

AN EMPIRICAL STUDY ON THE EFFECT OF INSTITUTIONAL FACTOR ON PERCEIVED VALUE OF E-LEARNING IN MANAGEMENT EDUCATION: WITH SPECIFIC REFERENCE TO E-S-QUAL

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ABSTRACT

Contemporary management education aims to equip students with knowledge, skills and competencies to deal with real time business challenges. At present there is considerable interest in how e-learning can be harnessed to enhance the efficacy of management education. Management institutions allocate substantial amount of resources for e-learning systems. Based on extensive literature review this paper identifies the dimensions that contribute to the institutional factor. The objective of this study is to examine the influence of institutional factor on service quality in e-learning and its influence on perceived value by the management students. The framework proposed is tested using structural equation modeling. The model examines the effect of institutional factors on E-S-QUAL sub-dimensions of efficiency, system availability, fulfillment and privacy. Further these E-S-QUAL sub-dimensions influences on perceived value are tested in the context of Indian management education. The main finding of this study is that institutional factors influence e-learning adoption and institutional factors have a direct impact on the service quality dimensions. Further service quality dimensions have a significant impact on perceived value among students using e-learning in management education.

Keywords: E-learning, E-S-QUAL, Information Communication Technology, Institutional Factor, Management Education, Perceived Value, Structural Equation Modeling

INTRODUCTION

The technological developments have had profound impact on businesses since the 18th century industrial revolution to the 21st century Industry 4.0 revolution powered by information technology and big data. There has been a great demand for integrating technology in education ever since the advent of personal computers and internet. From elementary education to higher education, information communication technology (ICT) has played a major role in not only revolutionizing the education system, but also making it more relevant from the industry perspective.

With the globalization of Indian economy there has been a surge in demand for management education in India. Management education is a much sought-after program because of attractive career prospects and broad scope of opportunities it offers to the students. Considering the growing demand for management education many management institutions have been set up in India. The aim of good management education is to provide students the skills, abilities, competencies and capabilities to face the challenges of the dynamic business world with confidence. With complex and dynamic business environment, the need for management professionals with relevant knowledge is growing rapidly. Management students passing out of the institutions should not only acquaint themselves with the relevant skill sets but they also need to have the right mix of technological knowhow to remain competitive throughout their career. Management institutions are looking at integrating ICT-based ways of teaching and learning called e-learning along with conventional face-to-face learning. In e-learning the course contents are delivered via internet, satellite system, intranet or extranet and through mediums like audio, videotape, interactive TV and CD-ROM (ASTD, 2018). E-learning offers an exciting option to complement classroom interaction with ICT-based course delivery (Agarwal et al., 2002). E-learning facilitates meaningful learning and engages the students in the process of thinking, and problem-solving along with developing reasoning skills (Jonassen et al., 2008). Jhurreev observed that the introduction of information technology in higher education will change the entire educational landscape forever (Jhurreev, 2005). Emerging e-learning technologies have opened doors to new opportunities that enhance the teaching-learning process which were unimaginable a few years ago. With increase and improvement in technologies and application worldwide, the use of e-learning is expected to increase drastically. Though management institutions are investing in e-learning solutions it does not guarantee better learning outcomes. In fact there are several cases of e-learning failures like Open University in England, New York University (NYU) Online, Columbia University, Global University Alliance and UK e-University (Matthews et al., 2007). However to remain relevant it is imperative for management institutions to adopt e-learning. Understanding critical success factors contributing to effective adoption of e-learning systems and its influence on service quality will benefit educational institutions implementing e-learning system. There is dearth of studies that examines the effect of institutional factor on

service quality and student's satisfaction. The current study focuses on the influence of institutional factor on service quality of e-learning and its effect on perceived value.

