*M. Musa Kaleem**
*Arshad Zaheer***

Measurement of Online User Information Literacy Satisfaction: An Empirical Study

ABSTRACT

Digital world of 21st century is undergoing enormous world over transformation into a connected mesh of information literate members having high information processing capacity. The effective utilization of digital information resources is becoming a reason of competitive advantage for organizations. E-Government initiatives are taken by governments around the world to enhance user information management capacity. This new scenario, the user satisfaction constructs needs to be reconsidered due to information being its integral ingredient. In this study, user information literacy satisfaction has been introduced as an emerging construct indicating the satisfaction of an information literate person. A model was developed and tested showing two antecedents of user information literacy satisfaction as perceived portal quality and perceived portal value. The study was carried out on users of information portal (www.hec.gov.pk) of higher education commission, Pakistan. Respondents are research scholars at master level who interact HEC portal frequently. Data was collected through an adapted instrument on a 5-point Likert scale from 260 respondents. The results showed existence of significant and positive causal relationships between predictors and outcome variables. Findings, however, recognize the existence of information literacy satisfaction and requires further investigation and adaption of the construct.

Keywords: Information Literacy, User Information Literacy Satisfaction, E-Government, Perceived Portal Quality, Perceived Portal Value.

* Assistant Professor, Department of Business Administration, Federal Urdu University of Arts, Science & Technology, Islamabad.

** Associate Professor, Army Public College of Management & Sciences, Rawalpindi.

Introduction

Information has become a leading strategic resource in 21st century (Johnston & Webber, 2003). Rapidly changing information and communication technology is enabling worldwide communication more efficient day by day (Farmer & Henri, 2008). Modern information society is transforming all institutions into a global information resource centre of inter connected opportunities where societies are now global communities creating and sharing knowledge (Rafiq & Ameen, 2012). Governments and business have adopted online banking system where they are carrying out online digital transactions on a regular basis (Nemat, 2011). In Pakistan electronic government initiative was taken in 2002 with the aim to provide a better governance with a low cost, transparent and efficient services to citizen (EGD, 2005). With this, government organizations were transformed into digital entities and started handling inefficiencies, improving transparency and other quality related issues in its operations thus building citizen trust (Bertot, Jaeger & Grimes, 2010). User appraisal of these online systems is becoming essential (Stowers, 2004; Wang, Bretschneider & Gant, 2005; Horan & Abhichandani, 2006). User Satisfaction is an important and highly adopted measure for measuring user acceptability of an online system. It is highly desired that the measure be tested and employed in research studies to understand user online satisfaction (Xiao & Dasgupta, 2002). Higher education sector of Pakistan is working with a mandate to enhance education and research standards in the country (Rafiq & Ameen, 2012). However, a small scale research efforts were made to study the higher education sector. This paper is focusing on user information literacy satisfaction as an outcome construct and studied on HEC information portal for its potential to satisfy information literacy needs of users. Findings are important to understand online user perspective in order to design better e-government services.

Literature Review

Now a days, everyone is experiencing a rapid transformation in economic, social, cultural and political domains due to a progression of ICT. This global village of information society provides opportunities to communicate in a real time round the globe (Rafiq & Ameen, 2012). e-Initiatives in the form of e-health, e-learning, e-democracy, e-government, is taking place and organizations are shifting from analogue machines to electronic government (United Nations, 2008). Almost all the countries in Asia has shown phenomenal growth in last two decades due to IT-friendly policies and initiative by governments (Ameen & Gorman, 2009). IT sector in these countries is showing unmatched progress and adaptation of hand held devices, mobile phones, personal computers, networks and wireless technologies (Rafiq & Ameen, 2012).

Pakistan has shown a significant development in almost all indicators of IT sectors in the recent past and its progress is still continued. Pakistan is among top five nations with high internet deployment and in South Asian Region (UNCTAD, 2009). The immense deployment of ICT is also found in private and public lives of individuals in Pakistan. Government of Pakistan is fully supporting IT sector with its flexible policies and incentives in order to attract foreign investors. The IT Policy in August 2000 was a first step towards digitization in Pakistan. Later in October 2002, an essential step was taken by setting up the Electronic Government Directorate (EGD). Electronic government initiatives by government of Pakistan were stated to cater work efficiencies and reducing citizen dissatisfaction and complaints (Shafique & Mahmood, 2008). Government departments are public offices where citizen access and exchange of information for their desired purpose. These government departments has brought cost effective ICT enabled e-Government information systems in use to bring efficiencies in their work processes (Bertot, Jaeger & Grimes, 2010). Electronic government, refers to the setup of ICT meant to deliver government information services to its users (West, 2004). E-government provides an efficient alternative to government authorities and public at large to access and utilize information with speed, time and place flexibility (Muir & Oppenheim, 2002; Evans & Yen, 2006). By effective use of ICT and e-government adoption significant improvements can be achieved in the developing countries (Imran & Gregor, 2007).

Higher education sector is one of the top agenda by the Government of Pakistan since 2000 and many reforms were made during this period. The University Grants Commission (UGC) was transformed into Higher Education Commission (HEC) of Pakistan, in September 2002 with broader mandate to regulate and enhance research and education quality in higher education sector (Rafiq & Ameen, 2012). They upgraded existing faculty standard and introduced performance based tenure-track system. They offered scholarships for M.Phils and PHD students in local and foreign universities. HEC funded research, travel grants and conferences for local faculty. One of the key initiatives taken by HEC was implementation of digital library in 2004 with the objective of supporting and promoting research activities in Pakistan. Large number of research scholars and students of higher education are utilizing these online resources. HEC National Digital Library Program (HEC-NDL) provides access of high end e-resources of peer reviewed journals, citations, articles, e-books (Bhatti, Chohan & Asghar, 2014). With the advent of ICT in Pakistan, students are able to compete with international standards in their academics and research (Bhatti, 2012). Besides other services, HEC portal also launched online support for degree attestation and verification.

Information Literacy

In this fast paced infusion of information technology, individuals lives are full of opportunities and choices in their personal and professional affairs. They maintain this status by being a fully knowledgeable and information literate (Shapiro & Hughes, 1996). The present information society is composed of multi-skilled individuals possessing IT literacy as their core competency (Doyle, 1994; Haberle, 2002). 21st century has brought information revolution after a successful era of industrial revolution where acquiring of information literacy contains opportunities for individuals (Rafique, 2014). Literacy is among primary indicators of economic and social development. With the advent of IT revolution, the term literacy has been stretched as information literacy by researchers in order to accommodate the notion with information society (Ameen & Gorman, 2009).

