



THE DETERMINANTS FOR USER'S INTENTION TO USE IRAQI SCHOOL SERVICES PORTAL

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ABSTRACT

The purpose of this paper is to explore the determinants for the user intention to use to web portals in Iraqi schools. Iraqi Schools portal provides a welcoming place whereby private schools can establish their information, activities, rule, regulation, and make a promotion of its business to Iraqi community. Further, it provides a new, secure and effective communication channel through SMS messaging and online information exchange. A survey of 171 questionnaires is conducted in order to explore the determinants that could influence the user's intention to use the Iraqi school portal. The results show that the user's intention to use Iraqi school portal is relatively high. Also, the results indicated that there are three variables influence the user's intention to use, namely, perceived ease of use, attitude and subjective norm. Therefore, the proposed model will add to the empirical studies in the field of Web portal development and Web based system as a whole.

Keywords: *Web Portal System (WPS), Service portal, User's intention to use, Information System (IS), Iraqi Schools Services (ISS), Perceived ease of use (PEU).*

1. INTRODUCTION

The Web Portal System (WPS), as a type of Web information system, is mainly concerned with providing the support to managerial functions for the organizations at administrative different levels [1-2]. Additionally, the deployment of WPS at organizations such as Iraqi educational institutions has a positive effect on the effectiveness, image and productivity of portal users such as parents [3-4].

A private school in Iraq is an institution established and administered by Iraqi citizens which derive its finances from civil bodies (investors) or the government, or both of them [5]. In general, there is one type of private primary school in Iraq, a regular school. With curricula similar to that of the public schools, other approaches are also added by the private schools, including computer and language courses in English for all stages of the students. In addition, these private schools give greater attention to the special needs of students, which entail extracurricular activities, technical activities, sporting activities, along with the maintenance of buildings and health facilities.

The proposed business model will be a business to business model (B2B). B2B model is a

business model that sells products or provides services to other business [6]. The schools will provide Al-Shamel Company with all the information needed for a school website and all the information related to the students' profile. The company will be responsible for developing and updating the school services web pages and the students' progress monitoring system through ISS. The updating process will include the general information for the schools on their web pages. Moreover, the students' information in their profile will be updated by the company staff.

Furthermore, the company will provide many practical services and facilities to its customers such as delivering urgent notes from the students profile to their respective parents' cell phones. These notes on the portal are required to inform the students' parents about some important issues related to their children's achievements, like their scholastic accomplishments. The other issues, like the student's home work, will be on the student profile that will be accessible for the parents to review it easily. The portal directs communication between the parents and teachers through the student's profile without limitation of time. Furthermore, the teachers can replay on the comments and questions written on the student's profile any time. So, the contacts between the

teachers and parents do not necessary happen during the school's business hours. Figure 1 shows the main menu of Iraqi schools portal.



Figure 1: The main menu of Schools Portal

Accordingly, this study is primarily concerned with the literature review to conceptualize and explore the relationships among study variables in section two. Section three provides the theoretical framework of study variables in the light of this review. Section four presents the questions and hypotheses of the study. Section five discusses the methodology that the researchers followed in the present study. Section six focuses on the hypotheses testing and results in order to validate the proposed theoretical framework. Section seven provides discusses the results of the study. Finally, the conclusion section sums up the main points and contributions of the current study.

2. RELATED WORK

In this context, the researchers have done some literature review to test the user intention to use the proposed portal in this study and achieving the objectives of this study. The researchers used technology acceptance model that proposed by [7], and used the modification of this model to design the research model for this study more details about the literature review summarized in the next paragraphs.

2.1 Technology Acceptance Model (TAM)

It is the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975) that has given rise to The Technology Acceptance Model or alternatively, TAM. [7] has taken to bring the TRA into applications on a series of behaviors or the use of computer technologies in order to come up with the Technology Acceptance Model (TAM); one of which has been very popular piece of citation from the comprehensive IS research [7, 8].

