

Investigation of Factors Influencing Students' Intentions to Use the Internet: Jordanian Universities Context

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ABSTRACT

The increasing use of information technology (IT) applications within universities context increases the importance of exploring cognitive and psychological factors that might influence successful introduction and usage of IT. Consideration of these factors including students' intention to use IT is receiving a huge interest in recent literature to avoid what so called the technological disenfranchisement. Accordingly, the present study investigates certain attitudinal factors that may influence the students' (beneficiary) intentions to use the Internet. The factors investigated in this study include perceived ease of use, perceived usefulness, trust, self-efficacy, and privacy. Accordingly, this study is an attempt to framework these factors within the context of Jordanian universities as an example from a developing countries context where the scarce of the available literature is a major concern. The findings of this study emphasis the importance of perceived usefulness, user's self-efficacy and privacy as determinants for students' intentions to use the Internet. Other factors including perceived ease of use and trust were excluded from the proposed framework due to their none significant effect on students' intentions to use the Internet.

I. Introduction

The dissemination of the Internet applications influences social, economic, political and educational aspects of people all over the world. It has become obvious that neglecting of such influence will cause what so called a digital divide. The differences between people concerning, not only the level of awareness of the Internet but also its various applications, will emerge as criteria for development and modernization.

In spite of this, a review of the available literature regarding the Internet acceptance and usage within the educational setting revealed that most of the current literature concerning the Internet acceptance and usage in the educational sector is focused on developed countries context (Cheung & Huang, 2005; Reisslein et al., 2005; Lee et al., 2005; Matanda et al., 2004; Tsai et al., 2001; Schumacher & Martin, 2001). Therefore, there is a need to investigate and model the level of acceptance of the

Internet within the educational setting of developing countries. The emerging trend towards introduction of IT applications including the Internet calls researchers of these countries to address the important factors that should be considered to achieve strategic and successful implementation of such applications. Towards investigation of these factors, a huge debate is going on and a great amount of research is being conducted in order to explore both technical and more recently socio-cultural aspects that may lead to technological disenfranchisement (Matanda et al., 2004; Schumacher & Martin, 2001). Investigation of major constraints that force successful dissemination of the Internet use has become a major issue for concern especially within the context of developing economies (Cheung & Huang, 2005; Matanda et al., 2004). As an example of this context, this paper will explore the Jordanian universities context.

In spite of the governmental initiatives in Jordan regarding to increase the use of IT applications within educational context, the Internet World Statistics* shows that the Internet penetration rates for Jordan is still very low (600,000 users as of Sept/05, 11.4% penetration rate), which provides an indication regarding low level of awareness and concern of the Internet uses. The current study tries to investigate the reasons behind the low level of the Internet use in Jordan especially among universities students. In particular, this study will focus on cognitive and psychological more than technical factors as an attempt to develop a model or framework that identify and address the importance of certain factors including perceived ease of use, perceived usefulness, trust, self-efficacy and privacy. Then the main objective of this study is to test the

hypothesized model and to propose a model that has additional factors to the original Technology Acceptance Model (TAM) developed by Davis (1989).

The theoretical foundation is discussed in the following section followed by description of the methodological approach and data collection procedures. Analysis of data is made by using aspects of SPSS including factor analysis, descriptive analysis, correlation analysis and regression. Findings are then discussed in the light of the available studies and recommendations for strategy makers and future research are provided in the final section.

II. Theoretical Foundation

The theoretical foundation of this research paper is based on the current models of IT acceptance and considers differences between attitudes towards computers and the Internet due to the nature of the Internet applications (Tsai et al., 2001). Different versions of Technology Acceptance Model (TAM) in addition to recent publications concerning intentions to use the Internet technologies are used to formulate and underpin the development of an appropriate model that can explain variances concerning the intentions of university level students' towards the Internet.

There are a number of studies concerning the utilization of the Internet in educational settings among students (Songan & Noor, 1999; Applebee et al., 2000; Tsai et al., 2001; Schumacher & Martin, 2001; Seyal et al., 2002; Matanda et al., 2004; Cheung & Huang, 2005; Reisslein et al., 2005; Lee et al., 2005). Applebee et al. (2000) in their investigation of the academic use of the

*<http://www.itu.internetworldstats.com/list2.htm>

Internet in Australian universities revealed that academic use of the Internet is a given fact and that university administrators must take the continued provision of this into consideration. The use of the Internet by academics, as they argue, can enhance their research, publication, professional contributions and communication with colleagues and students, locally and internationally, while also keeping in touch with administrative processes. One can argue that the same benefits can be achieved for students who are the primary stakeholder in the educational system.