Information literacy is a qualitative descriptive phrase combining literacy and information together. IL refers to individual ability to recognize, locate and use information effectively (American Library Association, 1989; Bruce, 2002; Johnston & Webber, 2003). Information literacy represents individual capability to acquire and use information for effective decision making (Behrens, 1994; Webber & Johnston, 2000; Basili, 2008). IL refers to a learning environment where individuals are involved in satisfying their learning needs by interacting with the information environment for academic empowerment and lifelong learning (Bruce, 2004; Mahmood & Mehmood, 2017). Information literacy is considered as contributing factor towards cultural, social and economic developments needs of present information society (Webber & Johnston, 2000). Digital libraries are now emerging as new paradigm shift from existing paper based libraries. This has completely changed the dynamics of library system (Bekele, 2002; Bhatti, Chohan & Asghar, 2014). This change has positively impact on research, teaching and learning (Dorner, 2004).

A research by Bhatti (2012) emphasized that IL is required to improve quality of higher education and research and is considered as an essential requirement. There exist only a few studies on the topic of information literacy with its practical implications. However, the concept is now gaining attention by researchers and academicians (Ullah & Ameen, 2014; 2015; 2016). The higher education in Pakistan is working towards the development of culture of lifelong learning for creating well informed community of learners with information literacy is essential in expanding the individual competencies (Rafique, 2014).

User Information Literacy Satisfaction

The use and adaptation of the online electronic services are renowned for digital connectivity and customer satisfaction, but their adaptation and acceptability by citizen is important and receiving concern among researchers and developers. Users are expecting effective information service delivery as a means to get satisfaction from these resources (Musso, Weare & Hale, 2000; Stiftung, 2002; Gilber & Balestrini, 2004; West, 2004). The customer satisfaction represents a complex phenomenon about understanding, measuring and fulfilling the needs and expectations of potential customers. This highlights customer orientation and measuring the marketing performance in pursuit of company objectives (Karadeniz, 2015). Customer satisfaction is a customer feeling grounded on the comparison amongst expectations and perceived service performance (Kotler & Armstrong, 2005). Customer satisfaction is the indicator of business performance and boosts repeat purchases, customer loyalty and positive word of mouth (Munusamy, Chelliah & Mun, 2010). Research has shown that satisfied customers promotes company image to five or six other people whereas dissatisfied customers damage it upto ten other people who look for other alternatives (Angelova & Zekiri, 2011). Measuring and evaluating customer satisfaction helps keeping customers loyal, happier and keeping long term relationship for gaining competitive advantage (Angelova & Zekiri, 2011). It also keeps marketer aware about customer pre and post purchase behaviour (Karadeniz, 2015).

In the field of digital marketing, a term customer or user information satisfaction is used. UIS refers to a mix of attributes of a digital product and represents information system effectiveness (Giese & Gote, 2000). UIS is a subjective measure of information system success and shows the extent of belief about potential of IS to fulfil user information requirements. According to Cyert and March (1963) an information system that fulfils user needs reinforces satisfaction otherwise it gives dissatisfaction from a system (Ives, Olson & Baroudi, 1983). Theoretical foundation of satisfaction is based on number of research studies (Herzberg et. al., 1959; Oliver 1980; Churchill and Surprenant, 1982; Bailey & Pearson 1983; Ives et al., 1983; Doll & Torkzadeh, 1988; DeLone & McLean, 1993;2003; Fornell et al., 1996; Spreng et. al. 1996; Athanassopoulos, 2000; Mosahab et al., 2010). These studies have adopted satisfaction as an indicator of IS success. In marketing literature, CS is considered as perceived value of its quality attributes (Hallowell, 1996). Work on information system success is most cited studies in recent IS literature.

Researcher has mostly followed subjective measures to understand user feeling and opinion about use of IS (Doll & Torkzadeh, 1988; Davis, 1989; DeLone & McLean, 1993; 2003; Eighmey, 1997; Loiacono et al,

2000; Aladwani & Palvia, 2002; Barnes & Vidgen, 2005; Palmer, 2002; Stefani & Xenos, 2008; Loiacono, 2000). DeLone and McLean (1993, 2003) . They incorporated system quality, service quality, information quality, user satisfaction and net benefits in their proposed model. The SERVQUAL is a renowned instrument to measure service quality (Parasuraman, Zeithamal & Berry 1988). Online information resources provide a feel of modified environment and potentials (Dziuban, Moskal, Kramer & Thompson, 2013). Studies have pointed out a significant change in response behavior due to vast accessibility and abundance of online information which have put impact on their satisfaction with online information resources (Tustin, 2010).

In order to understand factor effecting user adoption of IS resources; further insight into user information literacy satisfaction is required (Wind et al., 2002). Based upon forgone review it can be stated that user information literacy satisfaction can be conceptualized as a perceived measure that describes the satisfaction level of a user of online information system based on the literacy level that he attained from it.

Perceived Quality and Information System Success

The quality websites are dynamic and user friendly and provide satisfaction to its visitors. A user satisfaction is an indicator of quality (Elangovan, 2013). Quality of an online system is its fitness for the purpose it has been designed. Two major aspects of quality are 'design' and 'customer opinion'. Recent studies have preferred users opinion in judging quality of a web site and success of an information system (Delone & Mclean 2003). Researchers have developed a number of models to explain IS Success. One of the most renowned model is Technology Acceptance Model (TAM) by Davis (1989) based on the theory of planned behaviour and the theory of reasoned action (Ajzen & Fishbein , 1975). TAM has initiated a debate on success of information system from user perspective by incorporating user perceived measures. Another revolutionary contribution was made by DeLone & McLean (1992) on his detailed review of IS success literature published during the period 1981–1987. There were many extensions and refinements based on Davis's (1989) and DeLone & McLean (1992) studies and findings (Seddon & Kiew, 1996; Seddon, 1997; Molla & Licker, 2001; DeLone & McLean, 2003; Zhu & Kraemer, 2005). A study conducted by Borrego et. al. (2007) has highlighted user preference in e-resources. Studies have shown that quality measure as useful indicators of user satisfaction (Loiacono & Taylor, 1999; Perkins & Yuan, 2000; Stafford & Stafford, 2001; Notess, 2004; Byrnes & Rosenthal, 2005; Arif & Kanwal, 2009).

H_1: "A positive and significant relationship exists between PPQ and UILS"

Perceived Value

Recent research studies on satisfaction are largely dominated by TAM, which was cited in large number of research studies (Eighmey, 1997; Loiacono & Taylor, 1999; Stafford & Stafford, 2001; Palmer, 2002; Carter & Belanger, 2004; Reddick, 2004; Kumar, Mukerji, Butt & Persaud, 2007; Stefani & Xenos, 2008). TAM was based on individual behaviour for acceptance of technology. TAM introduced perceived measures to provide insight about user opinion about IS quality and value. TAM included two predictors; Ease of Use (EOU) and Perceived Usefulness (PU). PEOU and PU act as motivators predicting usage intention and satisfaction (Westbrook, 1980; Bhattacherjee, 2001). According to Yoon and Uysal (2005) main use of information technology is seen in communication, search, ecommerce and entertainment. Motivation plays a key role in pushing individual towards use of technology for their desired reasons (Swaminathan, Lepkowska-White & Rao, 1999).