To add, the adoption of TAM is broadened among the researchers to forecast the user's Information System (IS)'s adoption. Accordingly, TAM is well-viewed as one of the major models adopted to examine the factors of the users' actual acceptance or adoption of the Information System which can impact his / her aim in using this technology. In fact, the importance of the TAM model is very much acknowledged, which dominance is explained by a few factors: (1) its focus is specific on information technologies; (2) its validity and reliability that have been tested and approved; (3) its universal application; (4) its compiled research tradition [9].

Thus, there are two beliefs that have been proposed by TAM concerning such a novel technology: Perceived Usefulness and Perceived Ease of Use. These two equally significant beliefs can ascertain a person's attitude on the technology adoption, which can also leave an impact on their intention to utilize it [10].

2.2 Original TAM

The initial TAM has brought Perceived Usefulness and Perceived Ease of Use into the limelight, as the key inculcating determinants as one intends to adopt a technology. A third construct, namely attitude, also functions as a mediator between these two aforementioned determinants and the intention which concerns with the behavioural aspects. More detailed hypothesis can be made depending on the behavioral intent, and consequently the actual usage can be predicted and made. In addition, [7] has interpreted Perceived Usefulness in the sense of how far a particular system can work to enhance job performance. Perceived Ease of Use, by contrast, can be described as the use of a particular system which would be free of effort. In responding to this, two studies have been manipulated to test these hypotheses. The first had done a research on 120 users, who were also the current staff of IBM. The technologies involved PROFS, a system which highlights the use of electronic mail, and XEDIT, a general editor. The second study, which was applied on 40 MBA students had been dependent on two varying charting tools, Chart-Master and Pendraw. Through these tests, both Perceived Usefulness and Perceived Ease of Use had served as a statistical testimony to be important determinants for the behavioral intention. It is also worth noting that the results of the two studies further make a revelation that Perceived Usefulness had stood out as stronger, more robust determinant

than the Perceived Ease of Use [7]. With this, in essence, the major concern for users is shown in the Usefulness followed by Ease of Use. Another finding reveals that attitude only makes up a fractional mediator of these two variables on behavioral intent.

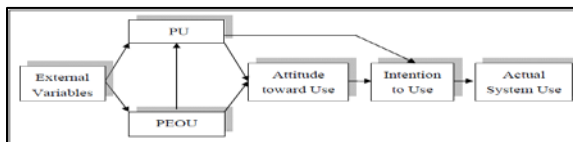


Figure 2. Technology Acceptance Model (Davis, 1989).

2.3 Parsimonious TAM

TAM has been adopted by [11] in his study in the application onto 107 MBA students using a word processing application called WriteOne. The findings of their study are consistent with those of [7]. To add, Perceived Usefulness is disclosed as having a harsh effect on intention, whereas Perceived Ease of Use was not as autonomous, despite its continuing importance. However, [11] have the view that attitude did not mediate Perceived Usefulness and Perceived Ease of Use in full force. Consequently, a more parsimonious TAM was proposed to have the capacity to discard the attitude construct off the model. According to previous works, some earlier results have been accepted by researchers, for instance [12] who had completed a study on 585 students making use of a digital library. [13] performed an analysis on the receptivity of the general IT usage in 360 undergraduate business students with the use of a word processor, spreadsheet, presentation software, and a database. [14] have concentrated on tackling the issue of the user's acceptance among 114 medical students by means of various search engines, while [15] took to examine end-user computing among 195 employees hired in various sectors in Taiwan to name two, the service and manufacturing sectors. In addition, [16] have studied a Web-based system used in a local university involving 109 students undertaking a preparatory information systems course. Each study would either illustrate Perceived Usefulness as a stronger determinant on behavioral intent than Perceived Ease of Use or offer the explanation whereby the Perceived Ease of Use is a non-significant determinant.