LITERATURE REVIEW

E-learning offers several benefits like vast geographic coverage, scalability, access flexibility and fast delivery among others (DeRouin et al., 2004). E-learning ensures a shift from teaching to active learning where users are encouraged to participate (Schrand, 2008). It offers personalized learning options from anywhere at anytime for the learners. There is scope for different learning options using multiple media that can meet the cognitive, affective and psychomotor learning needs of individuals and make learning an interactive and engaging process (Schrand, 2008). Considering the advantages of e-learning many educational institutions are allocating considerable amount of resources for e-learning systems. The factors that can influence e-learning adoption are discussed in the literature review. Alavi and Leidner (2001) framework based on empirical study to determine critical success factors for e-learning emphasized on technology, instructional design and psychological factors to improve e-learning adoption. The framework ignored student and facilitator characteristics which other researchers have found can influence technology usage and can affect e-learning adoption (Piccoli et al., 2001; Sharda et al., 2004). Facilitator can affect the learning outcomes by interacting online, providing quick feedbacks and participating in electronic discussions with students (McFadzean and MdKenzie, 2001; Marks et al., 2005). Piccoli (2001) focused on web-based virtual learning. The model stressed on facilitator as well as student dimension but ignored technological and institutional factors. The model incorporated information technology as a variable of instructional design dimension. Benbunan-Fich and Hiltz (2003) proposed framework considered technological factor, instructional design and emphasized on the effect of student active participation and motivation on e-learning. The model represented the relationship between course design, technology, student participation and learning outcomes. Volery (2000) suggested a framework based on a survey conducted on college students enrolled in an online management course. According to Volery technology, instructor and students competency in using technology are key factors for e-learning adoption.

Bhuasiri et al. (2012) conducted a study among ICT experts and faculty to identify the critical success factors of e-learning implementation in developing countries. The proposed model focused on technology awareness, technology usage, institutional support, training and quality material. Institute for Higher Education Policy, USA conducted an extensive study on six institutions of higher education in the USA that had implemented e-learning. The study recommend institutional support, course development, teaching and learning, course structure, student support, faculty support, evaluation and assessment as the critical success factors that influence e-learning systems (Govindasamy, 2002). Cheawjindakarn (2012) reviewed 19 research papers published between 2000 and 2012. Based on the papers reviewed he classified e-learning critical success factors in five categories which were institutional management, learning environment, instructional design, technical support, and evaluation. Selim (2007) conducted an empirical study on students and based on their perception categorized critical success factors for e-learning as 1) instructors' characteristics (style of teaching, approach toward students, control on technology etc.) 2) students' characteristics (motivation, technological competency, perception about course content and system, attitude, collaboration etc.) 3) technological infrastructure (ease of access, speed of internet, interface design, etc.) and 4) institutional support (technical support, IT infrastructure availability, course material accessibility, etc.). A study conducted by Oluyinka (2015) revealed that in developing countries the most crucial issues for effective usage of e-learning system are allocation of adequate funds for IT infrastructure, providing training support, devising strategies for e-learning use and quality assurance. According to Fresen (2005) the institutional factors include infrastructural readiness of the institution such as internet connections, cultural readiness, financial readiness, content readiness, technical infrastructure and management support for training. From various studies considered, it is apparent that the institutional factor is a critical factor for e-learning implementation in education.

Higher education is a service industry (Hill, 1995) and in higher education implementation of quality practices ensures that the educational institution performs well and the customers are well served (Sohil et al., 2003). Hill (1995) pointed out that students are the main customers of educational institutions and hence institution must focus on student centered services and education. Most researchers emphasized customer expectation as a key factor to define quality. Crosby philosophy was that the product or service must conform to requirement of customer while Deming advocated that quality can be specified by the customer depending on their needs and expectation (Cronin, 1992). Parasuraman et al., (1985) conducted an extensive study on the service industry and defined service quality as the difference between consumer expectation before receiving service and actual experience with the service. Parasuraman et al. (1988) based on their research developed the SERVQUAL model to measure service quality. The SERVQUAL model consists of five dimensions to measure service quality which are: tangibles, reliability, responsiveness, assurance and empathy. SERVQUAL is a popular scale and is used extensively to measure service quality. Many researchers have used SERVQUAL instrument for

assessment of service quality in higher education (Badri et al., 2005; Chatterjee et al., 2009; LaBay et al. 2003). It has been used in higher education to evaluate relationships between service quality and student satisfaction (Stodnick & Rogers, 2008, Smith & Clarke, 2007).

For services being offered in virtual environment the SERVQUAL dimensions needed to be altered to measure service quality. Parasuraman, Zeithaml, and Malhotra (2005) developed the E-S-QUAL model to measure the service quality for web-based service. The instrument consisted of dimensions like efficiency, system availability, fulfillment and privacy. Efficiency is the simplicity, ease and speed of accessing services. System availability reflects the technological functioning and performance of the system. Fulfillment measures how well the system delivers the promised services and meet user expectations. Privacy refers to transactional security and protection a user feels when using the services (Parasuraman et al., 2005). These E-S-QUAL dimensions included attributes from SERVQUAL model also. The instrument was tested and found to be a good scale for measuring service quality for Web-based service and electronic channel based delivery service (Christo, 2007). The advantage of the model is that it is generic model which can be used for all electronic-based service.