Researchers had shown that job satisfaction is predicted by intrinsic and extrinsic motivating factors (Daft, 2005). Intrinsic motivation refers to happiness and enjoyment received by participating in an activity that results in satisfaction (Deci & Ryan, 1985). Mannan and Naved (2009) showed high internal motivation to use online journals. In the recent research literature, perceived playfulness is used as a measure to represent internal motivation. Moon and Kim (2001) studied motivational theories and utilised perceived playfulness in predicting the adoption of web resources by extending TAM. Hara and Kling (1999) mentioned motivation as a force behind satisfaction (Agarwal & Karahanna, 2000; Moon & Kim, 2001; Ahn, Ryu & Han, 2007). Extrinsic motivation is explained as external reinforcer having instrumental value as a result of an activity such as perceived usefulness and perceived ease of use (Moon & Kim, 2001). These are categorized as external reinforcers such as rewards and incentives that encourage individuals to perform.

H_2: "A positive and significant relationship exists between PPV and UILS"

RESEARCH FRAMEWORK AND METHODOLOGY

The literature review and objectives of the study lead us to develope a theoretical model as shown in Figure-1 (Davis, 1986; Davis, Bagozzi, & Wars, 1989; Moon & Kim, 2001).

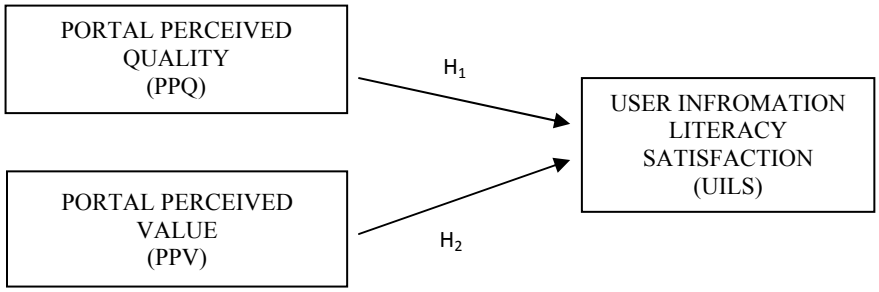

Figure 1: Research Model

This model used perceived measures; PPQ, PPV and UILS. PPQ and PPV predicting UILS. Perceived Portal Quality measures the user opinion about quality features of a HEC web portal system, service and information quality. Perceived Portal Value construct measures perceived opinion about the use of HEC web portal and represents internal and external motivation. User Information Literacy Satisfaction represents the information literacy satisfaction drawn from the use of the HEC web portal.

Study followed positivist stream with deductive approach using quantitative empirical analysis. The survey method using convenience sampling with cross sectional methodology was adopted for data collection through self-administered instrument. The study population includes research scholars studying in various universities in Islamabad. The sample frame was drawn from scholars from International Islamic university (IIU), Federal URDU University (FUUAST) and Quaid-E-Azam University (QAU). Respondents are students doing research studies in business, commerce and computer science department and are regularly interacting with HEC portal to fulfill their academic and career related needs.

Total of 400 questionnaires were distributed with a request for volunteer participation in this survey. 260 filled questionnaires with 65% response rate were selected for final analysis. Initially, a pilot study was carried out on 35 selected participants in order to refine instrument regarding question wordings and language simplification for face and content validity (Churchill, 1979; Parasuraman, Zeithaml & Berry, 1988).

For this research study, existing scales were adapted (Loiacono, 2000; Moon & Kim, 2001; Loiacono et. al., 2002). Webqual scale is recommended to analyze a website quality (Loiacono et al., 2002). This

study also adopted WebQual approach for evaluating the overall user satisfaction. WebQual instrument measures subjective quality through users opinion about usability, service and information quality of the website (Kim & Eom 2002). This study has adapted WebQual4 version of instrument for measuring perceived portal quality HEC Portal (Barnes & Vidgen, 2005; Elangovan, 2013). The scale for measuring PPV was adapted from the scale used by Moon & Kim (2001) which contains twenty seven items for internal and external motivation based on his work on extended TAM. For UILS, a scale developed by Horan & Abhichandani (2006) has been adapted containing four items. The information about gender, course, shift and semester was also collected from each respondent to have demographic profile of respondents. Scale is designed on 5-point Likert type interval scale. Respondents rate the portal (www.hec.gov.pk) using a 5-point Likert type interval scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Calli et al., 2013). EFA and CFA were carried out before undergoing model testing (Vila, Kuster & Aldas, 2005). Statistical packages SPSS Ver 21 and AMOS Ver 21 were used for the analysis.

Exploratory Factor Analysis (EFA)

EFA using principal component factor with varimax rotation was performed to extract underlying structure of 53 items (Karadeniz et al, 2015). Four factors with low cross-loading were removed from the scale resulting 49 items used for further analysis. Results shown Kaiser- Meyer-Olkin (KMO) index for measuring the sampling adequacy for online service was 0.970 (Kaiser, 1974). Bartlett's Test of Sphericity was found significant at $p = 0.001$ and assures the strength of relationships between variables under study. The Cronbach's Alpha statistics indicate high reliability and internal consistency value of 0.973. Cronbach Alpha values for PPQ, PPV and UILS are 0.993, 0.993 and 0.845 respectively (Morgan et. al., 2004; Yang, Watkins & Marsick, 2004). This permits the research to proceed with factor analysis. Correlation matrix indicates existence of linear relationship among measures and establishes discriminant validity as cross-construct correlations among all dissimilar measures is low. Table 1 shows correlation matrix with descriptive statistics.

Table 1
Correlation Matrix and Descriptive Statistics

Variables	N	Mean	S. D	Skewness	Kurtosis	Correlation Matrix		
						PPQ	PPV	UILS
PPQ	260	3.325	1.2936	-.426	-1.428	1	0.079	0.260**
PPV	260	3.563	1.2882	-.632	-1.336	0.079	1	0.320**
UILS	260	3.201	1.1580	-.346	-1.152	0.260**	0.320**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

The results of Total Variance Explained indicate three extractions of factors with eigenvalues >1 higher bearing overall cumulative value of 86.021% . These three factors accounted for 42.298%, 38.079% and 5.644% of the variance respectively as shown in table-2.

Table 2
Total Variance Explained

Component.	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumm. %	Total	% of Variance	Cumm. %	Total	% of Variance	Cumm. %
1	22.008	44.914	44.914	22.008	44.914	44.914	20.726	42.298	42.298
2	17.844	36.417	81.331	17.844	36.417	81.331	18.659	38.079	80.377
3	2.298	4.691	86.021	2.298	4.691	86.021	2.766	5.644	86.021

Extraction Method: Principal Component Analysis.

The rotation component matrix shows the three groups of constructs loaded by factors converged in 4 iterations using the varimax rotation method. Rotated matrix also shows no concern of convergent and discriminant validity as no cross loadings existed and all items are separated and grouped with their respective constructs. Appendix shows rotation matrix and commonalties values. Items having commonalities below 0.40 and loading less than 0.50 were removed (Norusis, 1985; Hair et al., 1998).

