

## A Study on Impact of Funding Capacity and Learning Attitude of Learners on Perceived Satisfaction of *e*-Services of Educational Institutions

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**Abstract :** While learners look forward for high level of knowledge acquisition, there is a pressure on the management to have a competitive advantage on superior levels of management of knowledge. Also adoption of online capabilities requires huge investment in terms of resources, time, money and space. So the investment and the related effectiveness is quite important from the investors' point of view. ICT based learning is referred in various terms like online education, *e*-learning, distance education or distance learning. In this study, online learning is defined as the form of learning facilitated by ICT and online capabilities is the comprehensive list of all *e*-service offerings by educational institutions like *e*-library, *e*-books, *e*-learning, online assignments, online surveys, online assessments etc. It becomes highly essential for the educational institutions to tap the best out of their investments by knowing the learner's needs and their pain points. The learning environment, the learning context, course design etc. involve a complex array of factors influencing the learner's satisfaction towards online learning. The study investigated the learner's Individual factors that impact their perceived satisfaction towards online offerings educational institutions. Simple random sampling has been applied for the research to collect the required sample. A structured questionnaire was distributed to collect the data from about 100 consumers including learners and instructors. A conceptual framework was developed to analyze the Individual factors impacting perceived satisfaction. This study provides valuable guidance to policy makers and providers of *e*-commerce in education in understanding the learner's individual factors influencing their satisfaction. Individual abilities have a significant impact on the perceived satisfaction of the learners which in turn positively impacts the adoption of *e*-services. Different from the prior research efforts focusing on all the *e*-services delivered by educational institutions. This study contributes to the growing literature by statistically exploring the relationship between the individual characteristics influencing the perceived satisfaction of learners. Higher education institutions have major challenges in developing educational offerings for students of this generation. Student's perception and satisfaction levels with the educational offerings have been lot researched and even the impact of their perception on the effectiveness of such offerings has been studied. But an extensive study on the impact of learner's investment capabilities and learning attitude together on perceived satisfaction and covering a comprehensive list of *e*-services is the focus of this study. This is the first attempt to evaluate the satisfaction levels of learners on an exhaustive list of *e*-resources.

**Keywords :** Individual ability, funding capacity, learning attitude, Perceived satisfaction, *e*-services, adoption, Information control technology (ICT).

## 1. INTRODUCTION

Educational institutions are widely using online mode to deliver the courses, dissemination of knowledge, e-repositories, communication purposes, data storage purposes etc. It's highly imperative to predict what impacts learner's perception on the online capabilities of educational institutions. Unless this is studied, it would be tough for institutions to meet their needs and take measures to improve their learning outcome. Cultural impact is one important dimension which as well impacts the satisfaction levels of the learners. Learner's beliefs in their own efficacy and their learning attitude are major influencers of their academic choices and their decision making. Prior literatures reveal that when learners are well versed with the technology requirements, they tend to be more oriented towards adopting e-learning and also show greater results. Institutions see a need to better understand the predictors that impact learners' satisfaction such as their technical ability, attitude towards learning, self-motivation, and self-directedness. There are perception issues such as feel of isolation, disconnectedness etc. As per Yu-Chun Kuo, Andrew E. Walker, Brian R. Belland and Kerstin E. E. Schroder (2013), gender, age and time spent online per week seem to have an impact on interaction among learners. Getting to know these predictors will help the institutions in designing and delivering e-services for academic purposes.

### Research Objectives

1. To study the impact of learner's funding capacity on their perceived satisfaction
2. To study the impact of learner's learning attitude on their perceived satisfaction
3. To evaluate whether all the measures fit the recommended value, indicating a good fit of the structural model for the collected data.

## 2. REVIEW OF LITERATURE

Sorgenfrei, Christian, Borschbach, Axel, and Smolnik, Stefan (2013) have mentioned that learner's self-efficacy and learning goal orientation are as well positively associated with learner's satisfaction. Also the learner's satisfaction is moderated by certain environmental factors such as learning climate and workload. Funding capacity of the stakeholders is referred in prior studies as economy, investment capacity etc.

### Individual self-motivation beliefs

Jung-Wan Lee, Samuel Mendlinger (2011) have mentioned the definition of Individual self-motivation beliefs as below.

- **Self-efficacy** : Individual level of confidence to accomplish a learning activity.
- **Learning goal orientation** : Purpose for adopting that particular learning task or acquiring a specific competency.