In addition, Cheung & Huang (2005) in their investigation of students' attitudes towards the Internet provide some justification for university investment in the Internet technology. These antecedents include organizational factors, personal factors, individual perceptions and attitudes towards the Internet use. In addition, their exploratory study identifies some important factors that may enhance the Internet use as an educational purpose. These include providing students with the necessary resources and facilities; developing more interesting and user-friendly software interfaces that can support group work activities; providing functions more suited to university study as part of their software packages and services; and enhancing their skills or decreasing the perceived complexity of the Internet use. According to Tsai et al. (2001) citizen's attitudes toward using and learning the Internet may determine the educational and economical development of the twenty first century. Accordingly, students' intentions to use the Internet may influence not only the delivery of education but also the students' future involvement in the Internet-related careers or activities.

However, Seyal et al. (2002) argues that the use of the Internet in academic settings in general is still a neglected area. In this regards, they argue that successful use of the Internet is largely dependent upon the user's behavior, which, in turn, affects their attitudes where users' adverse attitude can inhibit use.

Various attempts have been made to cover this gap; Songan & Noor (1999) investigated the Internet utilization among students at an institution of higher learning in Malaysia and found that factors such as relative advantage, compatibility, complexity, importance and interactivity affect the use of the Internet. Schumacher & Martin (2001) also examined changes in computer experiences among incoming college students from 1989/1990 to 1997 and revealed that students of 1997 had more computer experience than earlier students, and gender differences had diminished. More concern towards investigation of behavioral aspects is provided by Tsai et al. (2001) who developed the Internet Attitude Scale of 18 items, with four subscales including perceived usefulness, affection, perceived control, and behavior. Their study revealed that students of different gender and various Internet experiences did not show statistical differences on the perceptions toward the potential usefulness of the Internet subscale. However, male students tended to express more positive feeling lower anxiety, and higher confidence toward using the Internet than female students. Students with more Internet experience showed similar positive attitudes as those with less experience.

Reisslein et al. (2005) conducted a large-scale evaluation study of the attitudes of students towards the Internet technology tools that

is used to deliver distance education. Their study revealed that the trend towards using web-steering technologies has become more widespread and appears poised to replace the delivery of education in general and the current tools for delivering of distance learning in particular. This indicates that the nature of interaction between students and their learning institutions is changing towards technology-oriented mechanism that is geared by recent applications of the Internet technologies. Therefore, the need for more research that investigates the factors that influence successful use of the Internet is an essential element of the future education system.

Lee et al. (2005) investigate students' acceptance of the Internet-based learning medium. Their study involves modification of well-known Davis's technology acceptance model by integrating a motivational perspective into the model. The modified model captured both extrinsic (perceived usefulness and ease of use) and intrinsic (perceived enjoyment) motivators for explaining students' intention to use the Internet as a new learning medium. The study was based on an assumption that emphasis the importance of relationship between students attitudes and intentions towards the Internet on the one hand and the value of the Internet for teaching and learning processes. Their empirical study which involves 544 undergraduate students revealed that both perceived usefulness (extrinsic factor) and perceived enjoyment (intrinsic factors) played a significant role in determining students' attitudes and intentions to use the Internet as a learning medium. They also revealed that although perceived ease of use does not posit a significant direct effect on attitudes towards the Internet, it

can indirectly influence students' attitudes by having significant relationships with both perceived usefulness and perceived enjoyment. However, the factors that have been investigated in their study explained 35% of the attitudes variances which indicates the existence of other important factors that needs to be addressed and investigated which provides a justification and motivation for this study.

Matanda et al. (2004) investigate certain demographic and psychological factors influencing the Internet use including age, attitudes towards computers, gender, education and social isolation as potential predictors of the Internet usage. Their study revealed that Better-educated participants were more likely to use the Internet for communication. Additionally, men, the young, and the socially isolated participants used the Internet more for entertainment. Those with lower computer anxiety used the Internet for information searches. Overall, the results of their study suggest that computer anxiety and education may constrain the use of the Internet applications.

III. Arab Region Context

Research studies conducted by International Telecommunication Union* indicate that the Internet penetration rate in Arab region is less than the half of the World rate (2.2%). Low penetration rate emphasizes the importance of investigating the factors that influence the use of the Internet in Arab region.