Confirmatory Factor Analysis (CFA)

CFA is recommended to confirm EFA results and before doing further analysis (Thompson, 2004). The results of CFA verify the construct validity and composite reliability of scale (Figure-2).

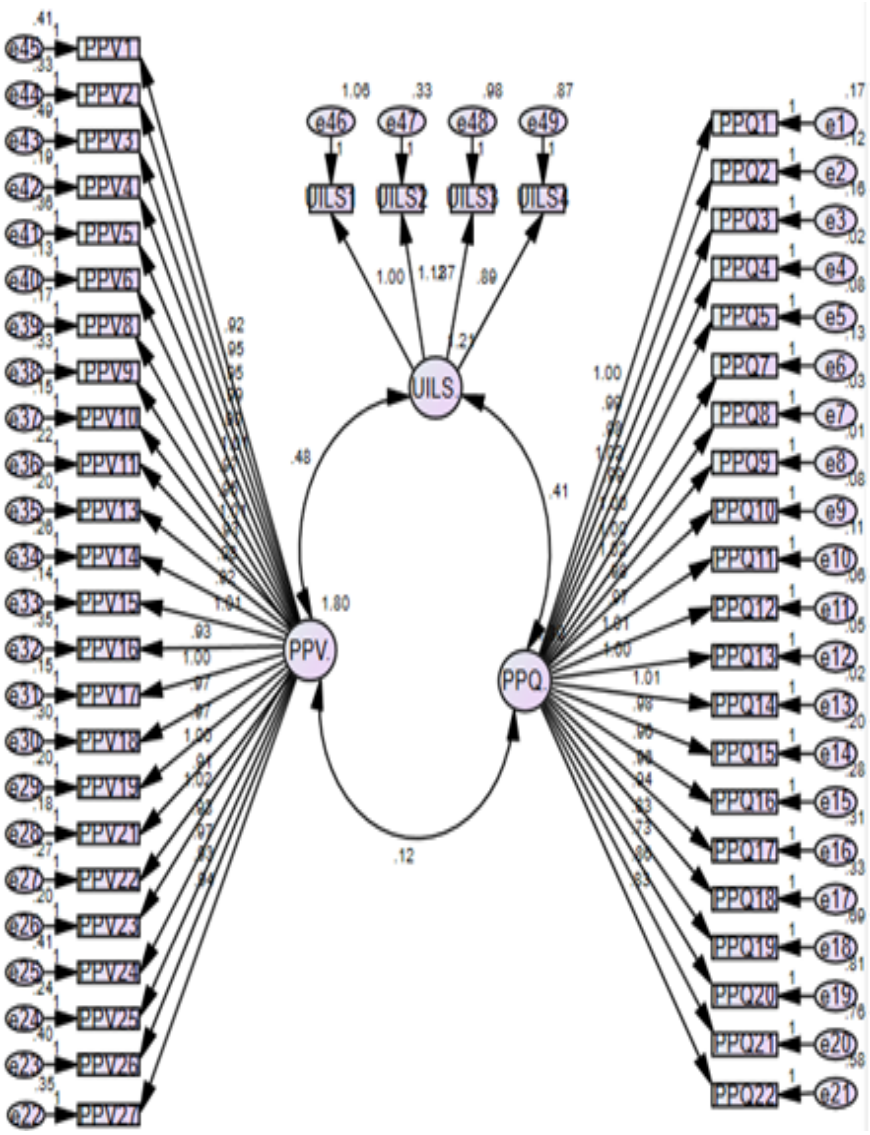

Figure 2: CFA Model Analysis

CFA was carried out using AMOS 21 in order to confirm factorial validity of measures (Vila et al., 2005; Hair et al. 2006). Results showed the good model fit with the data as shown in Table 3.

Table 3
The goodness of fit indices of the measurement model

	CMIN/DF	CFI	TLI	NFI	RMSEA	SRMR
Calculated Values	2.620	0.931	0.928	0.893	0.079	0.0337

Validity analysis was further carried out using Stat Tools Package developed by Gaskin (2016) on AMOS results. Results demonstrated no concern for validity and reliability (Fornell & Larcker, 1981; Zait & Bertea, 2011; Gaskin, 2016). Table-4 shows values for composite reliability, average variance explained for convergent values, maximum shared squared variance (for discriminant validity) and correlation matrix of three measures of PPV, PPQ and UILS.

Table 4
Correlation matrix and Validity Analysis

	CR	AVE	MSV	PPV.	PPQ.	UILS.
PPV.	0.994	0.908	0.077	0.953		
PPQ.	0.988	0.784	0.100	0.067	0.885	
UILS.	0.850	0.589	0.100	0.277	0.316	0.768

Result shows that all model fit indices meet the requirements for SEM analysis (Hair, Black, Babin & Anderson, 2006). A lower value of GFI < 0.9 still meet the requirement suggested by Baumgartner & Homburg (1996) ; Doll, Xia and Torkzadeh (1994) which states that any value greater than 0.8 is acceptable.

Table 5
Demographic characteristics

Variable	Category	Frequency	Percentage
Course	MBA	167	64.2%
	CS	93	35.8%
Shift	Morning	224	86.2%
	Evening	36	13.8%
Gender	Male	209	80.4%
	Female	51	19.6%
Semester	4th	67	25.8%
	5th	73	28.1%
	6th	61	23.5%
	7th	59	22.7%

Hypothesis Testing

Hierarchical multiple regressions (HMR) was carried out to test the model and controlling the confounding effect of demographic variables (Gender, Age, Empstatus, Institstatus, and Designation). Conditions of regressions were tested and were found satisfactory before running the regression.

H_1: A positive causal relationship exists between PPQ and UILS

The causal impact of PPQ on UILS is examined in H_1. In the first model all confounding variables were entered whereas in model-2 both confounding and actual predicting variables was entered.

Table 6

Model Summary

Model	R	R^2	Adj. R^2	S.E. of Estimate	Change Statistics				
					R^2 Chg.	F Chg.	df1	df2	Sig. F Chg.
1	.099[a]	.010	-.010	1.16364	.010	.500	5	254	.776
2	.277[b]	.077	.055	1.12589	.067	18.316	1	253	.000

a. Predictors: (Constant), Desgination, Gender, Institstatus, Empstatus, Age, Dependent Variable: UILS

b. Predictors: (Constant), Desgination, Gender, Institstatus, Empstatus, Age, PPQ

Results have shown that Model-1 is statistically insignificant with $p > 0.05$. The model-2 is statistically significant $F(1, 253) = 18.316$. The multicollinearity check was done by using VIF and tolerance values. Results showed that both values fall within the acceptable range (Fox, 1991; Cohen et. al., 2003). The standardised residual values (-2.207, 2.126) and cook test value (0.027) fall within the recommended range. Anova and coefficient tables are shown in Appendix. The regression revealed the positive causal relationship between PPQ and UILS ($\beta = .260$, $p < .05$). The hypothesis H_1 is accepted.

H_2: A positive causal relationship exists between PPV and UILS

The causal impact of PPV on UILS is examined in H_2. In the first model all confounding variables were entered whereas in model-2 both confounding and actual predicting variables was entered.