Learner's characteristics will influence their perceived satisfaction. Perceived satisfaction and usefulness impact the behavioral intention of e-learning use positively which ultimately has a positive impact on the e-learning effectiveness as studied by Shu-Sheng Liaw (2007).

Karen Becker, Cameron Newton and Sukanlaya Sawang (2013) have studied on the three significant barriers to e-learning *i.e.* the learning approach, use of technology and concerns about lack of time. Lack of technological skills and related anxieties constitute the concerns related to technology. Organizations have to reassure the users about the nature of e-learning and e-learning products. Lack of funding can be a barrier for adopting e-learning.

### **Individual Factors**

- Attitudes to technology
- Capability/ability to use technology
- Social interaction/quality concerns
- Lack of motivation to use
- Lack of academic skills
- Self-efficacy
- Lack of economy

### **Individual Challenges for e-Learning**

Annika Andersson, Åke Gronlund (2009) list out the challenges pertaining to individual characteristics of learners and instructors which are summarized here. Noesgaard, Signe Schack, and Rikke Ørngreen (2015) also mention about individual factors like Age, motivation, perception of learning, prior online experience etc.

### **Student**

- Motivation
- Conflicting priorities
- Economy
- Academic confidence
- Technological confidence
- Social support (support from home and employers)
- Gender
- Age

### **Teacher**

- Technological confidence
- Motivation and commitment
- Qualification and competence
- Time

## **3. METHODS**

### **Data Collection and Sample**

In this study, learner's perceptions were gathered using a structured questionnaire circulated in the form of electronic survey. Five-point scale was used to increase the sensitivity of the measure. Data on learners' perception about the two individual characteristics – Investment capability and learning attitude were collected.

## Data Analysis

Data collected from 100 consumers which includes 16 full-time learners, 56 Part-time learners and 28 instructors were analyzed using the Statistical Package for Social Sciences (SPSS). Statistical techniques like reliability analysis, was used to evaluate the quality of the questionnaire. Friedman test was used to test for differences between groups. Structural equation modeling (SEM) was used for analyzing the association between factors used in the model.

## 4. RESEARCH METHODOLOGY

### Sample

The sample comprises of online users which includes full-time, part-time, distance education learners and instructors. The research design is descriptive in nature for the study. The sampling technique that is used for the study is simple random sampling. A group of respondents were selected through simple random to avoid any sort of bias in the research and then the questionnaire was circulated to them in the form of electronic survey for which response was collected. Survey method of primary data collection using questionnaire adopted for collection of primary data.

### Data Analysis and Interpretation

SEM was used to analyze the collected data and evaluate the suitability of the model. Cronbach's alpha scores were calculated to test the reliability and consistency of each individual factor. The findings show that the overall reliability score is 0.9867 as shown in table1 which is above the minimum acceptable level of 0.8.

**Table 1**  
**Reliability Statistics**

<i>Cronbach's alpha</i>	<i>No of items</i>
0.9849	44

## 5. RESULTS AND DISCUSSION

### Structural equation modeling (SEM): Model fit assessment

Structural equation modeling (Figure1) was used to analyze the model fit based upon the primary data that was collected. This model is held as the most useful for assessment of causal relationship between variables and for verifying the suitability of the estimated model. For evaluating the model fitness, emphasis was given to chi-square value, Probability value, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit index (CFI), RMR and Root mean square error of approximation (RMSEA) (Table2).

As per the result shown in table3, Chi square statistics with p value of 0.231 which is greater than 0.05 shows good fit of the model. The GFI of this study was 0.993 and AGFI was 0.928 which is more than the recommended value of 0.90 representing a good fit. The CFI value of 0.999 also means a good fit. And the RMR = 0.022 and RMSEA = 0.066 indicate an absolute fit of the model. Goodness of fit indices support the estimated model fit and these emphasized indices indicate the acceptability of this structural model.

