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# Measuring Students Perception of Online Learning in the Context of Technology Acceptance Model in a Reputed Private University of West Bengal

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**Abstract**
The goal of this research is to assess several aspects of students' perceptions of online learning and to determine how these determinants might help define students' behavioral intention to use online learning mode. The investigation took place at a private university in West Bengal. The theoretical framework based on the Technology Acceptance Model (TAM) (Davis et al., 1989) was adapted for this study. We collected primary data from 100 individuals, 75 of whom were undergraduate BBA students and 25 of whom were postgraduate MBA students. The data collection was based on a structured questionnaire. We found that perceived usefulness (PU), perceived ease of use (PEOU), attitudes toward online usage (ATU), and the social impact of students' referent group (SI) were all significant predictors of students' behavioral intention (BI) to participate in online education. Additionally, we examined the correlations between various factors, such as the relationship between students' referent group's social influence and their perceived ease of use or perceived usefulness, as well as the relationship between students' perceived ease of use and online usage of their attitudes toward online learning in order to predict their behavioral intention to use online learning.
**Keywords:** Online Learning, TAM Model, PEOU, PU, SI.

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## 1. Introduction

Due to the information explosion, societal reliance on information technology has expanded dramatically. University education is the highest level of formal education. Fischer et al. (2014) recognized the primary challenge that universities confront when implementing E-learning platforms as integrating and enhancing both the teaching and learning processes. According to Engelbrecht, an interactive platform such as a cell phone, the internet, a CD, or even television can be utilized to deliver instruction and distance learning through an E-learning system (Engelbrecht, 2005). E-learning is the process of exchanging data, information, and education through the use of various electronic devices (Koohang & Harman, 2021), and these digital gadgets are used to fulfill scholars' desire to study and expand their knowledge (Cohen & Nycz, 2006). According to Sangrà et al. (2011), electronic tools and mediums facilitated the growth and enhancement of teaching and learning approaches in education and training. Davis (1993) defined the Technology Acceptance Model (TAM) as the relationship between a user's perceived usefulness, perceived ease of use, attitude toward utilizing, and actual user behavior in online learning. He also discussed ways to improve the quality of teaching and learning globally in order to achieve various educational benefits, such as facilitating information exchange and collaborative learning, recognizing the importance of time and place flexibility for innovative technology, and preparing students for lifelong and self-paced learning. Additionally, this strategy lowers the cost of education and enhances the overall cost-effectiveness of educational services. User acceptance of online learning is regarded as a critical component in determining the system's success or failure.

## 2. Objective of the study

To identify the underlying constructs of online learning on students' behavioral intention. The main objective of the study is to determine the relationships between these constructs of the proposed research model. This research addresses the factors for which the students accept or reject online information systems and how the system design features are influencing user acceptance or rejection.

## 3. Literature Review

Researchers discussed how customized YouTube videos increase students' engagement, depth of comprehension, and overall pleasure (Buzzetto-More, 2014; Jones & Graham, 2013; Liu, 2010). Researcher examined the extent to which social networking sites can alter the efficacy of learning and the extent to which this technology can be used to enhance existing pedagogical methods in a developing country (Abida Ellahi, 2013). Researchers emphasized in their study that as long as students utilize Web 2.0 tools extensively for social objectives, there will always be a potential to increase students' participation in higher education (L Zozaya, E Romero-Frías, S Del-Barrio-García, 2014). Researcher demonstrated in his article that mobile devices have evolved into desirable educational tools (Evrim Baran, 2014). Researchers depicted the Middle East was to better instruction in higher education; many universities used a Learning Management System as part of their teaching-learning pedagogy (Fatiha Bousbahi, Muna Saleh Alrazgan,2015). Researchers also stated that it had been a decade since the learning management system pervaded higher education in Sub-Saharan Africa, and the SSA presented new paradigms for e-learning delivery in both blended and online modes (Brandford Bervell, Irfan Naufal Umar, 2017). Few researchers concentrated on Gujarat, India, where numerous notable higher education institutions favored the usage of e-learning platforms (Y. Vijaya Lakshmi, Jaishree Das & Ishfaq Majid ,2020). Researchers set out to investigate the successful implementation and evaluation of Blackboard Ally among professors at Jazan University in the

Kingdom of Saudi Arabia (Ahmad Almufarreh, Muhammad Arshad & Sameer Hassan Mohammed, 2021). The goal of this study was to monitor how administrators, faculty, and students use the capability of Ally for Blackboard LMS across online classes to analyze both the learning process and the individual's success. Researchers also examined students' adoption of e-learning in higher education using an updated TAM paradigm, which incorporates multiple constructs such as computer self-efficacy, subjective norm, perceived enjoyment, perceived ease of use, perceived usefulness, attitude, and behavioural intention to use e-learning systems for education sustainability (Mohammed Almulla, 2021).