Wheeler (2004) emphasizes that empirical data on emerging information societies in the Arab region are a must if we are to more accurately assess technology driven change. In this direction, some Arab researchers (e.g.

*<http://www.itu.int/arabinternet2001/documents/pdf/t14.pdf>

Alsoudi & Adaielah 2005, Alsmadi 2004, Khaddash 2004) explore this important area within the context of Arab countries.

Alsoudi & Adaielah (2005) examines how students use computers during their learning and studies using a sample of undergraduate students studying at the faculty of Humanities and Social Sciences in the University of Jordan and at Princess Rahmah University College in Albalqa University/Jordan during 2003. Their study revealed that about half of the students own their computers, two-thirds use computers, less than 5% use the computer and ICTs in the classroom. The low rate of computer and ICTs in classroom imposes a series concern and a set of actions to be undertaken to increase the rate of computer and ICTs use.

Alsmadi (2004), in his investigation of possible factors that influence consumers' attitudes towards online shopping behavior in Irbid, the second largest city in Jordan, revealed that most Jordanian consumers are likely to have enough knowledge and skills in using the computer and dealing with the Internet. A finding that indicates that ease of use factor may not be of concern in the case of Jordanian context.

Khaddash (2004) in his empirical investigation of the importance of using IT in the higher education and in particular among accounting academics in the Jordanian universities revealed that IT has a major role in serving the higher education in general and in accounting education in particular. IT has a positive effect in term of making the education more accessible, enhancing the level of education and reducing the educational cost (Khaddash, 2004).

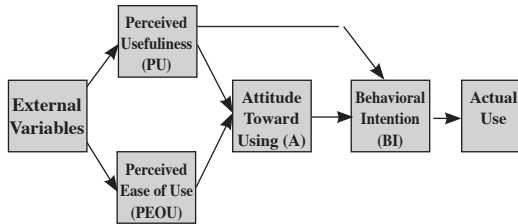
Al-Khalidi & Wallace (1999) investigate the relationships between end-users' attitudes and PC utilization among knowledge workers in Saudi Arabia. They conclude that PC utilization is determined by individual attitudes, personal characteristics such as PC experience, and facilitating conditions such as PC access and social factors. They also compare these results with similar study conducted in Canada and revealed that as a result of some cultural differences some differences exist.

However, there is still much to be done in order to facilitate and clearly understand the different aspects that may encourage or discourage the use of the Internet. As the scarcity of research is more demonstrated within the context of developing societies, this empirical study will be conducted in Jordanian context as an example from developing countries in general and middle east countries in particular. This study is expected to have useful implications within this context.

IV. Research Model and Hypotheses

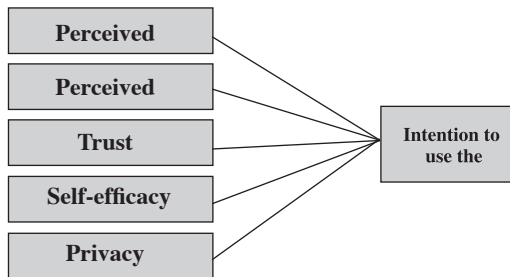
An extension of well-known TAM (figure 1) is suggested and evaluated in this study. This involves identification of five dimensions including perceived ease of use, perceived usefulness, trust, self-efficacy and privacy. Relationships between these dimensions and students' intentions to use the Internet is investigated as an attempt to provide a relationship model that can enhance decision makers as well as students to identify their potential focus as well as their current deficiencies.

Figure 1
Technology Acceptance Model



Towards a systematic investigation of the above dimensions and their impact on students' intentions to use the Internet the following research model was proposed (see figure 2).

Figure 2
Proposed Research Model



This model is an attempt to investigate cognitive variables (perceived ease of use and perceived usefulness) as well as psychological variables (trust, self-efficacy and privacy). The selection of these dimensions is based on consideration of the available literature and the researchers' belief concerning the importance of psychological factors within the Jordanian context. To test the above model and its reliability and ability to explain the variance of students' intentions to use the Internet, the following hypotheses were suggested:

- H1: Perceived ease of use (PEU) has a significant direct effect on students' intentions to use the Internet.
- H2: Perceived usefulness (PU) has a significant direct effect on students' intentions to use the Internet.
- H3: Trust (TRU) has a significant direct effect on students' intentions to use the Internet.
- H4: Self-efficacy (SE) has a significant direct effect on students' intentions to use the Internet.
- H5: Privacy (PRI) has a significant direct effect on students' intentions to use the Internet.