Educational institutions are now not only concerned about values, skills and abilities of their students but also want to gauge the perceived value and satisfaction level of students (Abdullah, 2006). E-Service quality has been associated with perceived value (Parasuraman et al., 2005; Santouridis et al., 2012). Many researchers have studied the influence of service quality on perceived value (Wolfinbarger and Gilly, 2003; Yen et al., 2008). In the service sector perceived value is customer's assessment between expectations versus experience (Zeithaml, 1988). Perceived value includes overall convenience and control. Positive perception about the service provided leads to better level of perceived value which in turn leads to higher satisfaction level among students (Cristobal et al., 2007) and reduces the likelihood of user complaints (Quach et al., 2016). According to Veloso et al. (2018) service quality is the main determinant of user satisfaction. The acceptance of e-learning system by students is determined by the perceived value and satisfaction derived from services offered by the system (Kasse and Balunywa, 2013). Service quality is the key for student satisfaction and is decisive for the acceptance and usage of e-learning system.

RESEARCH GAP

Several researchers have identified institutional management and support as critical factor for implementation of e-learning. Service quality has been the subject of several studies. However there is lack of sufficient research that examines the effect of institutional factors on e-learning service quality using E-S-QUAL. This study is significant as it assesses and validates the influence of institutional factor on e-learning service quality. The research also evaluates the impact of e-service quality on perceived value among students. The study would assist educational institutions in leveraging e-learning as the study examines the relationship between institutional factor, service quality and perceived value using E-S-QUAL.

RESEARCH OBJECTIVES

The objectives of the research are

- To study the effect of institutional factor on each of the E-S-QUAL sub-dimensions.
- To evaluate the relationship between E-S-QUAL and perceived value of e-learning systems.

METHODOLOGY AND CONCEPTUAL FRAMEWORK

The study was conducted in Bangalore, India to examine the influence of institutional factors on e-learning service quality using E-S-QUAL. The study also examines the influence of service quality on perceived value among post graduate management students. A city like Bangalore was selected as most management institutions would have reasonably good IT infrastructural facilities. Stratified random sampling technique was adopted. A structured questionnaire was administered to the students across several management institutions. Of the 500 questionnaires distributed 366 filled questionnaire were collected.

The questionnaire was designed by meta-analysis of the literature on the variables. The questions were framed covering the objectives. The problem areas were categorized, simplified and redundancy was eliminated to devise the questions in a standard form for the research. The questionnaire consisted of questions related to the demographic details of respondents, the E-S-QUAL dimensions and the institutional factors influencing e-learning adoption. The data was collected in the form of closed ended questions, mutually exclusive, multiple choice, 5-point Likert scale (1 to 5) with 1 being 'Strongly Disagree' and 5 being 'Strongly Agree'. Cronbach's alpha values were greater than 0.70 demonstrating that all constructs have adequate reliability assessment scores for internal consistency and scale reliability. The quantitative data collected was tested using descriptive statistics like mean, standard deviation, skewness and kurtosis using IBM SPSS. The descriptive statistics reveals the spread of data collected on various parameters of the study. The conceptual framework and the

hypothesis were tested using Structural Equation Modeling (SEM) in IBM AMOS. SEM uses confirmatory factor analysis method. The path diagrams are drawn to quantitatively prove the proposed conceptual framework. The model fit was tested using adjusted goodness fit index (AGFI), non-normed fit index (NNFI), comparative fit index (CFI), root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR)

The following are the main hypothesis tested

- H1: The institutional factor significantly affects efficiency
- H2: The institutional factor has a significant effect on system availability
- H3: The institutional factors significantly influences fulfillment
- H4: The institutional factor significantly affects privacy
- H5: Efficiency has a significant influence on perceived value
- H6: System availability significantly influences perceived value
- H7: Fulfillment significantly impacts perceived value
- H8: Privacy significantly affects perceived value