Table 7
Model Summary

Model	R	R^2	Adj. R^2	S.E. of Estimate	Change Statistics				
					R^2 Chg.	F Chg.	df1	df2	Sig. F Chg.
1	.099[a]	.010	-.010	1.16364	.010	.500	5	254	.776
2	.332[b]	.110	.089	1.10527	.100	28.535	1	253	.000

a. Predictors: (Constant), Desgination, Gender, Institstatus, Empstatus, Age
b. Predictors: (Constant), Desgination, Gender, Institstatus, Empstatus, Age, PPV
Dependent Variable: UILS

Results have shown that Model-1 is statistically insignificant with $p > 0.05$. The model-2 is statistically significant $F(1, 253) = 28.535$. The multi-collinearity check was done by using VIF and tolerance values. Results showed that both values fall within the acceptable range (Fox, 1991; Cohen et. al., 2003). The standardised residual values (-2.148, 2.235) and cook test value (0.029) fall within the recommended range. Anova and coefficient tables are shown in Appendix. The regression revealed the positive causal relationship between PPV and UILS ($\beta = .318$, $p < .05$). The hypothesis H_2 is accepted.

Discussion

In the contemporary world, it is getting more and more significant to increase the customers' satisfaction. The proposed model of this research is composed of perceived measures in order to access information literacy satisfaction of users of HEC portal. The study is designed to analyse the predicting strength of perceived portal quality (PPQ) and perceived portal value (PPV) for user information literacy satisfaction (UILS). In place of generic measure of satisfaction a new measure has been developed and tested using extended TAM approach as predictors of UILS. In order to test the hypothesis, hierarchical multiple regressions tests were run to measure the impact of predictors in the model on UILS and by controlling the confounding effect of demographic variables. Conditions of regressions were tested and were found satisfactory before running the regression. Result has shown a significant positive causal relationship between predictors and UILS. Results have shown that UILS is influenced by user perception about quality features and delivery mechanism of information portal. The analysis of causal relationships and significance and direction in results has helped in predicting user behaviour for acceptance of online

system. These findings also supported existing research (Yi & Hwang 2003; Ahn et al., 2007; Roca & Gagne 2008).

As per requirement of study objective, the subjects included in this study remained fairly homogeneous in terms of their use, purpose and search preferences. However, generalization can be improved by including users from different walks of life other than research scholar as there is large number of users exist for other uses of portal as well. Similarly, users of android hand held machines such as mobile phones, and tablets could also be included and by including more demographic variables for more generalized results an. also be designed by including more demographic factors. This study collected data from research scholars whereas the model has full potential to be tested on other populations carrying diversified demographics. A quantitative approach has been used in this research. However, qualitative research can also provide more insight about the portal. Cross sectional data collection approach was followed to avoid methodological issues attached with longitudinal study design with multiple administration of instrument.

Conclusion

This research has incorporated new construct to measure user satisfaction from online systems as 'user information literacy satisfaction UILS '. The inclusion of literacy with information is justified due to high level of digital dependency and adoptability in this age of information society. Extended TAM approach was adapted to develop perceived measures predicting UILS. Causal direction were proposed and confirmed between predictors and outcome variables. Results have justified the utilization of new satisfaction measure. Results are important and demands for adapting the scale for UILS in research studies for online information systems. Designers and developers of these online systems can focus on information literacy satisfaction requirements of their systems with respect to users perspective of quality and value.

References

A.M. Aladwania, P.C. Palvia, (2002). Developing and validating an instrument for measuring user-perceived web quality. Information & Management 39 (6), 2002, pp. 467–476.

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: cognitive absorption and beliefs about information technology usage. MIS Quarterly, 24(4), 665-694.

Ahn, T., Ryu, S., & Han, I. (2007). The impact of web quality and playfulness on user acceptance of online retailing. Information & Management, 44 (3), 263–275.

Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. Psychological bulletin, 82(2), 261.

Ameen, K., & Gorman, G. E. (2009). Information and digital literacy: a stumbling block to development? A Pakistan perspective. Library Management, 30(1/2), 99-112.

Ameen, K., & Ullah, M. (2016, October). Information Literacy Instruction: An Overview of Research and Professional Development in Pakistan. In European Conference on Information Literacy (pp. 555-562). Springer, Cham.

American Library Association, (1989). Presidential committee on information literacy, Final report. American Library Association, Chicago, IL, 1989.

Angelova, B., & Zekiri, J. (2011). Measuring customer satisfaction with service quality using American Customer Satisfaction Model (ACSI Model). International Journal of Academic Research in Business and Social Sciences, 1(3), 232-258.

Arif, M. and Kanwal, S. (2009). Acceptance of digital library among female students and effects of limited access of digital library on their performance in research work: a case of International Islamic University. The International Information & Library Review, Vol.41 No.3, pp.122-8.

Athanassopoulos, Antreas D. (2000). Customer satisfaction cues to support market segmentation and explain switching behaviour. Journal of Business Research, 47: 191–207.

Bailey, J. E., and Pearson S. W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. Management Science (29:5) 1983, pp. 530-545.

Barnes, S., & Vidgen, R.T. (2005). Data Triangulation in action: using comment analysis to refine web quality metrics. In: Proceedings of the 13 th European Conference on Information Systems, Regensburg, Germany, May 26–28.

Basili, Carla (2008). Theorems of Information Literacy. A mathematical-like approach to the discourse of Information Literacy. In: Series III: ePublications of the Institute ILS of the Jagiellonian University. Ed. by Maria Kocójowa. No 5. Library: The Key to Users' Success. Kraków: Instytut Informacji Naukowej i Bibliotekoznawstwa UJ. http://www-old.inib.uj.edu.pl/wyd_iinb/s3_z5/basili-n.pdf

Baumgartner, H. and Homburg, C. (1996). Application of structural equation modeling in marketing and consumer research: a review. International Journal of Research in Marketing, Vol. 13 No. 2, pp. 139-61.

Behrens, S. J. (1994). A conceptual analysis and historical overview of information literacy.

Bekele, S. (2002). The role and impact of the digital library on capacity building in the developing world – a case study of the OSSREA digital library. The International Information & Library Review, Vol. 34 No. 2, pp. 129-137.

Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. Government Information Quarterly, 27(3), 264-271.

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS Quarterly, 25 (3) , 351-370.

Bhatti, R. (2012). Information literacy: furthering the cause of higher education commission in Pakistan. Pak. Lib. Inf. Sci. J. 43, 3–11 (2012)

Bhatti, R., Chohan, T. M., & Asghar, M. B. (2014). HEC Digital library and higher education: Trends and opportunities for faculty members at the Islamia University of Bahawalpur, South Punjab, Pakistan. Library Philosophy and Practice, 0_1.(e-journal). 1059. http://digitalcommons.unl.edu/libphilprac/1059

Borrego, A., Anglada, L., Barrios, M. and Comellas, N. (2007). Use and users of electronic journals at Catalan Universities: the results of a survey. The Journal of Academic Librarianship, Vol. 33 No. 1, pp. 67-75.