The following section describes the methodological approach used to empirically test the above hypotheses.

V. Research Methodology

Using the literature in research methodology area, this research tends to be deductive because it starts from theories and current literature to explain and analyse the reality. The study is conducted to test and modify the current models concerning intentions to use the Internet in order to explain these intentions within a different context. This study is mainly a quantitative study, which is based on the use of a sample survey to explore and investigate the proposed hypotheses. The method involves the application of a standardized questionnaire to enable individuals to be placed on a dimension indicating their intentions towards a set of statements that are designed to measure certain factors. In particular, the research methodology was very similar to that used by earlier studies on TAM to maintain the continuity of the research efforts.

Data Collection Method & Plan

The questionnaire used for data collection consists of two parts (see the Appendix). Part A, consists of demographics variables. Part B of the instrument consists of the attitudinal part, which asks the respondents for 23 statements to measure the following intention domains: perceived ease of use, perceived usefulness adapted from Davis (1989), self-efficacy adapted from Loyd & Loyd (1985), trust and privacy adapted from Cheung & Lee (2001) and Culnan (1999). In addition to the dependent variable (intention

These variables were addressed by using a self-assessment scale where intentions of respondents had been assessed on a five-point differential scale from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was originally prepared in English, and was later translated into Arabic (the native language of respondents) and following Craig and Douglas's (2000) methodology. The translated version of the questionnaire was shown to some specialists for arbitration to assure the face validity and the accuracy of translation.

Table1
Definition of Variables

Variable	Direction of Causality	Label	Description
perceived ease of use	Independent	PEU	Cognitive variable that describes students' perceptions concerning the ease of the Internet use.
perceived usefulness	Independent	PU	Cognitive variable that describes students' perceptions concerning the benefits that can be obtained from using the Internet.
Trust	Independent	TRU	Psychological variable that measures the students' level of the Internet confidence.
self-efficacy	Independent	SEF	Psychological variable that measures the students' self confidence to use or learn about the Internet.
privacy	Independent	PRI	Psychological variable that measures the perceived risk of submitting personal or private information over the Internet
Intention to use the Internet	Dependent	ITU	The degree of intentions of using the Internet for present and future academic use.

to use the Internet) adapted from Davis (1989). The scales for these constructs were adapted from prior studies, many of which have already established their reliability and validity.

Before conducting the study, it was important to understand how the variables were created. Table (1) below describes the operational definition for the variables together with a label to enhance the analytical process and the direction of causality.

Sampling procedures

This study was undertaken via the method of a questionnaire that focused on each of the constructs as described in the previous section. The study involved a sufficient number of participants to provide moderate statistical power for testing the hypotheses. Due to time and cost constraints, a convenience sample of students was selected from six Jordanian universities: three governmental universities (Mutah, Jordan and Yarmouk university), and three private universities (Alzaytoonah, Al-isra and Philadelphia university). Then 600 questionnaires were distributed. The returned questionnaires were carefully examined for completeness. The total number of usable responses resulting from this process was 555 (response rate was 93 %).

Responses were coded based on the questionnaire items. The final data inputs were loaded into a statistical package (SPSS 10.0) which enables performing of an appropriate statistical analysis.

VI. Analysis and Interpretation Instrument Validity and Reliability

In this study, the internal consistency reliability is measured by applying the Cronbach’s alpha test to the individual scales and the overall measure as reported in Table (2). As the alpha values for all the constructs in our study were greater than the guideline of 70% as specified by Nunnally and Bernstein (1993), we concluded that the scales can be applied for the analysis with acceptable reliability.

**Table 2
Cronbach’s Alpha for the Scales**

Variable	No. of Cases	No. of Items	Alpha
Perceived Ease of Use (PEU)	555	5	0.90
Perceived Usefulness (PU)	555	5	0.88
Trust (TRU)	555	3	0.75
Self-Efficacy (SE)	555	4	0.83
Privacy (PRI)	555	3	0.78
Intention To Use (ITU)	555	3	0.84

Principal components analysis was used as an extraction method for confirmatory factor analysis with Varimax rotation. An exploratory factor analysis conducted in this study found a 5-factor structure that accounted for 69.12 % of the total variance. Items intended to measure the same construct demonstrated markedly higher factor loadings (>.50) on a single component as represented in Table (3). The overall factor solution has an excellent loading pattern. All items loaded on their hypothesized factors. Hence, convergent and discriminant validity for all constructs is supported.

