Expansion of E-Learning Market in India Due to Global Pandemic

Nancy Sharma
PGDM Student, International School of Management Excellence

Dr. Raja Sankaran
International School of Management Excellence

Abstract
Purpose: The purpose of the study was to examine the factors that are responsible for the expansion of e-learning market in India due to global pandemic. For this study, four factors, namely, Perceived Usefulness, Perceived Ease of Use, Habit and Trust were used to determine the behavioral intention of the students using e-learning platforms.

Methodology/Approach: An online survey was conducted to collect data from 180 students using e-learning platforms in India after global pandemic. IBM SPSS was used in order to test the conceptual model and to validate and statistically analyze the results.

Findings: The factor Perceived Usefulness was found to be significant on Behavioral Intention, whereas Perceived Ease of Use, Habit and Trust were found to be not significant.

Implications: Educational technology organizations and various other e-learning platforms can use the results from the research study in order to improvise their existing strategy and to attract a greater number of schools or college institutions to adopt e-learning as a part of their curriculum in India.

Keywords: E-Learning, Perceived Usefulness, Habit, Trust

Introduction
E-learning market in India has witnessed an enhanced acceptance over a past few years. Gradually, it has become an important part of all the schools and universities across India. However, due to pandemic, schools, colleges and other educational institutions have shifted towards online learning. The Indian government has allowed the universities to offer online degrees which could be marked as a change that is going to revolutionized the education industry in upcoming years in the country. Due to this pandemic, e-learning has changed the perception of education in the eyes of parents, teachers and students. There is a bright future scope of e-learning market as even when everything gets normalize; the education system will continue to work with reduced classroom strength and will ensure social distancing. More than 94% student population of schools, universities and other learning platforms has been affected. This resulted in a rapid change in our lives. Social distancing and
restrictions in the movement have created a disturbance in traditional educational practices. The pandemic has provided us with an opportunity to get introduced to digital learning. Even before the surge of COVID-19, there were a high growth and adoption rate in education technology but there has been a significant increase in the usage since COVID-19. In response to the demand, platforms like BYJU’S, an educational technology and online tutoring firm which was founded in 2011, is now the world’s most highly valued EdTech company which has also announced a free live class on its Think and Learn app. According to its CEO, it has seen a rise in the account of new students using its product. The involvement of IT in education will be pushed and online education will gradually become an important part of an education industry.

Literature Review

In this section, we detail the literature related to the factors that are responsible for the expansion of e-learning market in India due to global pandemic Adoption of new technology with respect to education is a kind of decision that requires an optimal use of any innovation. However, in this paper, factors which were used to determine the behavioral intention of the students using e-learning platforms in India were explored.

(Smith, 2005) studied the concept of readiness for the online learning and the preferences and conducted the factor analysis which identified a factor related with self-management and comfort with e-learning. The researcher found that there was not much difference between online learning and physical classes in terms of satisfaction and also in terms of their academic performance. (Hara, 1999) and (Nguyen, 2015) supported the fact that online class is as important and can be beneficial as the traditional classes if it is designed properly. (Wagner, 2011) proposed the concept of competencies which was required to use the technology and however were identified as the perceived strengths of online learning. (Golladay, 2000) and (Serwatka, 2005) both further rationalized the need for greater discipline, writing skills, and self-motivation as well as the need for online users in order to make a time commitment to learning which were considered to be barriers in e-learning market.

Conceptual Model and Hypothesis

The population adopting e-learning platforms in India has become enormous due to global pandemic. Numerous factors influence student’s intentions and perceptions of using e-learning. Factors like continuance intention, perceived usefulness, ease of use, reliability, security, quality of service, affect student’s behavioral intention. As part of this study, a few prominent factors, namely student’s perceived usefulness, perceived ease of use, habit, and trust were used to develop a conceptual model as given in Figure 1.

The dependent variable is one that changes according to the change in an independent variable(s). The study includes the understanding of the influence of perceived usefulness, perceived ease of use, habit, and trust on the student’s behavioral intention to adopt e-learning in India due to global pandemic.

![Figure 1: Conceptual Model of Factors Affecting Behavioral Intention of Students using E-Learning Platforms](image-url)
**Perceived Usefulness:** Perceived usefulness (PU) is defined as an individual’s perception that the use of technology can lead to the improvement of performance (Davis, 1989). The study showed that the usefulness has a positive impact on the satisfaction level of the users, whether it influences the behavioral intention of the students. It describes the perception of the user, towards the usefulness of e-learning in daily life, the way e-learning technology increases the productivity of the user. E-learning helps the students accomplish things very quickly.