Bruce, C.S. (2002). Information literacy as a catalyst for educational change: a background paper. White Paper prepared for UNESCO, the U.S. National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The Czech Republic.

Bruce, C. S. (2004). Information literacy as a catalyst for educational change. A background paper.

Byrnes, M.K.B. and Rosenthal, M. (2005). Remote access revisited: disintermediation and its discontents. The Journal of Academic Librarianship, Vol. 31 No. 3, pp. 216-224.

Calli, L., Balcikanli, C., Calli, F., Cebeci, H., & Seymen, O. (2013). Identifying factors that contribute to the satisfaction of students in e-learning. Turkish Online Journal of Distance Education, 14, 85-101.

Carter, L., and Belanger, F. (2004). Citizen Adoption of Electronic Government Initiatives. 37th Annual Hawaii International Conference on System Sciences, Big Island, Hawaii.

Churchill, G. A., Jr. (1979). A paradigm for developing better measures of marketing constructs. Journal of Marketing Research, Vol. 16, No. 1., pp. 64-73.

Churchill, G. A., Jr. and C. Surprenant, (1982). An investigation into the determinants of customer satisfaction. Journal of Marketing Research, Vol. 19, No. 4:491-504, November 1982.

Cohen J, Cohen P, West SG, Aiken LS. (2003). Applied Multiple Regression Correlation Analysis for the Behavioral Sciences. Mahwah, NJ: Lawrence Erlbaum.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297–333.

Cyert. R.M.. and March. 1.G. (1963) A Behoviorol Theory of the Firm. Prentice-Hall. Englewwd Cliffs. N.J.. 1963

D'Ambra, J., and Rice R.E. (2001). Merging factors in user evaluation of the World Wide Web. Information & Management, 38, 6 (2001), 373–384.

Daft, L.R. (2005). The Leadership Experience. (3rd ed.). South-Western: Thomson.

Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems. PHD Thesis. Sloan School of Management, Massachusetts Institute of Technology.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly, September, Vol.13, No.3, p.319-340.

Davis, F. D., Bagozzi, R. P., & Wars, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. Management Science 35 (8), 982- 1003.

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behaviour. New York: Plenum.

DeLone W. H., McLean E. R., (2003). The DeLone and McLean Model of Information Systems Success, A ten-year update. Journal of Management Information Systems, 19(4). pp. 9-30.

Doll, W. J. and Torkzadeh, G. (1988). The Measurement of End-User Computing Satisfaction. MIS Quarterly (12:2), June 1988, pp. 259-274.

Doll, Xia and Torkzadeh (1994) Doll, W. J., Xia, W., & Torkzadeh, G. (1994) A Confirmatory Factor Analysis of the End-User Computing Satisfaction Instrument. MIS Quarterly, 18, 4, 453-461.

Dorner, D. G. (2004). The impact of digital information resources on the roles of collection managers in research libraries. Library Collections, Acquisitions, and Technical Services, 28(3), 249-274.

Doyle, C. S. (1994). Information literacy in an information society: a concept for the information age. Syracuse. New York: ERIC Clearinghouse on Information and Technology.

Dziuban, C., Moskal, P., Kramer, L., & Thompson, J. (2013). Student satisfaction with online learning in the presence of ambivalence: Looking for the will-o'-the-wisp. The Internet and Higher Education,17, 1-8.

EGD (2005). E-government strategy and 5-year plan for the federal government. Electronic Government Directorate, available at: http://pportal.punjab.gov.pk/ portal/docimages/ 14240 Action_Plan.pdf.

Eighmey, J. (1997, June). Profiling user responses to commercial Web sites. Journal of Advertising Research, 37, 59-66

Elangovan, N. (2013). Evaluating perceived quality of b-school websites. IOSR Journal of Business and Management, 12(1), 92-102.

Evans, D., & Yen, D. C. (2006). E-Government: Evolving relationship of citizens and government, domestic and international development. Government Information Quarterly, 23, 207–235.

Farmer LS and Henri J (2008). Information Literacy Assessment in K-12 Settings," Lanham, MD: Scarecrow Press.

Fornell, C, Larcker, DF (1981). Evaluating structural equation models with unobservable variables and measurement error. J Mark Res 1981;18(1):39-50

Fornell, C., Johnson, M.D., Anderson, E.W., Cha, J., Bryant, B.E., (1996). The American customer satisfaction index: Nature, purpose, and findings. Journal of Marketing 60, 7—18.

Fox, J. (1991). Regression diagnostics: An introduction. (Vol. 79). Sage.

Gaskin, J. (2016). SEM Series: CFA Validity correction. Retrieved from: https://www.youtube. com/ watch?v8Sumk785Fmc&featureyoutu.be

Giese, J. L. and J. A. Gote, (2000). Defining Consumer Satisfaction. Academy of Marketing Science Review, Available: http://www.amsreview.org/ amsrev/ theory/ giese0001. Html.

Gilbert, D., and Balestrini, P. (2004). Barriers and benefits in the adoption of e-Government. The International Journal of Public Sector Management, 17(4), 286-301.

Haberle, N. (2002). Developing a theoretical evaluative framework for information literacy interventions: a South African initiative. South African journal of higher education. 16(3): 21-30.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). Multivariate data analysis. Upper Saddle River. NJ: Prentice Hall.

Hair, Jr., JF, Black, WC, Babin, BJ, Anderson, RE, Tatham, RL. (2006), Multivariate data analysis (6th Ed.) Upper Saddle River, NJ: Pearson-Prentice Hall,

Hallowell, Roger. (1996). The Relationship of customer satisfaction, Customer loyalty, and profitability: An empirical study. The International Journal of Service Industry Management, 7 (4): 27–42.

Hara, N., & Kling, R. (1999). Student's frustrations with a web-based distance education course. First Monday,4 (12) .

Herzberg, F., Maunser, B. and Snyderman, B. (1959). The motivation to work. John Wiley and Sons Inc., New York, NY.

Horan, T.A., Abhichandani, T. and Rayalu, R. (2006). Assessing user satisfaction of e-government services: development and testing of quality-in-use satisfaction with advanced traveler information systems (ATIS). Proceedings of the 39th Hawaii International Conference on System Sciences, Hawaii, 2006.

Imran, A., & Gregor, S. (2007). A comparative analysis of strategies for e-government in developing countries. Journal of Business Systems, Governance and Ethics, 2(3), 89-99.

Ives, B., Olson, M. H. and Baroudi, J. J. (1983). The Measurement of user information satisfaction. Communications of the ACM, (26:10), October 1983, pp. 785-793.

Johnston, B. & Webber, S. (2003). Information literacy in higher education: A review and case study. Studies in Higher Education, 28(3), 335-352.

Kaiser, H. F. (1974). An index of factorial simplicity. Psychometrika, 39, 31 – 36.

Karadeniz, M. (2015). The perceived service quality of technology markets and its effect on customer satisfaction. Journal of Military and Information Science, Vol3 (4), 103-112.