Profile of Respondents:

Descriptive analysis was used to present a profile of the respondents. The results shown in table (4) indicate that more than half of the respondents were males. The majority of respondents (91.0) were from bachelor degree; this may be due to the absence of graduate programs at private universities in comparison with governmental universities. The respondents were distributed to some extent between private and governmental universities. About half of the respondents enrolled in human studies and the other half in scientific studies.

Table 3
Factor Analysis for Construct Validity

Measured Items	Factor Loading				
	PEU	PU	TRU	PRI	SE
Learning to use the Internet is easy for me.	.750	.139	.266	.104	.038
I find the Internet to be flexible to interact with.	.827	.135	.229	.014	.083
It is easy for me to become skillful at using the Internet.	.799	.182	.196	.056	.010
I find the Internet easy to use.	.818	.161	.165	.054	.087
My interaction with the Internet is clear and understandable.	.746	.255	.264	.005	.090
Using the Internet would improve my studying performance.	.129	.762	.172	.070	.067
Using the Internet would enable me to accomplish more quickly.	.212	.794	.083	.081	.063
Using the Internet in my studying would increase my productivity.	.122	.806	.138	.034	.144
Using the Internet would enhance my effectiveness on studying.	.104	.819	.204	.054	.105
I would find the Internet useful in my studying.	.273	.723	.130	-.037	.164
The Internet is secure environment to conduct business transactions.	.013	.110	.005	.271	.722
The Internet is reliable to conduct business transactions.	.077	.145	.097	.118	.854
The Internet websites are reliable places to exchange information.	.117	.148	.140	.046	.777
I feel confident using the Internet/World-wide web.	.275	.164	.691	.160	.149
I feel confident using email.	.252	.139	.820	-.012	.070
I feel confident using browsers (Internet Explorer, Netscape).	.223	.219	.731	.037	.037
I feel confident using search engines (i.e. Yahoo, Excite ...).	.274	.170	.738	.010	.064
I'm not concerned about finding my information by others.	.061	-.021	.140	.795	.070
I'm not concerned what others do with my information on the net.	.007	.069	.016	.877	.133
I'm not concerned how others could use my information on the net.	.091	.102	-.026	.779	.188
% of Explained Variance	34.008	12.313	9.990	6.613	6.203

Total variance explained = 69.12

Extraction Method: Principal Component Analysis.
Normalization. Rotation converged in 6 iterations.

Rotation Method: Varimax with Kaiser

Table 4
Profile of Respondents

		Frequency	Percent
Gender	Male	306	55.1
	Female	249	44.9
Program	Bachelor	505	91.0
	Graduate	50	9.0
University	Governmental	227	40.9
	Private	328	59.1
Faculty	Human studies	233	42.0
	Scientific studies	322	58.0

Analysis of Data

We examined our model using multiple regression analysis, which allows researchers to analyze a set of independent and dependent variables. Multicollinearity was not a serious concern since the variance inflation factor (VIF), as showed in table 5, for all independent variables was below the threshold of 10 (Neter & Kutner, 1990), and

are uncorrelated (Anderson et al., 1990). Furthermore, the normal probability plots of the standardized residuals showed no violation of normality.

Table 5
Model Summary

Model	R	R. Square	Adjusted	Std. Error of the Estimate	Durbin-Wasson
1	.587	.344	.339	.7234	1.994

a. Predictors: (Constant), PRIVACY, PU, TRUST, PEU, SE
b. Dependent Variable: ITU

As presented in Table (6), three of the causal relationships between the constructs postulated by our model are well supported.

From the results, perceived usefulness has significant direct effect on student's intention to use the Internet in their studying (t = 10.936; sig = 0.000). Self-efficacy (SE) was found to play an important role in