2.4 Van Der Heijden (2003) Model

[17] has initiated on a research model shown in figure 3 based on his study named "Factors

influencing the usage of websites: the case of a generic portal in The Netherlands". The model that he recommends also brings into light the Technology Acceptance Model (TAM) as it stresses on the individual's level of acceptance and the increasing websites use. In concept, he examines Perceived Ease-of-Use, Usefulness, Enjoyment, and the effect of attitude towards using, intention to use and actual use. [17] model is also known to have established a new construct, the website's "perceived visual attractiveness" and makes a strong contention that attractive-looking websites (or otherwise) can influence Usefulness, Enjoyment, and Ease-of-Use. Hence, [17] has identified Perceived Usefulness as the use of a particular system which might improve the individual's job performance. According to [17] Perceived Ease-of-Use can be understood as the effort-free use of a specific system [7].

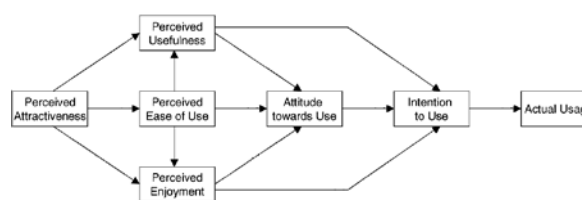


Figure 3. Model Proposed by Van Der Heijden

2.5 Conci, Pianesi, and Zancanaro's (2009) Model

[18] provide an introduction to the research model, as figure 4 illustrates. The research model leans on their research entitled "Useful, Social and Enjoyable: Mobile Phone Adoption by Older People". The model that they have proposed refers closely to the Technology Acceptance Model (TAM). They used this model to make an observation on the impacts of external variables on internal beliefs; to name one, intentions. TAM makes this presumption that the actual technology usage really clings on an individual's intention in using it. An intention is consequently decided by the individual's views on the advantages and on the ease-of-use of this newly-arising technology. Thus, TAM has widely been used in the previous studies to investigate technology approval, as well as to receive extensive empirical support and extensions to improve its capacity in having to tolerate a diversity of technology acceptance domains. In their proposal, [18] have leaned on the study by [11] and use an improved version of TAM where the intention to use a system (BI) is directly and significantly impacted by both the Perceived

Usefulness (PU) and the Perceived Ease of Use (PEOU), without having to be filtered via attitude as established in the first version of TAM. This version has later been labeled the Parsimonious TAM (pTAM) by Sharp [9].

the expectation that can be obtained from others. Many Netizens (so to speak) have opted for e-learning through verbal recommendations from their friends who are also enthusiastic users of the system.

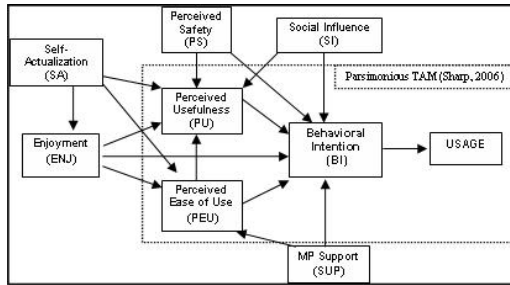


Figure 4. Conci, Pianesi, and Zancanaro's Model

2.6 Lee (2010) Model

[19] has proposed a research model in his research "Explaining and predicting users' continuance intention toward e-learning: An extension of the expectation–confirmation model." The model is presented in figure 5. The model collected its grounds from the various models: the expectation–confirmation model (ECM), the technology acceptance model (TAM), the theory of planned behavior (TPB), and the flow theory to hypothesize a theoretical model to explain and predict users' intentions to resume using e-learning. Conceptually, [19] makes an effort to examine a few key areas- user's satisfaction, confirmation, Perceived Usefulness, Perceived Ease of Use, Behavioral Attitude, Subjective Norm, Perceived Behavioral Control, Perceived Enjoyment and Concentration and their effects on the attitude towards the continued intention to pursue e-learning. Lee has stated that, both theory of planned behavior (TPB) and TAM had been constructed from the theory of reasoned action (TRA) [20], which highlights an argument that both behavioral attitude and subjective norm can affect one's behavioral intention, which subsequently leaves a mark on one's real behavior. TPB then makes an addition to TRA another factor – perceived behavioral control – which plays a part in one's behavioral intention and actual behavior [21]. Many research have been reproduced, whereby they examined these three constructs and consequently confirm their validity in being able to elaborate on an individual intention to use varying IT modes [8]. Subjective norm refers to "the perceived social pressure to perform or not to perform the behavior" [21]. To put it in another way, subjective norm is associated with the normative beliefs concerning