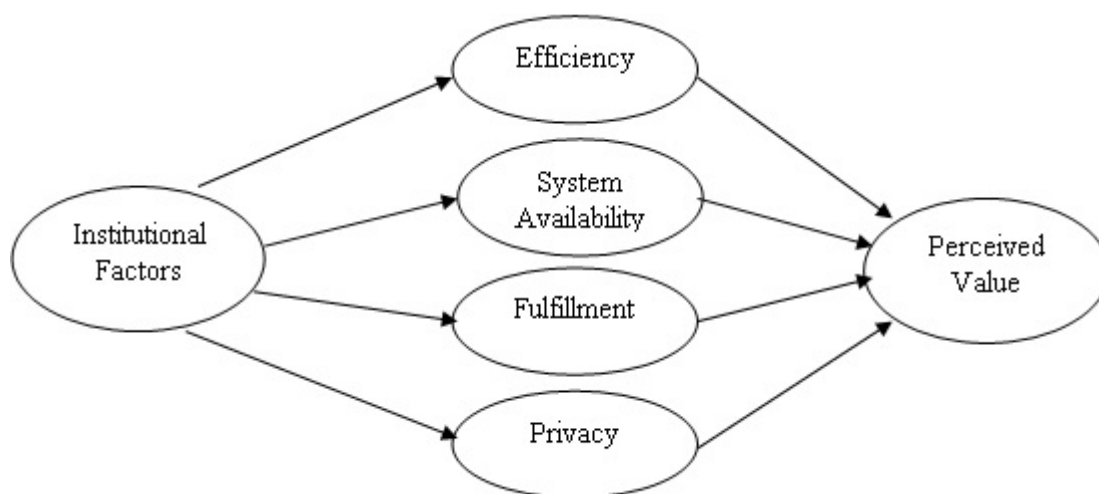


Figure 1. Conceptual framework

The conceptual framework shown in Figure 1 is proposed and tested using structural equation modeling. The influence of institutional factors on E-S-QUAL sub-dimensions like efficiency, system availability, fulfillment and privacy are examined. Further these E-S-QUAL sub-dimensions influences on the perceived value are tested.

RESULTS AND DISCUSSION

Among the 366 students surveyed about 211 (57.7%) were Male and 155 (42.3%) were Female. About 343 (93.7%) of the students were in the age group of 20-25 years and around 19 (5.2%) were in the age group of 25 to 27 years. The number of students who had work experience was 26 (7.1%) and about 340 (95.8%) students were fresher or had a work experience of below 2 years.

The institutional factors influencing the adoption of ICT in management education

The responses were recorded for the satisfaction level of the institutional factors influencing ICT adoption in management education on a scale of 1 to 5 with 1 representing extremely unsatisfied and 5 representing extremely satisfied. Table 1 shows the indicators for institutional factors with the variable names used to represent them in SPSS and IBM AMOS. The table also shows the mean of the responses and the standard deviation. It is observed that most of the responses for the indicators were around the midpoint. However the responses were negatively skewed for IF1, IF2, IF3, IF5 and IF6 and positively skewed for IF4. The low kurtosis compared to the normal distribution also shows that the data was widely spread around the mean. This shows that the students had very diverse opinion about the institutional factors influencing the adoption of ICT in their respective institutions.

Table 1. Descriptive statistics of the indicators for institutional factor

Sr. No	Indicators for Institutional Factor	Variable Name	Mean	Std Dev	Skewness	Kurtosis
1	ICT Budget	IF1	2.77	.851	-.031	.687
2	ICT integration in class is an institutional policy	IF2	2.96	.807	-.151	.473
3	Quality of ICT based course content	IF3	3.04	.880	-.153	.597
4	Availability of technology based course content	IF4	3.03	.906	.079	.082
5	Internet &Wi-Fi availability at the institution	IF5	3.02	.979	-.026	-.181
6	Quality of IT support	IF6	3.01	.985	-.115	.016

Among the institutional factors 57.1% respondents were just satisfied with the ICT budget of the institution, 55.6% were satisfied with their institutes policy on e-learning, only 49.2% were satisfied with the quality of ICT based course content and 72% were satisfied with the availability of technology based course content. 44% of the students were not satisfied with the quality of IT support in the management institutions. More than 50% of the students were dissatisfied with the quality of internet and Wi-Fi connection in their campus.

The E-S-QUAL sub-dimensions

The study adopts Parasuraman model for understanding the e-learning service quality offered by the management institutions. The major variables of the study under E-S-QUAL are efficiency, system availability, service fulfillment, privacy and perceived value of the e-learning system. The responses were recorded for E-S-QUAL dimensions on a scale of 1 to 5 with 1 representing strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The analysis of the responses is shown in the following section.

Efficiency

With respect to efficiency 74% of the respondents were satisfied with the ease of operation of the e-learning system in their college, 83% were satisfied with the ease of access to information, about 85% said that the information was well organized, 84% said the system was simple to use and 81% said the e-learning system in their campus allowed them to complete a transaction quickly.