Table 6
Model Testing ^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.784	.210		3.741	.000		
	PEU	3.205E-02	.049	.029	.658	.511	.608	1.646
	PU	.496	.045	.449	10.936	.000	.709	1.411
	TRUST	5.593E-02	.040	.054	1.407	.160	.806	1.240
	SE	.155	.048	.143	3.221	.001	.606	1.651
	PRIVACY	8.750E-02	.035	.092	2.504	.013	.892	1.121

a. Dependent Variable: ITU

a tolerance value above .60, hence there is no evidence of multicollinearity among the independent variables (Hair et al. 1995). Also, the Durbin-Watson test statistic, as showed in table 5, was approximately 2, indicating that the adjacent residuals

shaping student's intentions toward using the Internet. It has a significant direct effect on student's intention to use the Internet (t = 3.221; sig = 0.001). The students with high Internet self-efficacy will use the Internet more than others. Privacy has significant

direct effects on student’s intention to use the Internet in their studying ($t = 2.504$; $sig = 0.013$). Perceived ease of use has a non significant direct effect ($t = 0.658$; $sig = 0.511$) on the intention to use the Internet. Furthermore, the results suggest that trust has a non significant direct effect on student’s intention to use the Internet in their studying ($t = 1.407$; $sig = 0.160$). Table 7 summarizes the results of hypotheses testing.

Table 7
Results of hypotheses testing

Hypothesis	Supported / not supported
H1: Perceived ease of the Internet use has a significant direct effect on the Internet use.	Not supported
H2: Perceived usefulness of the Internet has a significant direct effect on students’ intentions to use the Internet.	Supported
H3: Trust has a significant direct effect on students’ intentions to use the Internet.	Not supported
H4: User’s self-efficacy has a significant direct effect on students’ intentions to use the Internet.	Supported
H5: Privacy has a significant direct effect on students’ intentions to use the Internet.	Supported

VII. Discussion and interpretation

The main idea of this research was to validate some well-known Internet acceptance models within a different context with the aim of deriving an appropriate model to explain key variables that might determine intentions of students to use the Internet

within the Jordanian context. We believe that this aim is achieved where three important variables have been determined including perceived usefulness (cognitive variable), self-efficacy and privacy (psychological variables). Interpretation of these findings is enhanced through an extensive review of related literature in addition to the researchers understanding and experience of the research context.

The context of the study can be considered as an important deterrent of the effect of students’ perceived usefulness of the Internet on their intentions to use the Internet. The study was conducted in universities context where participants are expected to have knowledge and understanding on the Internet which influences and encourage their intentions to use the Internet. In addition, observation of the research context revealed the great interest within the participants’ universities concerning application of the Internet technology for educational purposes which can increase students’ awareness of the usefulness of the Internet and encourage formulation of positive intentions towards the use of the Internet. According to Teo et al. (1999) extrinsic motivation comes primarily from perceived usefulness. Extrinsic motivation arises when the technology is perceived to be useful in achieving valued outcomes which, within a university context might include browsing and gathering of information, communication with colleagues and teachers, enrolment and researching.

Davis (1993) in his technology acceptance model also provides a support for the above interpretation when he emphasized that rationality in the human behavior can reduce the importance of ease of use and increases the importance of perceived usefulness.

Accordingly, the level of proficiency enables our participants to realize and evaluate the usefulness of the Internet.

As Davis (1989) argued, ease-of-use may act on behavioral intentions indirectly through usefulness which can explain why perceived ease of the Internet use has no significant direct effect on intention to use the Internet. In addition to the elementary knowledge students had from school, they are required to accomplish 6 credit hours in computer skills during the first academic year, in addition to 3 credit hours as a computer applications in these fields.

In relation to trust which was proposed in this research as psychological variable that measures the students' level of the Internet confidence, the findings of this research revealed that trust has no significant direct effect on students' intentions to use the Internet. The nature of the Internet applications performed by students may explain this finding. These applications including information gathering, researching and communicating with colleagues and teachers do not involve exchanging of secretive information or financial transactions. Trust-related issues as emphasized by Palmer et al. (2000) create uncertainty around consumer online transactions in business to business transactions or e-commerce environment.

User's self-efficacy variable that measures the students' self confidence to use or learn about the Internet was found to have a significant direct effect on students' intentions to use the Internet. Students' self-confidence can be regarded as an indication of simplicity or complexity of the Internet use and the level

of largely technological and particularly the Internet knowledge. Therefore, it can be considered as a reflection of the ease of use finding discussed above. This means that SEF increases as the students' Internet knowledge increases which seems to be a common aspect among the participants.

Privacy which measures the perceived risk of submitting personal or private information over the Internet was found to have a significant direct effect on students' intentions to use the Internet. This can be considered as an indication of the importance of online privacy where students data and information should be protected against access by unauthorized users.