**H₁:** Perceived usefulness has a significant impact on the students using e-learning platforms consistently

**Perceived Ease of Use:** There are only a few steps required in getting registered in e-learning platforms in order to make the technology easy to use and easy to learn, and understandable. It reduces the complexity of students understanding the concepts and also does not have to compromise their education because of any setback as the education technology allows the students to use the platform anytime and anywhere. E-learning replaces the importance of being physically present in the class. This factor perceived ease of use positively affects behavioral intention of the students using e-learning platforms in India.

**H₂:** Perceived Ease of Use has a significant impact on the students using e-learning platforms consistently

**Habit:** Due to this pandemic, e-learning has changed the perception of education in the eyes of parents, teachers and students. E-learning has replaced the habit of the students attending classes physically in schools or college institutions. As a matter of fact, by giving access to the same classes and faculties through online platforms anytime and anywhere. E-learning has become a habit to most users, as they are attending classes through e-learning platforms every day in their daily lives.

**H₃:** Habit has a significant impact on the students using e-learning platforms consistently

**Trust:** E-learning platforms are now trusted by the students, professors as well as parents because it is reliable and consistent which eases the learning process successfully. Schools and college institutions are also inducing efforts to maintain consistency and reliability of e-learning applications across India. E-learning has the potential to improve student’s quality of education and to bring efficiency to knowledge and learning. The trust is created on something secure, reliable, and which gives consistent results. In this research study the student’s initial trust has been observed in e-learning.

**H₄:** Trust has a significant impact on the students using e-learning platforms consistently

**Research Methodology**

A population is the group of all items of interest, which is usually very large. It means the overall group having similar interests. The population of students using e-learning platforms have increased significantly as compared to pre-pandemic times. It may be finite or infinite. A sample is a set, which is drawn from the population, through sampling. Sampling means the method of collecting the required number of items from a large population. The sample of students using e-learning platforms in India is drawn by using convenience sampling from an infinite population. Convenience sampling is a type of non-probability sampling in which people are sampled because they are “convenient” sources of data for researchers. In probability sampling, each element in the population has a known nonzero chance of being selected through a random selection process (Lavrakas, 2008).

**Sampling Procedure**

For this research study, the target respondents were selected by using convenience sampling method under non-probability sampling design.
Instrument Development
A structured questionnaire was used to collect data using a seven-point Likert scale. The scale items for perceived usefulness, perceived ease of use, habit and trust were adapted from (Sankaran and Chakraborthy, 2021). Online google form was used, which consisted of 28 questions. 4 questions were used for each factor, resulting in a total of 28 questions which were used to determine the behavioral intention of the students using e-learning platforms in India. The Likert scale used in the questionnaire ranges from 1 to 7 (1 as strongly disagree and 7 as strongly agree). The adapted scale was proven from the Indian context, which is empirically validated by the study (Sankaran and Chakraborthy, 2021).

Data Collection
The data collection resulted in a total of 180 responses of the students using e-learning platforms in India. Out of 180 responses, 29 responses were removed. 3 responses were removed due to duplicate records, and 26 because of unengaged responses. Unengaged responses are those who mentioned the same rating for all the items in Likert scale. Primary data was collected from the respondents using a google form in an online mode. The data was validated using Microsoft Excel to exclude duplicate records. Out of 180, this phase resulted in a usable sample of 151 responses, ensuring no missing data and no duplicate responses.

Data Analysis
IBM SPSS was used for statistical analysis of the data. Cronbach Alpha was used to measure the internal consistency of the factors.

Descriptive Statistics
From the sample of 151 respondents, a) 61% of the respondents fall into the age group of 20-25 years. b) 38% fall into the age group of 25-30 years and the rest 1% fall into the age group over 30 years. c) 48.3% of the students use Microsoft teams as their one of the most trusted e-learning platforms followed by google meet which constitutes 26.1%. d) Similarly, Unacademy and Byju’s has the weightage of 14.4% and 11.1% respectively of the student population using e-learning platforms. e) However, before pandemic the frequency of using such e-learning platforms were less as compared to the usage frequency after post pandemic situations. f) The same students have admitted the fact that they used these platforms 69.4% quite less often as compared to post pandemic which raised its usage to 81.1% 3-5 days a week.