Table 2. Descriptive statistics of the indicators for efficiency

Sr. No	Indicator used for the construct efficiency	Variable Name	Mean	Std Dev	Skewness	Kurtosis
1	The e-learning system in the college is easy to operate	EFF1	3.77	.946	-.590	.313
2	With the e-learning system it is easy to access information	EFF2	3.60	.968	-.658	.481
3	The information is well organized.	EFF3	3.66	.993	-.585	.272
4	It is very simple to use	EFF4	3.66	.966	-.644	.297
5	It enables me to complete a transaction quickly.	EFF5	3.60	1.031	-.511	.042
6	The LMS of our college enables me to get on to it quickly.	EFF6	1.82	1.018	-.383	-.155

Table 2 shows that, the mean scores for most of the responses on the indicators of efficiency construct were above 3, which shows that the respondents agreed that the adoption of e-learning in their institution was efficient. However most of the institutions did not pay much attention to the adoption of Learning Management Systems (LMS) in their institute and 70% of the students were dissatisfied with the LMS. The descriptive statistics also shows that the responses were mostly negatively skewed with a very low kurtosis. This indicates that the student opinions were diverse with majority of them agreeing on the efficiency of the e-learning system within their institution.

System Availability

With respect to the system availability 27% of the respondents were dissatisfied with the system's downtime, 30% believed that the required software does not launch and run quickly and 29% were unhappy about the e-learning system crashing. About 72% of the participants were happy with the flexibility of accessing the content from anywhere at their convenience.

Table 3. Descriptive statistics of the indicators for system availability

Sr. No	Indicator used for the construct system availability	Variable Name	Mean	Std Dev	Skewness	Kurtosis
1	ICT has very less down time	SA1	3.89	.926	-.317	.382
2	This required software's launches and runs right away.	SA2	3.87	.915	-.371	.256
3	This required software does not crash	SA3	1.82	1.014	.188	-.198
4	Contents are accessible anywhere, anytime	SA4	3.22	1.003	-.330	-.093
5	I have a PC / Laptop which is compatible with my college LMS	SA5	3.69	1.030	-.477	.118

Table 3 show that mean responses for SA1, SA2, SA4 and SA5 were above 3 which indicates that the respondents agreed that they experienced very less down time with the ICT at their institution, the system starts properly and students have the flexibility to access the contents on their device from anywhere, anytime at their convenience. However they were not satisfied with SA3 which indicates that the required software crashed often. The descriptive statistics also shows that the responses were mostly negatively skewed with a very low kurtosis. This indicates that the student's opinions were very diverse with majority of them being satisfied with the system availability of e-learning system in their institution.

Fulfillment

On the service fulfillment aspect 72% of the respondents said that e-learning delivers what it promised and 81% said that the course materials as well as results were available online. More than 71% of the students were happy with the electronic library while 75% were happy with the online reference material for their subjects and 78% of the respondents said that the LMS support was good.

Table 4. Descriptive statistics of the indicators for fulfillment

Sr. No	Indicator used for the construct Fulfillment	Variable Name	Mean	Std Dev	Skewness	Kurtosis
1	E-learning delivers what is promised.	FL1	3.79	.961	-.438	.019
2	The course materials are available when required	FL2	3.71	1.022	-.521	.003
3	The results of the assignments are available to students instantaneously	FL3	3.73	1.011	-.359	-.153
4	The electronic library is very useful	FL4	3.69	1.029	-.510	.025
5	All the subjects have good online reference materials	FL5	3.73	1.027	-.506	-.079
6	LMS vendor / ICT support fulfill their promise	FL6	3.82	1.027	-.495	-.063

Table 4 represents the descriptive statistics of the indicators for fulfillment. The mean responses were above 3 for the indicator variables related to the fulfillment construct of the E-S-QUAL dimension. Most of the responses were negatively skewed with low kurtosis. Hence the respondents agreed that the e-learning system delivered what it promised, the results of the assignment were available instantaneously, the electronic library was useful and most importantly the ICT support fulfilled their promise.

Privacy

On the Privacy aspect 81% of the respondents said that the e-learning system was secure and personal information was not shared on external sites. More than 85% agreed that e-learning systems provides appropriate restriction for students access and online evaluation system were also robust and secure.