Karadeniz, M., Pektaş, G. Ö. E., & Gözüyukarı, M. (2015). The Role of Social Marketing in Creating Obesity Awareness and Its Effects on Life Quality. Journal of Military and Information Science, 3(3), 66-74.

Kim, E. B., & Eom, S. B. (2002). Designing effective cyber store user interface. Industrial Management & Data Systems, 102(5), 241-251.

Kotler, P., & Armstrong, G. (2005). Marketing an introduction: Upper Saddle River Pearson

Kumar, V., Mukerji, B., Butt, I., and Persaud, (2007). A factor for successful e-government adoption: a conceptual framework. Electronic Journal of E-Government, 5, 1, 2007, 63–76.

Loiacono, E.T., & Taylor, N.J. (1999). Factors Effecting Perceptions of Web Site Quality. Proceedings of the Fifth Americas Conference on Information Systems. August, 13th - 15th, 529-532.

Loiacono, E.T., Watson, R.T., Goodhue, D.L.(2000) WebQualTM: A Website Quality Instrument. Working Paper 2000-126-0, University of Georgia (2000).

Loiacono, E. T. (2000). WebQual : A web site quality instrument. PHD Thesis. Athens - Georgia: University of Georgia.

Loiacono, E. T., Watson, R., & Goodhue, D. L. (2002). WebQual™: A measure of web site quality. marketing theory and application. In K. Evans & L. Scheer (Eds.), Marketing educators conference: Marketing theory and applications (Vol. 13, pp. 432–437), http:// citeseerx. ist. psu. edu/viewdoc/download.pdf.

Mahmood, K., & Mahmood, K. (2017). Reliability and validity of self-efficacy scales assessing students' information literacy skills: A systematic review. The Electronic Library, 35(5), 1035-1051.

Mannan Khan, A., & Ahmad, N. (2009). Use of e-journals by research scholars at Aligarh Muslim University and Banaras Hindu University. The Electronic Library, 27(4), 708-717.

Molla, A., & Licker P. S., (2001), E-Commerce system success: An attempt to extend and respecify the DeLone & McLean model of IS success, Journal of Electronic Commerce Research, 2 (4).

Moon, J.-W., & Kim, Y.-G. (2001). Extending the TAM for a World-Wide-Web context. Information & Management, 38 (4) , 217–230.

Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K. C. (2004). SPSS for introductory statistics: Use and interpretation. Mahwah, NJ: Lawrence Erlbaum Associates.

Mosahab, R., Mahamad, O., & Ramayah, T. (2010). Service quality, customer satisfaction and loyalty: A test of mediation. International Business Research, 3(4), 72-80.

Muir, A. and Oppenheim, C. (2002). National information policy developments worldwide in electronic government. Journal of Information Science, 28, 3, 173 – 186

Munusamy, J., Chelliah, S., & Mun, H. W. (2010). Service quality delivery and its impact on customer satisfaction in the banking sector in Malaysia. International Journal of Innovation, Management and Technology,1(4), 398.

Musso, Juliet, Christopher, and Matt Hale. (2000). Designing web technologies for local governance reform: good management or good democracy. Political Communication 17(1): 1–19.

Nemat, R. (2011). Taking a look at different types of e-commerce. World Applied Programming, 1, 100–104.

Norusis, M. J. (1985). SPSSx: Advanced Statistic Guide. New York7 McGraw-Hill

Notess, M. (2004). Three looks at users: a comparison of methods for studying digital library use. Information Research, Vol. 9 No. 3, available at: http://informationr.net/ ir/9-3/ paper177.html

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17, 46–49.

Palmer J. W., (2002). Web Site Usability, Design, and Performance Metrics. Information Systems Research, 13(2): pp. 151-167.

Parasuraman. A. Leonard L. Berry, and Valarie A. ZeithamI (1988). SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1).12-40.

Perkins, G.H. and Yuan, H. (2000). Genesis of a web-based satisfaction survey in an academic library. Library Administration & Management, Vol. 14 No. 3, pp. 159-66.

Rafiq, M. and Ameen, K. (2012). Use of digital media and demand for digitized contents in higher education sector of Pakistan. International Information & Library Review, Vol. 44 No. 3, pp. 115-180.

Rafique, G. M. (2014). Information Literacy skills of Faculty members: A study of the University of Lahore, Pakistan. Library philosophy and practice, 0_1.

Reddick, G.C. (2004) Citizen interaction with e-government: From the streets to servers? Government Information Quarterly (22), 38-57.

Roca, J. C., & Gagne´, M. (2008). Understanding e-learning continuance intention in the workplace: A self-determination theory perspective. Computers in Human Behaviour, 24, 1585–1604.

Seddon, P. B. & Kiew, M. Y. (1996). A partial test and development of delone and mclean's model of is success, Australian Journal of Information system (AJIS) Vol. 4 No. 2, may.

Seddon, P. B. (1997), A Respecification and Extension of the DeLone and Mclean Model of IS Success. Information System Research, Vol.8, No.3. Shapiro, S. P. The Social Control of Impersonal Trust', American Journal of Sociology 93(3): 623–58. 1987.

Shafique, F., & Mahmood, K. (2008). Indicators of the emerging information society in Pakistan. Information Development, 24(1), 66-78.

Shapiro, J. and Hughes, S. (1996) Information literacy as a liberal Art: enlightenment proposals for a new curriculum. Educom Review, Vol. 31 No. 2.

Spreng, R. A., S. B. MacKenzie, and R. W. Olshavsky (1996). A reexamination of the determinants of customer satisfaction. Journal of Marketing, Vol. 60, No. 3:15-32, July 1996.

Stafford, T. F., & Stafford, M.R. (2001) Identifying motivations for the use of commercial web sites. Information Resources Management Journal, 14(1), 22-30.

Stefani A., Xenos M., (2008). E-Commerce system quality assessment using a model based on ISO 9126 and belief networks. Software Quality Control, 16(1): pp. 107-129.

Stiftung B. (2002). Balanced E-Government: E-Government – connecting efficient administration and responsive democracy. A study by the Bertelsmann Foundation.

Stowers, G.N.L. (2004). Measuring the performance of E-Government. IBM E-Government.

Swaminathan, V., Lepkowska-White, E. & Rao, B.P. (1999). Browsers or buyers in cyberspace? An investigation of factors influencing electronic exchange. Journal of Computer-Mediated Communication, 5(2), 1-23.

Thompson, B. (2004). Exploratory and confirmatory factor analysis: Understanding concepts and applications. American Psychological Association.

Tustin, N. (2010). The role of patient satisfaction in online health information seeking.Journal of health communication, 15(1), 3-17.

Ullah, M., & Ameen, K. (2014). Current status of information literacy instruction practices in medical libraries of Pakistan. Journal of the Medical Library Association: JMLA, 102(4), 281.

Ullah, M., Ameen, K. (2015) Perceptions of medical librarians towards the importance of information literacy skills. Pak. J. Inf. Manag. Lib. 16, 1–7 (2015).