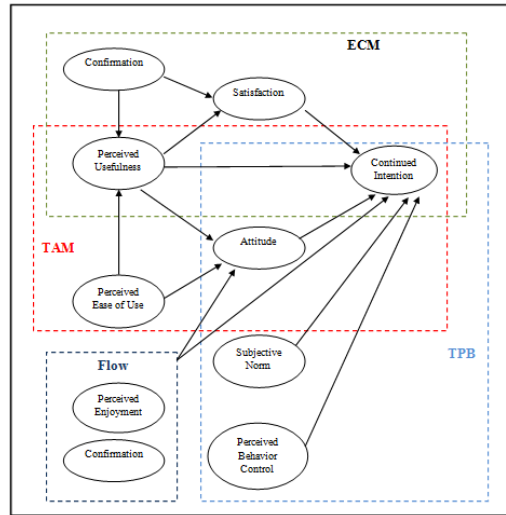


Figure 5. Model Proposed by Lee

3. THE RESEARCH MODEL

The current study has made use of the Parsimonious TAM (pTAM) and the models proposed by [17-19]. To stand next to the two components of the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use, other factors that influence acceptance by users like Attitude and Subjective Norm are also included. The research general model is depicted in Figure 6. The models were taken into adoption and modification into the Suggested Model to explain the individual's goal and purpose, which will make use of the ISS Portal. Thus, in this model the Perceived Usefulness, Perceived Ease-of-Use, Attitude, Subjective Norms, and their impact towards adopting and using the ISS Portal have been examined.

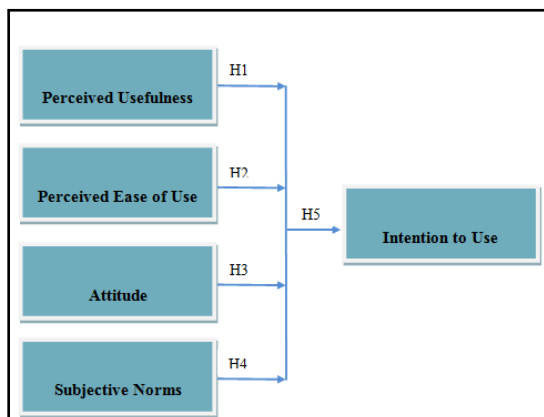


Figure 6. The Proposed Research Model

4. RESEARCH QUESTIONS & HYPOTHESES

In the light of the proposed model the research questions are:

- What is the relationship between user's perceived usefulness (PU) and user's intention to adopt Iraqi School Services portal?
- What is the relationship between user's perceived ease of use (PEOU) and user's intention to adopt Iraqi School Services portal?
- What is the relationship between user's attitude (A) and user's intention to adopt Iraqi School Services portal?
- What is the relationship between subjective norms (SN) and user's intention to adopt Iraqi School Services portal.
- What is the relationship between PU, PEOU, ATT, SN and user's Intention to Use the Iraqi School Services portal?
- What are the factors that could be applied in the design of Iraq School Services portal?

Based on the above questions, the following hypotheses are suggested to be examined:

- **H1:** There is a positive relationship between Perceived Usefulness and User's Intention to Use the ISS Portal.

- **H2:** There is a positive relationship between Perceived Ease of Use and User's Intention to Use the ISS Portal.
- **H3:** There is a positive relationship between Attitude and User's Intention to Use the ISS Portal.
- **H4:** There is a positive relationship between Subjective Norm and User's Intention to Use the ISS Portal.
- **H5:** There is a positive relationship between Perceived Usefulness, Perceived Ease of Use, Attitude, Subjective Norm and User's Intention to Use the ISS Portal.

5. RESEARCH METHODOLOGY

An extensive literature review was conducted to ensure that a comprehensive list of items was generated to assess the study variables included in the proposed model. Based on this review, the researchers generated a scale of 30 items through developing a questionnaire.