**The variables used in the structural equation model are**

#### 1. Observed, endogenous variables

- a) Individual Factors

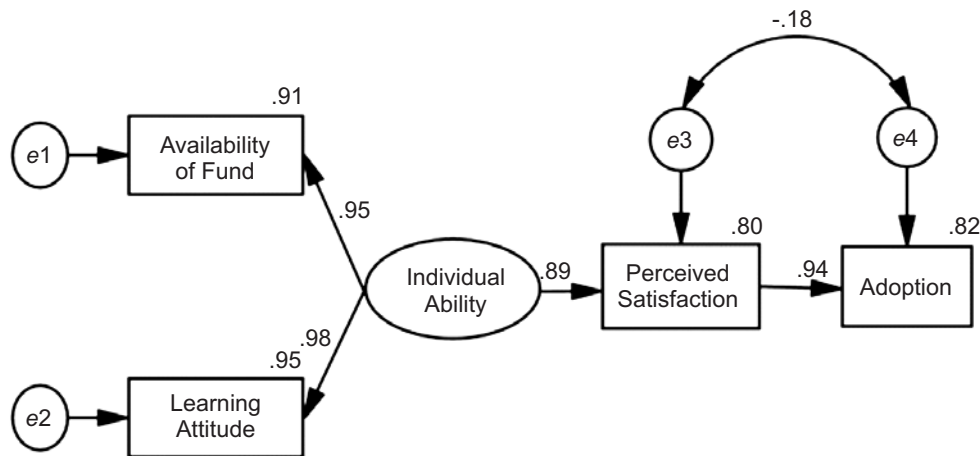
**2. Observed, exogenous variables**

- a) Self-efficacy
- b) Learning goals

**3. Unobserved, exogenous variables :  $e_1, e_2, e_3$  and  $e_4$  : Error terms for availability of funds, learning attitude, Perceived satisfaction and adoption respectively.**

**Table 2**  
**Number of variables in the SEM**

Total variables in this model	9
Total observed variables	4
Total unobserved variables	5
Total exogenous variables	5
Total endogenous variables	4



**Figure 1: Structural model -confirmatory factor analysis**

**Table 3**  
**Model fit summary of Structural Equation Model**

<i>Fit Indices</i>	<i>Results</i>	<i>Suggested values</i>
Chi-square value	1.438	–
Probability value	0.231	>0.05 (Hair et al., 1998)
Goodness of Fit Index (GFI)	0.993	>0.90 ( Hair et al., 2006)
Adjusted Goodness of Fit Index (AGFI)	0.928	>0.90 (Daire et al., 2008)
Comparative Fit index (CFI)	0.999	> 0.90 (Hu and Bentler, 1999)
RMR	0.022	< 0.08 (Hu and Bentler, 1999)
Root mean square error of approximation (RMSEA)	0.066	< 0.08 ( Hair et al., 2006)

### Significance Tests of Individual Parameters

Table 4 reports the unstandardized regression coefficients and connected test statistics. The unstandardized regression coefficient is the amount of change in the dependent variables for every metric unit change in the independent variable. The coefficient of perceived satisfaction is 0.767 represents the partial effect of perceived satisfaction on adoption, holding the other variables as constant. Table3 reports the unstandardized estimate, its standard error (S.E.), and the critical ratio (C.R.).

### Level of Significance for Regression Weight

As per table4, the probability of getting a critical ratio as large as 19.197 in absolute value is less than 0.001. In other words, the regression weight for perceived satisfaction in the prediction of adoption is significantly different from zero at the 0.001 level (two-tailed). The probability of getting a critical ratio as large as 11.403 in absolute value is less than 0.001. In other words, the regression weight for Individual abilities in the prediction of perceived satisfaction is significantly different from zero at the 0.001 level (two-tailed).

**Table 4**  
Variables in the Structural Equation Model Analysis

	<i>Variables</i>	<i>Unstandardized Estimate</i>	<i>S.E.</i>	<i>Standardized Estimate</i>	<i>C.R.</i>	<i>P</i>
<b>Availability of funds</b>	<--- Individual abilities	10.975	.865	.952	12.686	***
<b>Learning attitude</b>	<--- Individual abilities	8.378	.632	.975	13.265	***
<b>Perceived Satisfaction</b>	<--- Individual abilities	10.780	.945	.894	11.403	***
<b>Adoption</b>	<--- Perceived Satisfaction	0.767	.040	.940	19.197	***

### Correlation Analysis on Learners' Individual Abilities on Adoption

The correlation coefficient between availability of funds and learning attitude is 0.928. This indicates 92.8 percentage positive relationships between availability of funds and learning attitude on learning attitude at 1% level. The correlation coefficient between availability of funds and perceived satisfaction is 0.849. This indicates 84.9 percentage positive relationships between availability of funds and perceived satisfaction and is significant at 1% level (Table 5).