Table 5. Descriptive statistics of the indicators for privacy

Sr. No	Indicator used for the construct privacy	Variable Name	Mean	Std Dev	Skewness	Kurtosis
1	The e-learning is secure and information is safe	PR1	3.60	.919	-.419	.378
2	It does not share my personal information with other sites.	PR2	3.55	.943	-.505	.435
3	IT provides appropriate restriction for student access	PR3	3.52	.953	-.384	.344
4	The online evaluation system is very robust and secure	PR4	3.56	.951	-.583	.398

Table 5 shows that the mean scores for all the indicator variables of privacy were above 3 and negatively skewed. It also shows low kurtosis. This indicates that most of the respondents agreed that the e-learning system of their institution was secure, it did not share any information with other sites, the system ensured appropriate restriction and the online evaluation system was also very robust and secure.

Perceived Value

In most researches perceived value is shown as one of the dimensions of E-S-QUAL model. In this research perceived value also measures the overall satisfaction and value derived from the e-learning adoption. The students were satisfied with the perceived value of e-learning with more than 84% of the students agreeing on the fact that overall working of the e-learning system was good and they were satisfied with the overall value derived out of the e-learning.

Table 6 Descriptive statistics of the indicators for Efficiency

Sr. No	Indicator used for the construct perceived value	Variable Name	Mean	Std Dev	Skewness	Kurtosis
1	The overall convenience of working	PV1	3.55	.934	-.647	.654
2	The extent to which e-learning gives you a feeling of being in control	PV2	3.67	.974	-.600	.401
3	The overall value you get for your efforts	PV3	3.60	.967	-.443	.331

Table 6 shows that the mean of responses of students for the indicators of perceived value is more than 3, which means that they were satisfied with the e-learning system in their institution. Further the responses were negatively skewed with low kurtosis. It is proven that the students agreed on the overall convenience of working with the e-learning system provided by their institution and they were satisfied with the overall value derived from the system .

Structural Equation Modeling

This section tries to identify the relationship between various constructs proposed in the conceptual model using confirmatory factor analysis and structural equation model with the help of IBM AMOS. The structural equation model tries to establish a quantitative relationship between various constructs and their respective indicators. The effect of institutional factors on the E-S-QUAL dimensions of efficiency, system availability, fulfillment and privacy is tested. In turn the effect of E-S-QUAL dimensions on perceived value is verified. The following diagram illustrates the output from IBM AMOS and shows the result of the model with the path diagram, regression weights and error estimates.