The questionnaire has the following dimensions: perceived usefulness, user's intention to use, perceived ease of use, attitude, and subject norms. Additionally, the questionnaire was developed using a seven point Likert-type scale ranging from 1=strongly disagree to 7=strongly agree.

A total of 171 questionnaires are collected from the parents where this sample size is reasonable to go towards the data analysis [22]. Later, the responses were statistically analyzed and evaluated using the Statistical Package for Social Sciences (SPSS) version 19.

For generalization, the sample technique should lead to choose a representative sample. Since each population element (i.e. parents) has an equal opportunity of being selected, it is necessary to employ simple random sampling [23].

6. DATA ANALYSIS & RESULTS

In this study, the Pearson correlation and regression analysis are utilized in order to examine the correlations and the significance of the relationships among the study factors.

Table 1 Correlation between Variables

	PU	PEU	Attitude	Subjective Norm	Intention to Use
PU	1				
PEU	0.81 **	1			
Attitude	0.81 **	0.81 **	1		
Subjective Norm	0.63 **	0.60 **	0.67 **	1	
Intention to Use	0.72 **	0.77 **	0.80 **	0.70 **	1

Table 1 shows that there are positive correlations between the study factors including independent and dependent variables (perceived usefulness, user's intention to use, perceived ease of use, attitude, and subject norms).

The regression analysis is used to test the hypotheses of this study. Tables 2 to 6 contain the values of this test that help the researchers know whether the hypotheses proposed in this study have been supported or not. The tables (2-6) will display the hypotheses that haven supported and the one that has not been supported. Table 4.11 shows that the research model is significant when R square is equal to 0.72.

H1: There is a positive relationship between Perceived Usefulness and user's Intention to Use the ISS Portal

This hypothesis has been supported, as shown in Table 2 the table clearly showcase show the variable of Perceived Usefulness has a beta $\beta=$ (0.72) with a statistically significant p value ($<$ 0.001). This means there is a significant positive impact between the user's Perceived Usefulness and user's Intention to Use ISS portal

Table 2. Simple Regression Results between Perceived Usefulness and User's Intention to Use ISS Portal

Independent Variable : Perceived Usefulness	
Standardized Coefficients (Beta)	0.72***
R ²	0.52
Adjusted R ²	0.52
R ² Change	0.52
F Value	183.16
F Change	183.16
Sig. F Change	0.00

H2: There is a positive relationship between the variable of Perceived Ease of Use and user's Intention to Use the ISS Portal.

This hypothesis has also been supported with a Beta that equals .77 and ($p<.001$). This denotes there is a significant positive impact between a user's Perceived Ease of Use and his Intention to Use ISS portal. Table 3 shows the results.

Table 3. Simple Regression Results between Perceived Ease of Use and User's Intention to Use ISS Portal

Independent Variable : Perceived Ease of Use	
Standardized Coefficients (Beta)	0.77***
R ²	0.60
Adjusted R ²	0.60
R ² Change	0.60
F Value	248.26
F Change	248.26
Sig. F Change	0.00

H3: The hypothesis which reads that there is a positive relationship between Attitude and user's Intention to Use the ISS Portal.

This hypothesis has been supported With a Beta value that equals 80 and ($p<.001$). The results were shown in table 4.

Table 4. Simple Regression Results between Attitude and User's Intention to Use ISS Portal

Independent Variable : Attitude	
Standardized Coefficients (Beta)	0.80***
R ²	0.64
Adjusted R ²	0.64
R ² Change	0.64
F Value	301.66
F Change	301.66
Sig. F Change	0.00

H4: There is a positive relationship between the variable of the Subjective Norm and user's Intention to Use ISS Portal.

This hypothesis has also been supported with a Beta value that is equal to .70 and ($p<.001$). Table 5 stated these results.