VIII. Implications and Recommendations

The findings of this study are relevant to administrators and policy-makers in Jordanian universities as well as to academics and researchers. Practical implications for administrators and policy makers include enhancing of strategic and planning activities and determining of the Internet facilities at university levels. The acceleration of technology pressure in higher education institutions enforce universities to develop programs with effective integration and utilization of information technology and particularly the Internet applications and to stimulate academics to explore opportunities posed by the Internet applications much more or these institutions will be behind (Potgieter & Herselman, 2003).

Universities should provide students with more accountability, connectivity, and

responsibility in addition to accessibility (Richardson, 2000) to transform from traditional learning environment into more flexible mechanisms including online learning, e-learning and virtual learning (Fung, 2001). This can improve students' perceptions concerning the usefulness of the Internet and build up their self- confidence level. In addition, privacy of students' information should also be protected. Access to student's files should give to authorized people only which may encourage students intentions to be part of high-tech and the Internet-based learning environment.

Based upon the results, a set of academic implications can also be identified. This

research is best seen as a step towards building a usable conceptual framework, concerning the way students think about the Internet. The total variance explained by the variables revealed in this study (= 69.12) provide a valid support concerning the importance of our research findings. However, other variables should be investigated which may include, demographic variables, economic variables, and some socio-cultural variables. These variables, and others, need to be addressed in forthcoming research. This study may provide guidelines for future research within developing countries context where the scarcity of similar researches is a major

REFERENCES

- Al-Khaldi, M. & Wallace, O. (1999) The Influence of Attitudes on Personal Computer Utilization Among Knowledge Workers: The Case Of Saudi Arabia, *Journal Of Information & Management*; 36; Pp. 185-204.
- Alsmadi S. (2004) Consumers' Attitudes towards Online Shopping in Jordan: Opportunities and Challenges, *Dirasat Journal (Administrative sciences)*, Vol. 31 No 1, pp. 137-145.
- Alsoudi A & Adaeleh A. (2005) University Students' Use, Knowledge and Attitudes towards Computers and ICTs: Comparative Study between Two Jordanian Universities: A Sociological-Educational Approach, *Dirasat Journal (Social and Human Sciences)*, Vol. 32 No 2, pp. 408 – 422.
- Anderson D.R., Sweeney D.J., & Williams, T.W. (1990) *Statistics for Business and Economics*. 4th ed., West Publishing Company.
- Applebee A, Clayton P, Pascoe C & Bruce H. (2000) Australian academic use of the Internet: implications for university administrators, *Internet Research: Electronic Networking Applications and Policy*, Vol. 10 No. 2. pp. 141-149.
- Cheung W & Huang W. (2005) Proposing a framework to assess Internet usage in university education: an empirical investigation from a student's perspective, *British Journal of Educational Technology*, Vol. 36 No. 2. pp 237–253.
- Cheung, C. & Lee, M. 2001, Trust in Internet Shopping: Instrument Development and Validation Through Classical and Modern Approaches, *Journal of Global Information Management*, Vol. 9, No. 23.
- Craig, C.S. & Douglas, S.P. (2000), *International Marketing Research*, 2nd ed., John Wiley & Sons, New York, NY.
- Culnan, M. & Armstrong, P. 1999, "Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation", *Organization Science*, Vol. 10, No. 1, p. 104.
- Davis F. (1989) Perceived Usefulness, Perceived Ease of Use, and User Acceptance Of Information Technology; *MIS Quarterly*, Vol. 13 No. 3, pp. 319-340.
- Davis, F. (1993) User Acceptance Of Information Technology: System Characteristics, User Perceptions And Behavioral Impacts, *International Journal of Man-Machine Studies*, Vol. 38. pp. 475-487.
- Fung A. (2001) Using ICT as a Strategic Tool in Education, Plenary-Panel Session IV, 1st SEAMEO Education Congress, 28 March, Hong Kong Baptist University.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995) *Multivariate Data Analysis*, Simon and Schuster, New York.
- Khaddash H. (2004) Importance of Using IT in Higher Education and Accounting Education in Particular, *Dirasat Journal (Administrative sciences)*, Vol. 31 No 2, pp. 298-312.
- Lee M, Cheung C & Chen Z. (2005) Acceptance of Internet-based learning medium: the role of extrinsic and intrinsic motivation, *Information & Management*, Vol. 42. pp. 1095-1104.
- Loyd, B.H. & Loyd, D.E. (1985) The reliability and validity of instruments for the assessment of computer attitudes. *Educational and Psychological Measurement*, Vol. 45, pp. 903–908.
- Matanda M, Jenvey V & Phillips J. (2004) Internet Use in Adulthood: Loneliness, Computer Anxiety and Education, *Behaviour Change*, Vol. 21 No. 2. pp. 103–114