UNCTAD (2009) United Nations Conference on Trade and Development. (2009). Information economy report 2009: Trends and outlook in turbulent times. New York. Retrieved from. http://unctad. org/en/docs/ier2009_en.pdf.

United Nations. (2008). The global information society: A statistical view. New York.

Vila, N., Kuster, I. & Aldas, J. (2005). Development and validation of scales of measurement in marketing. Universidad de Valencia. Material del curso Análisis de Data Avanzado.

Wang, L., Bretschneider, S., and Gant, J. (2005) Evaluating web-based e-government services with a citizen centric approach. 38th Annual Hawaii International Conference on Systems Sciences, Big Island, Hawaii.

Webber, S., & Johnston, B. (2000). Conceptions of information literacy: new perspectives and implications. Journal of information science, 26(6), 381-397.

West, D.M. (2004). E-Government and the transformation of service delivery and citizen attitudes. Public Administration Review (64:1), 15-27.

Westbrook, R. A. (1980). Intrapersonal affective influences on consumer satisfaction with products. Journal of Consumer Research, 7 (1), 49-54.

Wind, Y., Mahajan, V., and Gunther, R.E. (2002). Convergence marketing: strategies for reaching the new hybrid consumer. Prentice Hall, New Jersey, U.S.A.

Xiao and Dasgupta, (2002). User satisfaction with web-based information systems. Eighth Americas Conference on Information Systems.

Yang, B., Watkins, K., & Marsick, V. J. (2004). The construct of the learning organization: Dimensions, measurement, and validation. Human Resource Development Quarterly, 15(1), 31-15. http://dx.doi.org/10.1002/hrdq.1086.

Yi, M. Y., & Hwang, Y. (2003). Predicting the use of web-based information systems: Self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. International Journal of Human-

Computer Studies, 59(4), 431-449. http://dx.doi.org/10.1016/S1071-5819(03)00114-9.

Yoon, Y., and M. Uysal (2005). An examination of the effects of motivation and satisfaction on destination loyalty: a structural model. Tourism Management, 26:45-56.

Zaiţ, A., & BERTEA, P. S. P. E. (2011). Methods for testing discriminant validity. Management & Marketing Journal, 9(2), 217-224.

Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: cross-country evidence from the retail industry. Information systems research, 16(1), 61-84.

Appendix

Table: *Scale Items with Rotated component values*

Item	1	2	3	Communalities
UILS1			.746	.639
UILS2			.847	.801
UILS3			.788	.661
UILS4			.776	.650
PPV1	.897			.806
PPV2	.913			.849
PPV3	.880			.791
PPV4	.946			.899
PPV5	.903			.821
PPV6	.947			.906
PPV8	.953			.916
PPV9	.923			.863
PPV10	.951			.915
PPV11	.939			.889
PPV13	.945			.897
PPV14	.931			.873
PPV15	.956			.918
PPV16	.909			.831
PPV17	.948			.909
PPV18	.904			.835
PPV19	.913			.851
PPV21	.943			.903
PPV22	.923			.861
PPV23	.941			.892
PPV24	.894			.810
PPV25	.936			.886
PPV26	.894			.812
PPV27	.908			.838
PPQ1		.958		.922
PPQ2		.967		.939
PPQ3		.960		.925
PPQ4		.986		.975
PPQ5		.975		.955
PPQ7		.962		.933
PPQ8		.983		.970
PPQ9		.987		.978
PPQ10		.974		.954
PPQ11		.968		.945
PPQ12		.977		.957
PPQ13		.979		.963
PPQ14		.985		.973
PPQ15		.951		.908
PPQ16		.935		.877

PPQ17	.928	.863
PPQ18	.922	.872
PPQ19	.823	.700
PPQ20	.772	.598
PPQ21	.829	.694
PPQ22	.849	.732

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization
Rotation converged in 4 iterations

Table: *ANOVA Table*

Model		Sum of Sqr.	df	Mean Sqr.	F	Sig.
1	Regression	3.384	5	.677	.500	.776
	Residual	343.928	254	1.354		
	Total	347.312	259			
2	Regression	26.602	6	4.434	3.498	.002
	Residual	320.710	253	1.268		
	Total	347.312	259			

Table: *Coefficients Table*

Model		Unstd. Coeff.		Std.Coeff.	t	Sig.	Collinearity Stats.	
		B	Std. Err.	Beta			Tolerance	VIF
1	(Constant)	3.734	.996		3.748	.000		
	Gender	-.011	.214	-.005	-.054	.957	.483	2.071
	Age	-.005	.252	-.003	-.021	.983	.216	4.622
	Empstatus	-.194	.161	-.125	-1.200	.231	.360	2.781
	Institstatus	-.053	.226	-.021	-.233	.816	.498	2.007
	Desgination	-.092	.284	-.040	-.323	.747	.260	3.841
2	(Constant)	3.055	.977		3.128	.002		
	Gender	-.067	.207	-.028	-.323	.747	.481	2.079
	Age	-.068	.244	-.036	-.278	.781	.216	4.639
	Empstatus	-.189	.156	-.122	-1.213	.226	.360	2.782
	Institstatus	-.017	.218	-.007	-.077	.939	.498	2.010
	Desgination	-.060	.275	-.026	-.218	.827	.260	3.844
	PPQ	.233	.054	.260	4.280	.000	.988	1.012

Dependent Variable: UILS
Predictors in the Model: (Constant), Designation, Gender, Institstatus, Empstatus, Age, PPQ

Table: *ANOVA Table*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.384	5	.677	.500	.776
	Residual	343.928	254	1.354		
	Total	347.312	259			
2	Regression	38.243	6	6.374	5.218	.000
	Residual	309.069	253	1.222		
	Total	347.312	259			

Table: *Coefficients Table*

Model		Unstd. Coeff.		Std. Coeff.	t	Sig.	Collinearity Stats.	
		B	Std. Error	Beta		Tolerance	VIF	VIF
1	(Constant)	3.734	.996		3.748	.000		
	Gender	-.011	.214	-.005	-.054	.957	.483	2.071
	Age	-.005	.252	-.003	-.021	.983	.216	4.622
	Empstatus	-.194	.161	-.125	-1.200	.231	.360	2.781
	Institstatus	-.053	.226	-.021	-.233	.816	.498	2.007
	Designation	-.092	.284	-.040	-.323	.747	.260	3.841
2	(Constant)	2.727	.965		2.826	.005		
	Gender	-.027	.203	-.012	-.135	.892	.483	2.072
	Age	-.019	.239	-.010	-.080	.936	.216	4.623
	Empstatus	-.155	.153	-.100	-1.008	.314	.359	2.788
	Institstatus	-.104	.215	-.041	-.486	.627	.497	2.011
	Designation	-.063	.270	-.027	-.235	.814	.260	3.843
	PPV	.286	.054	.318	5.342	.000	.992	1.008

Dependent Variable: UILS

Predictors in the Model: (Constant), Designation, Gender, Institstatus, Empstatus, Age, PPV