**Table 5**  
Correlation coefficients between Individual abilities and Adoption

	<i>Availability of Funds</i>	<i>Learning attitude</i>	<i>Perceived Satisfaction</i>	<i>Adoption</i>
<b>Availability of funds</b>	1.000	0.928(**)	0.849(**)	0.810(**)
<b>Learning attitude</b>		1.000	0.873(**)	0.814(**)
<b>Perceived Satisfaction</b>			1.000	0.904(**)
<b>Adoption</b>				1.000

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

## 6. FINDING AND SUGGESTIONS

The findings show that Cronbach’s alpha score is above 0.70 (Table 1). It could be very well concluded that the hypothesized three-factor model fits the sample data. Based on the viability and statistical significance of important parameter estimates; the considerably good fit of the model (CFI, GFI, AGFI, NFI, IFI, TLI, RMSEA) (Table 3).

The results showed: 1) the positive relationship between individual abilities and availability of funds and learning attitude and 2) the positive relationship between individual abilities and perceived satisfaction and adoption.

**Table 6**  
**Friedman test summary for availability of funds**

<i>How would you rate your funding capacity for the ICT infrastructure?</i>	<i>Mean Rank</i>
Funding for ICT infrastructure at residence is a major limitation	6.79
I feel it’s worth investing on ICT infrastructure	6.66
Home assignments warrant sophisticated and costlier softwares	7.03
I don’t mind spending on online learning as I would prefer online learning methods	6.80
I have sufficient funds to invest in ICT infrastructure at residence	5.16
My Spending on broadband is high	6.48
My spending on hardware is high	6.26
My spending on software is high	6.55
My spending on infrastructure upgrade is high	7.17
My spending on infrastructure repairs/replacements is high	5.79
My spending on support services is high	6.06
Overall my spending for required infrastructure at residence is huge	7.29
My funding capacity is backed up by family	6.79

**Table 7**  
**Friedman test summary for learning attitude**

<i>Please rate your online learning experience</i>	<i>Mean Rank</i>
I find Online learning more interesting	5.31
I am satisfied with my decision towards online learning and other assessments methods	5.40
I can keep myself on track and on time	5.24
I have a personal rationale for doing the course	6.57
I have prior experience working with internet which will help my e-learning	6.03
I am good at setting goals and deadlines for myself	5.79
I have a regular time set aside to work on the courses	5.18
I can ignore distractions around me when I study	4.66
I keep a record of what my assignments are and when they are due	5.31
I plan my work in advance so that I can turn in my assignments on time	5.53

Financial ability to invest for infrastructure at residence seems to be of significant concern as some of the *e*-services require sophisticated softwares which are costlier. More than the initial spending on the required infrastructure, upgrades seem to be received by the users as more unwarranted and costlier. In addition to the course fee, the cost required for establishing the infrastructure to continue studies at home seems to be overrunning the flexibility the *e*-services offer (Table 6). Learner's with a definite rationale to adopt the learning have a better experience utilizing the *e*-services for its much intended purpose (Table 7). Learner's attitude on studying itself can be a barrier towards satisfaction and adoption levels.

## 7. CONCLUSION

This study examined the impact on the satisfaction levels due to individual factors of the concerned learner. Part-time research scholars reported that balancing work, family, and study commitments left them with insufficient time to manage the academic load during normal work hours. Thereby, institutions providing them with lot many *e*-services like *e*-libraries, *e*-books, articles and dissertations work made available online, online communication channels etc. greatly helped them pursue their academics.

One major advantage when courses are taught online is that it cuts down physical visit to the campus allowing flexible timings to learn. Online learning is looked upon as a major alternative for learners without great accessibility to higher education. But otherwise levies huge financial burden on the learners' part to have some investment done at their residence for the required ICT infrastructure (Hardware, software, network). Economic prerequisites and funding difficulties can cause withdrawal from adopting the *e*-services. Reason being, the learners with financial constraints are finding it difficult to overcome their incompetence in using the education software as an effective learning tool. Some programs and tools have compatibility issues and learners should keep upgrading to the compatible version. Eventually learners facing difficulties in adapting to this online mode of study and communication tend to become frustrated in the earlier stages. Even the part-time learners are not allowed to carry out their academic work at their work place. They also mentioned the huge investment required to get high speed internet connection at home.

The practical implications of this study is that the management should provide complete guidelines on all sort of infrastructure that could be required at the learner's personal side given that frequent upgrades or re-installations will increase the cost investment. This will cut off any frequent upgrades required and withstand all sort of compatibility issues. Organizing an orientation session to learners on this may help the learner's in setting up the infrastructure and perform internet related activities confidently outside and within campus. This will help the learners gain technological and academic confidence which will improve their attitude towards learning.

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