![Figure 2: Responses Based on E-Learning Platforms](image)
Instrument Validity

Cronbach Alpha was used to check the reliability of all the factors that were used to determine the behavioral intention of the students using e-learning platforms. The resulting value of Cronbach Alpha (used to find the internal consistency of all the items that are related close internally) was found to be 0.846 (refer Table 1), which is greater than the recommended value of 0.7 (Hair et al, 2010).

| Factor                  | Cronbach Alpha |
|-------------------------|----------------|
| Perceived Usefulness (PU)| 0.864          |
| Perceived Ease of Use (PEOU) | 0.913         |
| Habit (HB)               | 0.843          |
| Trust (TR)               | 0.867          |
| Behavioral Intention (BI) | 0.868          |
As given in Table 2, Kaiser-Meyer-Olkin Measure of Sampling Adequacy obtained was 0.922, and the value was found to be significant. The KMO measure and the significance value (P value) less than 0.05, indicates that the data is suited for this study, and we can further go ahead with factor analysis.

### Table 2: KMO and Bartlett’s Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.784 |
| Bartlett's Test of Sphericity |  |
| Approx. Chi-Square | 2002.878 |
| df | 190 |
| Sig. | 0.001 |

**Factor Analysis**

The factor analysis is a technique used to reduce a large number of items influencing factors into fewer numbers of factors. In this study, factor analysis was performed using Promax rotation.

During factor analysis, two items HB1 and TR1 were removed due to cross-loading with other factors, and items BI 1 and BI 2 was removed due to a low factor score. As a result of factor analysis (refer Table 3), five distinct factors were obtained.

### Table 3: Factor Analysis

| Factor-| 1 | 2 | 3 | 4 | 5 |
|-------|---|---|---|---|---|
| PU (1) | .760 | | | | |
| PU (2) | .710 | | | | |
| PU (3) | .934 | | | | |
| PU (4) | .916 | | | | |
| PEOU (1) | .884 | | | | |
| PEOU (2) | .913 | | | | |
| PEOU (3) | .914 | | | | |
| PEOU (4) | .862 | | | | |
| HB (2) | | .797 | | | |
| HB (3) | | .895 | | | |
| HB (4) | | .827 | | | |
| TR (2) | | .763 | | | |
| TR (3) | | .976 | | | |
| TR (4) | | .928 | | | |
| BI (3) | | | | .847 | |
| BI (4) | | | | .962 | |

**Screen Plot**

A scree plot always displays a downward curve. The number of factors generated in the analysis is indicated by the point where the slope of the curve is levelling off the elbow. As given in Figure 5 scree plot, a total of five factors were retained in factory analysis.
Regression

The R square would provide the percentage variation in behavioral intention explained by the factors perceived usefulness, perceived ease of use, habit, and trust. In this study, R square value obtained was 20.2% which indicates the four factors i.e. perceived usefulness, perceived ease of use, habit, and trust represent 20% of the behavioral intention of the students using e-learning platforms in India after global pandemic.

The regression test resulted in Perceived Usefulness (PU) with a significance value of less than 0.05. This indicates that Perceived Usefulness (PU) were supported in this study. Perceived ease of use (PEOU), Habit (HB) and Trust (TR) were found to have a pvalue greater than 0.05 which indicates that Perceived ease of use (PEOU), Habit (HB) and Trust (TR) were not supported.

The study was to test the combined impact of these four independent factors on the dependent factor (Behavioral Intention). The proposed regression model will be as follows: -

$$BI = b_0 + b_1(PU) + b_2(PEOU) + b_3(HB) + b_4(TR)$$

Table 4: Hypothesis Test Results

| Hypothesis | Path     | Beta coefficient | P-value | Significance     |
|------------|----------|------------------|---------|-----------------|
| H1         | PU-BI    | .425             | .000    | Supported       |
| H2         | PEOU-BI  | .028             | .711    | Not Supported   |
| H3         | HB-BI    | .137             | .066    | Not Supported   |
| H4         | TR-BI    | .035             | .658    | Not Supported   |

Conclusion

The study produced valuable insights in order to examine the factors that are responsible for the expansion of e-learning market in India due to global pandemic. Perceived Usefulness reflected a strong influence on the behavioral intention of the students using e-learning platforms in India. For this study, four factors, namely, Perceived Usefulness, Perceived Ease of Use, Habit and Trust were used to determine the behavioral intention of the students using e-learning platforms. In the rise of expansion of e-learning market in India, Perceived usefulness found to be the main determinant of the study.