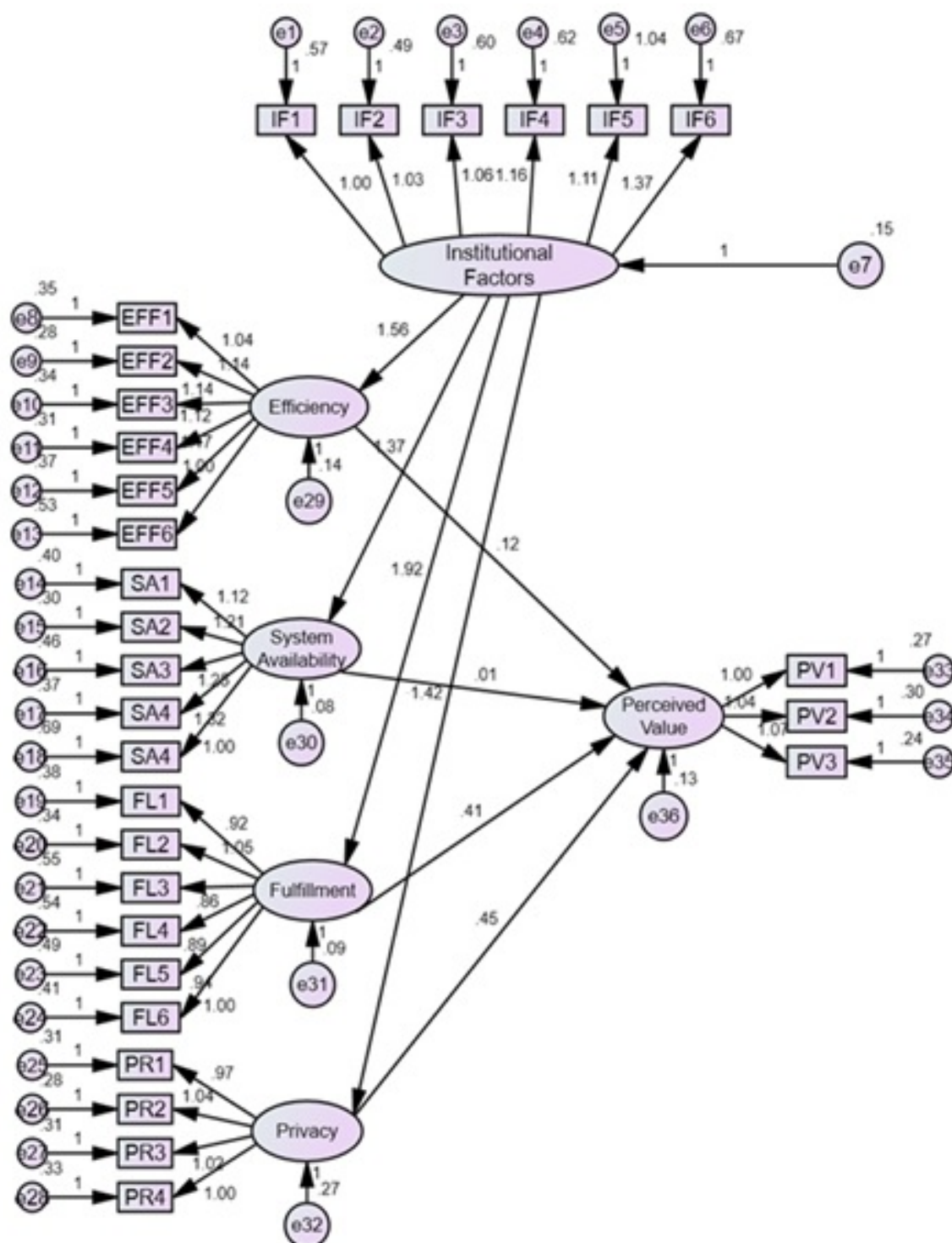


Figure 2 Path diagram of the conceptual framework

Table 7. Result of regression analysis

			Estimate	S.E.	C.R.	P	
Efficiency	<---	Institutional Factors	1.562	.198	7.885	***	Significant
System Availability	<---	Institutional Factors	1.369	.187	7.331	***	Significant
Fulfillment	<---	Institutional Factors	1.921	.229	8.388	***	Significant
Privacy	<---	Institutional Factors	1.420	.183	7.776	***	Significant
Percieved Value	<---	Efficiency	.116	.075	5.805	***	Significant
Percieved Value	<---	System Availability	.006	.101	6.351	***	Significant
Percieved Value	<---	Fulfillment	.413	.089	4.651	***	Significant
Percieved Value	<---	Privacy	.446	.060	7.477	***	Significant
IF1	<---	Institutional Factors	1.000				
IF2	<---	Institutional Factors	1.029	.149	6.908	***	Significant
IF3	<---	Institutional Factors	1.063	.159	6.688	***	Significant
IF4	<---	Institutional Factors	1.163	.168	6.934	***	Significant
IF5	<---	Institutional Factors	1.112	.188	5.919	***	Significant
IF6	<---	Institutional Factors	1.372	.188	7.285	***	Significant
EFF6	<---	Efficiency	1.000				
EFF5	<---	Efficiency	1.174	.081	14.418	***	Significant
EFF4	<---	Efficiency	1.115	.076	14.600	***	Significant
EFF3	<---	Efficiency	1.136	.078	14.475	***	Significant
EFF2	<---	Efficiency	1.145	.077	14.926	***	Significant
EFF1	<---	Efficiency	1.041	.075	13.951	***	Significant
SA5	<---	System Availability	1.000				
SA4	<---	System Availability	1.317	.116	11.322	***	Significant
SA3	<---	System Availability	1.248	.115	10.876	***	Significant
SA2	<---	System Availability	1.206	.106	11.347	***	Significant
SA1	<---	System Availability	1.120	.104	10.755	***	Significant
PR4	<---	Privacy	1.000				
PR3	<---	Privacy	1.024	.061	16.673	***	Significant
PR2	<---	Privacy	1.036	.061	17.115	***	Significant
PR1	<---	Privacy	.971	.059	16.337	***	Significant
FL6	<---	Fulfillment	1.000				
FL5	<---	Fulfillment	.939	.064	14.745	***	Significant
FL4	<---	Fulfillment	.895	.064	13.893	***	Significant
FL3	<---	Fulfillment	.858	.064	13.489	***	Significant
FL2	<---	Fulfillment	1.046	.062	16.917	***	Significant
FL1	<---	Fulfillment	.921	.059	15.583	***	Significant
PV1	<---	Percieved Value	1.000				
PV2	<---	Percieved Value	1.038	.056	18.439	***	Significant
PV3	<---	Percieved Value	1.071	.055	19.475	***	Significant

Output from IBM AMOS from the empirical data collected

As per Figure 2 and Table 7 the regression weights of the indicators for each of the constructs are significant at p-value 0.01. It can be inferred that ICT budget, institutional policy, internet availability, quality of IT support, availability and quality of technology based course content represents the institutional factor construct.