## 4. Framework of TAM

A conceptual framework for this study is provided by the Technology Acceptance Model (TAM) (Davis, 1989; Davis, Bagozzi, and Warshaw, 1989). Based on social psychology theories such as the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1985), TAM proposes that two beliefs about new technology, perceived ease of use (PEOU) and perceived usefulness (PU), influence a person's attitude toward using that technology (ATU), which in turn influences their behavioural intention (BI) to use it. External variables (e.g., system experience, level of education, age, etc.) determine both PEOU and PU, with PEOU determining PU directly and, if they have a strong correlation, both PEOU and PU determining ATU, while PU determining BI directly. Finally, business intelligence identifies the actual system in use. PU is a theoretical concept that refers to the degree to which a person relies on the use of technology to achieve better outcomes. This means that if students see how an online learning system can help them improve their performance, they are more likely to use online learning to help them improve their performance (Yee, Luan, Ayub & Mahmud, 2009). PEOU describes a user's awareness or perception of the level of determination required to use a system, or the degree to which a user believes that utilizing a particular technology will be straightforward or user-friendly (Alrafi, 2009).

## 5. TAM Model

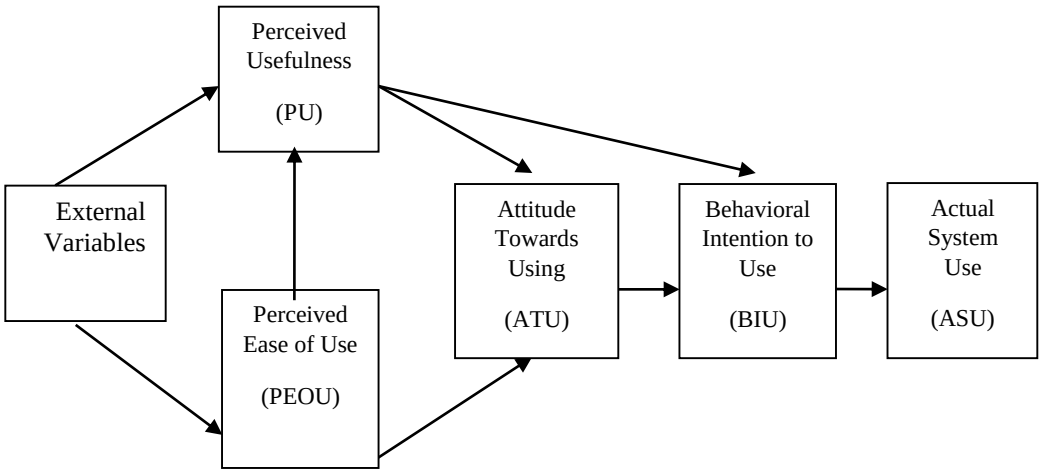


**Fig 1. Original TAM Model**

## 6. Proposed Research Framework

Social influence (SI) is defined as an individual's level of comfort with a system and the extent to which others rely on him or her to use that system. The conceptual model proposed here is based on the original TAM model for online learning. It is a straight flow chart that depicts the

relationships between research constructs, including the primary predictors of students' intention to engage in online learning. It demonstrates the effect of the social influence of referent groups SI on perceived usefulness (PU) and perceived ease of use (PEOU). These two determinants have an effect on users' attitudes toward online learning (ATU) and behavioural intentions toward online learning (BI).

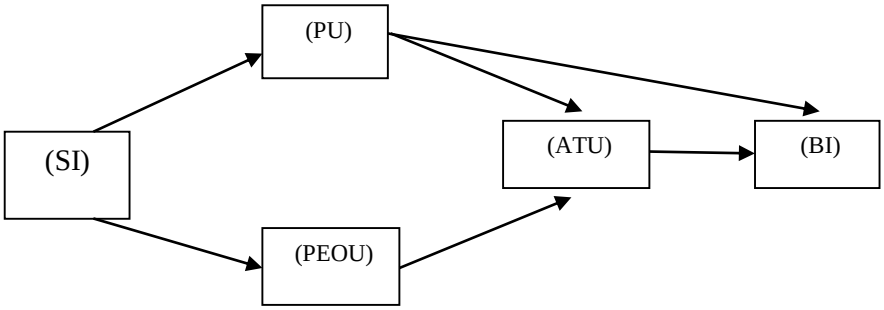


**Fig 2. Proposed Research framework based on original TAM model**

## 7. Methodology

The present study measures the five constructs of the research model containing 40 items in the final version of the questionnaire. Each of the five determinants SI, PU, PEOU, ATU, and BI consists of eight items measuring factors related to online learning. Responses are collected in a seven-point Likert scale ranging from 1-7 where the number represents, 1=strongly disagree to 7= strongly agree.

In this study, the questionnaire reliability assessment was done using Statistical Package for Social Sciences (SPSS Version 21). Reliability assessment was done using Cronbach Alpha calculation. Moreover, to measure the relationship among these determinants of the proposed research model correlation is calculated which is described in the below tables.