From this research study, we can conclude that students find e-learning platforms useful in their daily life and perceive e-learning as desirable. Using e-learning platforms has also increased their productivity and consumer found e-learning platforms helpful to accomplish the tasks very quickly. This study verified the effect of the perceived usefulness of a consumer on their behavioral intention. This indicates that the students found e-learning platforms convenient and useful. From
the sample that was collected, it was found that a typical user of such online learning platforms was mostly those who are pursuing their masters or PH. D and relatively young millennials who are tech savvy and has a knowledge about the usage of such education technology. The study also found that perceived ease of use, habit and trust of the students using e-learning platforms have less effect on the behavioral intention. However, the factor habit was found to be close enough to be supported in this study which means that, it can also be considered into the study further. It can be inferred that marketers should keep in mind that in order to design their e-learning platforms for the students, they should make it convenient and useful for the users which will help the company to grow and expand.

**Limitations**

The data collected for the research study was insufficient i.e. 180 samples. Out of which 29 were removed due to duplicate and unengaged responses. The study was conducted only with 151 samples, which is collected more from the age group of 20-25 years. The study insights might differ with an increase in sample size. Also, the regression value was found to be low i.e. 20% in this study which indicated that even though our independent variables were found to be significant but it is not much contributing in the variation of our dependent variable. Hence, for further study and a better regression model to be obtained, more variable should be taken into the studies for further research.

**Appendix - Questionnaire**

| Factors         | Items   | Description of Items                                      |
|-----------------|---------|-----------------------------------------------------------|
| PU (Perceived Usefulness) | PU 1 | I find e-learning useful in my daily life                  |
|                 | PU 2   | I find using e-learning platforms increases my productivity|
|                 | PU 3   | Using e-learning platform helps me accomplish things more quickly |
|                 | PU 4   | Using e-learning platform increases my chances of achieving things that are important to me |
| PEOU (Perceived Ease of Use) | PEOU 1 | Learning how to use e-learning platform is easy for me |
|                 | PEOU 2 | My interaction with e-learning platform is clear and understandable |
|                 | PEOU 3 | I find e-learning platform easy to use                     |
|                 | PEOU 4 | It is easy for me to become skillful at using e-learning platform |
| HB (Habit)      | HB 1   | The use of e-learning platform has become a habit for me   |
|                 | HB 2   | I am addicted to using e-learning platform                 |
| HB (Habit)      | HB 3   | I must use e-learning platform                             |
|                 | HB 4   | Using e-learning platform has become natural to me         |
| TR (Trust)      | TR 1   | I trust e-learning to be reliable                          |
|                 | TR 2   | I trust e-learning to be secure                            |
|                 | TR 3   | I believe e-learning platforms are trustworthy             |
|                 | TR 4   | I trust e-learning platforms                               |
| BI (Behavioral Intention) | BI 1 | I intend to continue using e-learning platforms in the future |
|                 | BI 2   | I will always try to use e-learning in my daily life       |
|                 | BI 3   | I plan to continue to use e-learning platforms frequently  |
|                 | BI 4   | I predict I will use e-learning platforms in future        |

**Source:** The questionnaire was adapted from the research (Sankaran and Chakraborthy, 2021)
References

1. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly, 319-340.

2. Golladay, R. M., Prybutok, V. R., & Huff, R. A. (2000). Critical success factors for the online learner. Journal of Computer Information Systems, 40(4), 69-71.

3. Hair et al., J. F. (2010). Multivariate Data Analysis (7th ed.). Upper Saddle River, NJ. Pearson Prentice Hall.

4. Hara, N., & Kling, R. (1999). Students’ frustrations with a web-based distance education course.

5. Nguyen, T. (2015). The effectiveness of online learning: Beyond no significant difference and future horizons. MERLOT Journal of Online Learning and Teaching, 11(2), 309-319.

6. Lavrakas, P. J. (2008). Encyclopedia of survey research methods. Sage publications.

7. Sankaran, R., & Chakraborty, S. (2022). Factors impacting mobile banking in India: Empirical approach extending UTAUT2 with perceived value and trust. IIM Kozhikode Society & Management Review, 11(1), 7–24. https://doi.org/10.1177/2320206820975219

8. Serwatka, J. A. (2005). Improving retention in distance learning classes. International Journal of Instructional Technology and Distance Learning, 2(1), 59-64.

9. Smith, P. J. (2005). Learning preferences and readiness for online learning. Educational psychology, 25(1), 3-12.

10. Wagner, S. C., Garippo, S. J., & Lovaas, P. (2011). A longitudinal comparison of online versus traditional instruction. MERLOT Journal of Online Learning and Teaching, 7(1), 68-73.