As per Figure 2 and Table 7 the regression weights of the constructs in the study are significant at p-value 0.01. The regression weights of institution factors on the E-S-QUAL dimension of efficiency, system availability, fulfillment and privacy are 1.562, 1.369, 1.921 and 1.420 respectively. This shows that institutional factor affects efficiency, system availability, fulfillment, privacy and influences the e-learning service quality.

The regression weights of the E-S-QUAL dimension of efficiency, system availability, fulfillment and privacy on perceived value are 0.116, 0.006, 0.413 and 0.446 respectively. This shows that the E-S-QUAL sub-dimensions have a significant influence on perceived value among the students. Table 7 shows the results of regression analysis of institutional factors on E-S-QUAL dimensions and the effect of E-S-QUAL on perceived

value. The results highlights that institutional factor significantly impacts E-S-QUAL dimensions. According to these results, hypotheses H1, H2, H3 and H4 are accepted. From the table it can be inferred that E-S-QUAL dimension affect perceived value. Based on these results hypothesis H5, H6, H7, and H8 are accepted.

Table 8. Model Fit Summary

Measure	Cut off for Good Fit	Result from SEM	Interpretation
Adjusted goodness fit index (AGFI)	GFI > 0.95 AGFI > 0.90	0.967 0.923	Good Fit
Non-normed fit index (NNFI)	NNFI > 0.95	0.93	Not a good fit
Comparative fit index (CFI)	CFI > 0.95	0.98	Good fit
Root mean square error of approximation (RMSEA)	RMSEA < 0.08	0.071	Good fit
Standardised root mean square residual (SRMR)	SRMR < 0.08	0.065	Good fit

Output from IBM AMOS

As per the above Table 8 it can be inferred that the given structural equation model is a good fit for most of the model fit test. Goodness of fit (GFI) and adjusted goodness of fit (AGFI) is the proportion of variance accounted for by the estimated population covariance. Analogous to R², AGFI favours parsimony. The model shows that GFI = 0.967 (>0.95) and AGFI is 0.923 (>0.90). Hence we deduce that the model is a good fit

Normed fit index (NFI) of 0.95, indicates the model of interest improves the fit by 95% relative to the null model. In this case the value is 0.93 which marginally fails to accept the model fit. Comparative Fit Index (CFI) is a revised form of NFI. It is not very sensitive to sample size. It compares the fit of a target model to the fit of an independent or null model. The CFI for the current model is 0.98 (>.90) and hence shows a good model fit.

The Root Mean Square Error Approximation (RMSEA) is a parsimony-adjusted index. The values closer to 0 represent a good fit. The current model shows RMSEA is 0.071 (<0.08) and hence represents a good fit. Standardized Root Mean Square Residual (SRMR) is the square-root of the difference between the residuals of the sample covariance matrix and the hypothesized model. SRMR is 0.065 (<0.08) which shows the model is a good fit..

Over all the SEM for the proposed confirmatory factor analysis (CFA) shows that the overall conceptual framework is a good fit. Also the hypotheses H1, H2, H3, H4, H5, H6, H7 and H8 are significant

CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

The study examines the role of institutional factor on service quality in e-learning using E-S-QUAL. A conceptual framework was designed to examine the influence of institutional factor on e-learning service quality and to test the effect of service quality on perceived value. Structural equation modeling was used to validate the framework and hypothesis. The findings of this study show that institutional factor has a significant influence on the E-S-QUAL sub-dimensions of efficiency, system availability, fulfillment and privacy. The findings in this study validates that indicators such as ICT budget, institutional policy, internet availability, quality of IT support, availability and quality of technology based course content represents the institutional factor construct. Further the E-S-QUAL sub-dimensions have a significant influence on perceived value among the students. The perceived value represents the overall convenience of working, the extent to which e-learning gives a feeling of being in control and the overall value derived from the efforts put in.

Further research can be conducted to study the effect of not only the institutional factors, but pedagogical factors, technological factors and teacher factors on the various E-S-QUAL dimensions.

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