**Table 1. Constructs Reliability Cronbach Alpha**

| Constructs | No. of items | Cronbach Alpha |
|---|---|---|
| SI | 8 | 0.77 |
| PEOU | 8 | 0.69 |
| PU | 8 | 0.73 |
| ATU | 8 | 0.76 |
| BI | 8 | 0.72 |

As shown in Table 1, the internal consistency of the four factors is greater than 0.7, which is considered acceptable. As a result, we can assert that these five factors exhibit internal consistency. The factor PEOU has a Cronbach Alpha value of 0.69, slightly less than.70 but not significantly less than the acceptable cutoff value. As a result, we can accept this factor. A Cronbach Alpha value of significantly less than 0.7 indicates the need for a diagnostic test of variable-wise MSA values and the elimination of variables that do not contribute to co linearity with other variables.

**Table 2. Correlations between SI and PEOU**

| Correlations | | |
|---|---|---|
| SI | Factors | PEOU |
| | R-value | 0.786 |
| | P-value | 0.000 |
| | N | 100 |

Table 2 shows the correlation between perceived ease of use (PEOU) and the social influence of referent groups (SI). The correlation between these factors is significant with P<.001. The strength of the correlation coefficient (r) is between 0.70 and 0.90 indicating variables are highly correlated. Thus, we can conclude that there are strong positive correlations between social influence referent groups and the perceived ease of use of the online learning system. If the online system is user-friendly, it will be highly accepted by the socially influenced reference groups.

**Table 3. Correlations between SI and PU**

| Correlations | | |
|---|---|---|
| SI | Factors | PU |
| | R-value | 0.756 |
| | P-value | 0.000 |
| | N | 100 |

Table 3 shows the correlation between perceived usefulness (PU) and the social influence of referent groups (SI). The correlation coefficient, r value is .756. It is a little bit less than the r value in the case of PEOU but since it is more than .70, it can be concluded that there is a strong correlation between perceived usefulness and the socially influenced reference groups. The relevancy of usefulness of the online system for the students, teachers, and employees will be obviously depended on the social influence of referent groups (SI).

**Table 4. Correlations between PEOU and PU**

| Correlations | | |
|---|---|---|
| PEOU | Factors | PU |
| | R-value | 0.776 |
| | P-value | 0.000 |
| | N | 100 |

Table 4 shows the correlation between perceived ease of use (PEOU) and perceived usefulness (PU). The correlation coefficient, r value is .776. Since the value is more than .70, it can be recommended there is a strong correlation between perceived ease of use (PEOU) and perceived usefulness (PU). Thus, it can be said that the usability of the online learning system will be increased if it is more user-friendly.

**Table 5. Correlations between PU and ATU**

| Correlations | | |
|---|---|---|
| PU | Factors | ATU |
| | R-value | 0.796 |
| | P-value | 0.000 |
| | N | 100 |

Table 5 shows the correlation between perceived usefulness (PU) and attitude towards using (ATU). The correlation coefficient, r value is .796. As the value is quite high and tends to be .80, it can be concluded that the attitude of the user towards using an online learning system will be increased if the perceived usefulness of the system is increased.

**Table 6. Correlations between ATU and BI**

| Correlations | | |
|---|---|---|
| ATU | Factors | BI |
| | R-value | 0.881 |
| | P-value | 0.000 |
| | N | 100 |

Table 6 shows the correlation between attitude towards using (ATU) and the behavioral intention of users (BI) towards online learning. The correlation coefficient, r value is .881, which is quite high. So, it can be said that users' positive attitude towards using online learning systems will increase the behavioral intention of the users for online learning and vice versa.

## 8. Conclusion

We have categorized the determinants of students' intention to use online learning and examined the relationships that influence these determinants on students' intention to practice online learning in this research. We have identified various key determinants of students' behavioral intention to learn online; these were the social influence of students' referent group (SI), perceived usefulness (PU), perceived ease of use (PEOU), and attitude towards usage of online learning (ATU). It was found that students of the examined private university of West Bengal tend to have constructive positive attitudes towards using online education and learning and thus their intention for the growth and practice of online learning is increasing.

### 8.1. Limitations

This research revealed various conclusions related to the online learners affecting their intention to use online learning. But this research has several possible limitations, like the convenience technique to select the small sample from the one private university of West Bengal. Secondly, the data was collected from students who have basic knowledge and insufficient experience of online learning. Thirdly, the research does not consider the other major stakeholder's perceptions of the education system like teachers, guardians, administrative staff, management authorities, and govt. agencies.

### 8.2. Recommendation

We will try to carry out the current research using a larger sample, with long experience of stakeholders to learn online. Additional research to study the influence of each category of students' referent group on their intention to learn online is needed. Most important to consider other major stakeholders' perceptions of the teaching-learning pedagogy.

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