Table 5. Simple Regression Results between Subjective Norm and User's Intention to Use ISS Portal

Independent Variable : Subjective Norm	
Standardized Coefficients (Beta)	0.70***
R ²	0.49
Adjusted R ²	0.48
R ² Change	0.9
F Value	158.96
F Change	158.96
Sig. F Change	0.00



H5: There is a positive relationship between the variable of Perceived Usefulness, Perceived Ease of Use, Attitude, Subjective Norm and user's Intention to Use the ISS Portal.

Table 6. The result of the Regression Analysis for H5

Independent Variable	Standardized Coefficients (Beta)
Perceived Usefulness	0.00
perceived ease of use	0.32***
Attribute	0.37***
Subjective Norm	0.26***
R ²	0.72
Adjusted R ²	0.72
R ² Change	0.72
F Value	107.87
F Change	107.87
Sig. F Change	0.00

This hypothesis has also been supported. The results shows that there is a positive relationship between (Perceived Ease of Use, Attitude, and Subjective Norm) and the user's Intention to Use the ISS Portal. Table 6 stated that there is a positive relationship between Perceived Ease of Use and user's Intention to Use ISS portal ($\beta = .32$, $p < .001$). There is also a positive relationship between Attitude and user's Intention to Use ISS portal ($\beta = .37$, $p < .001$). It has also been noted that the variable of Subjective Norm shows the weakest impact on User's Intention ($\beta = .26$, $p < .001$). Moreover, the variable of Perceived Ease of Use (H2) has found to have no significance with respect to the user's Intention to ISS portal. In addition, from the standard beta value, the researchers has noted that the best predictor of users' Intention to Use is Attitude when beta value is equal to (.37). This result greatly contributes to users' Intention to Use ISS portal. Accordingly, the variable Attitude has proved to be a good predictor for users' Intention to ISS portal.

7. DISCUSSION

Correlation analysis for the results of this study showed that there is strong relationship between independent variables and the dependent variable for the research model. So the research questions (1-5) for this study are answered. For the question 6 "What are the factors that could be

applied in the design of Iraq School Services Portal?" the regression analysis answered it, when the results shown that the three factors (Ease of Use, Attitude and Subjective Norm) have a positive significant impact with the factor (intention to use). So these factors could be applied in the design of ISS portal. In this point it can say that the research questions are answered and the research objectives are met.

As referred to the regression analysis, it is found that Ease of Use, Attitude and Subjective Norm are positively linked with the user intention to use the ISS portal. Therefore, at this juncture, the researchers will focus on these factors for the enhancement of the portal. [7] has pointed out that as the application is easy, the better it is to be received by user. In the context of the ISS portal, the company is determined on manipulating the element of the site and hassle-free services. For example, it will emphasize on enabling the parents to have the freedom to access their children's pages easily by placing the login box on the portal's main entry. The login link is also provided in every page of the schools, so the effort to access the student page is little. Referring to [24] the participants have regarded complex sites to be low in attitudes, which in effect, adversely impacts the commercial aspect, the company, and the site, and also the purchase intention. It is apparent that visual complexity can influence the viewer's attitude towards the company, advertisement and Web site, and whether they have the urge to buy an item sold by the company. To provide more comfortable environment to the visitors of the ISS portal, it is essential to come up with the second version of the portal by the site map to provide the visitor easier access to get to the part of the portal that they require in no time and without much difficulties.

As Attitude affects users' behavioral intention, this has somewhat left a mark on their real behavior too. To form a positive attitude surrounding the portal usage, it is perhaps a good idea to place focus on his/her recommendations and views that can lead to further improvement of the portal. This may materialize if the user comments are placed in the comments section

8. CONCLUSION

This study aims at investigating the impact of perceived usefulness, perceived ease of use, attitude, and subjective norm on the intention to use Iraq schools web portals. The findings indicated that that perceived ease of use, attitude, and



subjective norm have positive influence on user's intention to use. It is demonstrated that attitude has the highest effect on the user's intention to use the portal; while by contrast, subjective norm's impact is seen to be the lowest. However, it is worth mentioning that perceived usefulness contains no significance over the intention of the user to use the portal. these results have been able to show that the researchers manages to answer the research questions that are included in section four and finds out that they have fulfilled the research objective.

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