the change in the electronic payment method and try to address it.

ACKNOWLEDGMENT

The authors are very grateful to all participating students from the different Jordanian Universities. The authors are greatly value your participation in this research study, and your willingness to share your valuable knowledge of your experience with EPS.

REFERENCES

1. Ab Hamid, N. R., & Cheng, A. Y. (2020). **A risk perception analysis on the use of electronic payment systems by young adult**. *Order*, 6(8.4), 6-7.
2. Abrazhevich, D. (2001). **Electronic payment systems: issues of user acceptance**. In B. Stanford-Smith and E. Chiozza (Eds.), *E-work and E-commerce*.
3. AL-Majali, M. M., & Bashabsheh, A. A. (2016). **Factors that affect commercial banks customers' intention towards electronic payment services in Jordan**. *International Business Research*, 9(3), 79.
4. Bindusara, G., & Hackney, R. A. (2009). **Towards successful e-Payment systems: An empirical identification and analysis of critical factors**.
5. Davis, F.D. (1993). **User acceptance of information technology: System characteristics, user perceptions and behavioral impacts**, *International Journal of ManMachine Studies* 38, 475-487.
6. Eelu, S., & Nakakawa, A. (2018). **Framework towards Enhancing Adoption of Electronic Payment in a Developing Economy: A Case of Uganda**. *The African Journal of Information Systems*, 10(3), 5.
7. Ekuobase, G. O., & Oliha, F. O. (2013). **Acceptance and Usability of Electronic Payment Systems in Nigeria Major Markets**. *International Journal of Electronics Communication and Computer Engineering*, 4(2), 502-506.
8. Goldstein, Y. (2016). **The model for sustainable digital financial inclusion in Jordan**. *Journal of Payments Strategy & Systems*, 9(4), 241-245.
9. Khrais, L. T., Mahmoud, M. A., & Abdelwahed, Y. M. (2019). **A Readiness Evaluation of Applying e-Government in the Society: Shall Citizens begin to Use it?**. *Editorial Preface From the Desk of Managing Editor...*, 10(9).
10. Masihuddin, M., Khan, B. U. I., Mattoo, M. M. U. I., & Olanrewaju, R. F. (2017). **A survey on e-payment systems: elements, adoption, architecture, challenges, and security concepts**. *Indian Journal of Science and Technology*, 10(20), 1-19.
11. Qasim, D., Mohammed, A. B., & Liñán, F. (2018). **The role of culture and gender in e-commerce entrepreneurship: Three Jordanian Case studies**. In *Entrepreneurship Ecosystem in the Middle East and North Africa (MENA)* (pp. 419-432). Springer, Cham.
12. Sekaran, U., & Bougie, R. (2013). **Research methods for business – A skill building approach**, 6th edition. West Sussex, United Kingdom: John Wiley & Sons.
13. Singh, T. V., Supriya, N., & Joshna, M. S. (2016). **Issues and challenges of electronic payment systems**. *International Journal of Innovative Research and Development*, 3(2), 50-53.
14. Tella, A. (2012). **Determinants of E-Payment Systems Success: A User's Satisfaction Perspective**. *International Journal of E-Adoption (IJE)*, 4(3), 15-38.
15. Ajzen, I., & Fishbein, M. (1980). **Understanding attitudes and predicting social behavior**. Englewood Cliffs, NJ: Prentice-Hall.
16. Davis, F.D. (1986). **A technology acceptance model for empirically testing new end-user information systems: theory and results**. Doctoral dissertation. MIT Sloan School of Management, Cambridge, MA
17. Alshira'h, Mohammad. **"The Effects of Usability and Accessibility for E-Government Services on the End-User Satisfaction"**. *International Journal of Interactive Mobile Technologies*, Volume 14.13 (2020).
18. Reem Alnanih, Nadia Bahatheg, MeladAlamri and Rana Algizani **"Mobile-D Approach-based Persona for Designing User Interface"**, *International Journal of Advanced Trends in Computer Science and Engineering*, Volume 8, No.5, September - October 2019
19. Ashwini G. Varma and. Jignysa B. Sanghavi **"Observing User Interface Design Patterns for Websites from a User-experience Point-of-View"**, *International Journal of Advanced Trends in Computer Science and Engineering*, Volume 9 No.2, March - April 2020