- Neter, J. & Kutner, L. (1990) *Applied Linear Statistical Models*, Irwin, Homewood, IL.
- Nunnally, J. C. & Bernstein, I. H. (1993) *Psychometric Theory*, 3rd edition. New York: McGraw-Hill.
- Palmer J; Bailey J; & Faraj S (2000), “The Role of Intermediaries in the Development of Trust on the WWW: The Use and Prominence of Trusted Third Parties and Privacy Statements,” *Journal of Computer-Mediated Communication*, Vol. 5, No. 3.
- Potgieter B & Herselman M. (2003) *using ICT in Tertiary Education – Do We Dare to Compare?* Proceedings of the 16th Annual NACCQ, Palmerston North New Zealand, July, pp 389-392.
- Reisslein J, Seeling B & Reisslein M. (2005) *Video In Distance Education: ITFS Vs. Web-Streaming: Evaluation of Student Attitudes, Internet And Higher Education*, Vol. 8. pp. 25–44.
- Richardson J. (2000) *ICT Implementation in Education, An analysis of implementation strategies in Australia, Canada, Finland and Israel*, Final report, December, Luxembourg.
- Schumacher, P. & Martin J. (2001) *Gender, Internet and computer attitudes and Experiences*, *Computers in Human Behavior*, Vol 17. pp 95-110
- Seyal, A. Abd., Rahman M & Rahim M. (2002) *Determinants Of Academic Use Of The Internet: A Structural Equation Model*, *Behaviour & Information Technology*, Vol. 21, No. 1. pp. 71-86.
- Songan, P., & Fauzia Mohd. Noor. (1999) *Predictors of Internet utilization among students in an institution of higher learning in Malaysia*. In *Proceedings of Conference on Information Technology in Asia: Information Equality for the Next Millennium* (pp. 38-50). Kuching, Sarawak, Malaysia.
- Teo S, V.K.G Lim V & Lai R (1999) *Intrinsic and extrinsic motivation in Internet usage*, *Omega International Journal of Management Studies*, Vol. 27, pp. 25-37.
- Tsai C, Lin S & Tsai M. (2001) *Developing an Internet Attitude Scale for high school Students*, *Computers & Education*, Vol. 37. pp 41–51.
- Wheeler D. (2004) *The Internet in the Arab World: Digital Divides and Cultural Connections*, Lecture presented in Royal Institute for Inter-Faith Studies.

A Short Bio of Dr. Mohammad Suleiman Awwad

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Appendix A: classification of statements according to their measures.

Part A: demographics variables.

Gender:	1. Male	2. Female
Program:	1. Bachelor	2. Graduate
University:	1. Governmental	2. Private
Faculty:	1. Human studies	2. Scientific studies

Part B: attitudinal part.

Privacy Concerns

1. I am concerned that a person can find private information about me on the Internet
2. I am concerned about submitting information on the Internet, because of what others might do with it.
3. I am concerned about submitting information on the Internet, because it could be used in a way I did not foresee.

Trust (the Internet Confidence)

1. The Internet websites are secure environments in which to conduct transactions.
2. The Internet websites are reliable environments in which to conduct transactions.
3. The Internet websites are reliable places to exchange information with others.

Self-efficacy:

1. I feel confident using the Internet/World-wide web.
2. I feel confident using email.
3. I feel confident using WWW browsers (Internet Explorer, Netscape).
4. I feel confident using search engines (i.e. Yahoo, Excite, and Lycos).

Perceived Ease of Use

1. Learning to use the Internet is easy for me.
2. I find the Internet to be flexible to interact with.
3. It is easy for me to become skillful at using the Internet
4. I find the Internet easy to use.
5. My interaction with the Internet is clear and understandable.

Perceived Usefulness

1. Using the Internet would improve my studying performance.
2. Using the Internet in my studying would enable me to accomplish more quickly.
3. Using the Internet in my studying would increase my productivity.
4. Using the Internet would enhance my effectiveness in studying.
5. I would find the Internet useful in my studying.

Intention to use the Internet

1. If the opportunity allowed for me, I will use the Internet in the studying and preparing for the lectures
2. I expect to use the Internet in the studying and preparing for the lectures
3. It is possible to use the Internet in the close future for the studying and preparing for the lectures