

**FACTORS INFLUENCING STUDENTS' BEHAVIORAL INTENTIONS TO USE MOBILE LEARNING SYSTEMS****Meena Kumari Sriwas**

Research Scholar

**Satish Chand Sharma**

Guide Assistant Professor Education Department, Jayoti Vidyapeeth Women's University Jaipur

**ABSTRACT**

People are seeking for different ways to get their job done as a result of the conditions brought on by the Covid-19 epidemic. The educational system was not immune to this transformation, and nowadays, reliance on the use of contemporary information and communication technologies (e-learning) has become obligatory. The use of mobile devices in the learning process is referred to by the phrase "mobile learning," which is a word that is connected to it. Investigation into the use of mobile learning requires further study to be conducted. This study aims to investigate the behavioural intents of students to make use of mobile learning systems.

**Keywords:** Mobile learning, E-learning, UTAUT, Technology adoption, Behavioural intents

**I. INTRODUCTION**

"Mobile learning, also known as m-learning, has acquired a lot of momentum in today's educational institutions as a direct result of the tremendous breakthroughs that have taken place in information and communication technologies (ICTs) (Han & Shin, 2016). Mobile learning is also known as m-learning. In the context of formal learning processes, the term m-learning refers to the utilization of the ubiquitous communication capabilities and user-friendly interfaces that portable mobile devices and wireless technologies make available (El-Hussein & Cronje, 2010). These capabilities and interfaces are made accessible by portable mobile devices and wireless technologies. According to research conducted by Naciri et al. in 2020, the advantages of m-learning may be reaped in a variety of various ways. For instance, it enables learning to take place at any time and in any location, and it enables personalization for both students and" teachers. Additionally, it makes it feasible for learning to be personalised. It also assists students in improving their technological and linguistic capabilities, and it stimulates the sharing of knowledge by establishing a sense of collaboration among students; all of these factors lead to an increase in the students' overall learning outcomes (Toquero, 2020).

Mobile learning management systems, more commonly referred to as m-LMSs (mobile learning management systems), are a common component of mobile learning. Students and teachers alike will be able to use portable electronic devices to gain access to their courses as well as the necessary resources for instruction if these systems are implemented. According to Ferreira et al. (2013), an "M-LMS is a subset of a normal Learning Management System (LMS) programme that may be employed as a mobile learning aid regardless of the user's location or the time of day. This is because an M-LMS is a subset of a regular LMS programme. According to Han and Shin (2016), the features of an m-LMS are equivalent to those of a traditional PC-based learning management system (LMS). On the other hand, users of an m-LMS have the extra benefit of mobility offered to them by the usage of smartphones, laptops, tablets, and other handheld portable devices. A significant number of educational

establishments at the higher education level have integrated several mobile learning management system (m-LMS) applications as an important component of their overall learning and teaching methods (ibid). This is a direct consequence of recent advances in technology and new inventions in that field. In addition, because of the current circumstances surrounding COVID-19, in which a number of nations all over the world have announced a whole or partial lockdown, the move towards m-learning in all of its forms has been unavoidable (Naciri et al. 2020). This is due to the fact that numerous nations have announced a whole or partial lockdown".

It has been suggested by a number of knowledgeable individuals that one of the most significant drawbacks of e-learning is the high percentage of students who are unhappy with the manner in which new system innovations are being implemented in their educational facilities as an essential component of the courses that they are taking (Al-Mamary, 2022). This is one of the most significant drawbacks of e-learning, according to a number of knowledgeable individuals. E-learning technologies are not an exception to the rule that any information system has the potential to fail if it is not accepted by the people who have the ability to use it. This rule applies to all information systems. According to the findings of study, only a tiny fraction of educators include technology associated with learning management systems (like Blackboard) into their lesson plans. Because of this, pupils are less likely to adopt such technology, which in turn raises the risk that the system will not be successfully deployed (ibid). As a consequence of "this, the purpose of this research is to evaluate the behavioural intentions of university students utilise a mobile learning management system (m-LMS) such as Mobile Blackboard through the application and empirical testing of an enhanced version of the UTAUT model. Specifically, the researchers hope to find out how likely the students are to use Mobile Blackboard. The UTAUT framework has shown that it is ideal for acquiring a knowledge of the adoption of technology in the setting of higher education" (Venkataraman and Ramasamy, 2018).

## **II. LITERATURE REVIEW**

### **2.1. Adoption of M-learning**

According to Mishra et al (2023), a large amount of study has been done in the field of information systems literature in the quest of explanations of the adoption and usage of such technologies. This is due to the fact that the state of technology is always advancing. This interest was sparked as a result of the tremendous improvements in information systems (IS) that have occurred over the past few decades, a time period "in which the world has experienced enormous changes in the technical environment (ibid). The technologies of e-learning are not an exception, as universities and other institutions of higher education all over the globe have shown their interest in adopting LMSs as an essential component of their educational system by making considerable investments in necessary technological infrastructure. This interest has led to the adoption of LMSs by universities and other institutions of higher education all over the world. The fact that they have carried out their wish demonstrates how strongly they feel it. Such technologies would not only assist students have an enhanced learning experience, but they will also aid universities' administration and educators in predicting the performance of students through the data management capabilities of student information (Abul Ala Walid et al. 2022)".

On the other hand, the uptake and utilisation rate of such systems by students has not adequately reflected this development (Ghapanchi et al. 2020). According to the available research, the adoption and acceptance of mobile learning management systems (m-LMSs) by students enrolled in higher education is limited by a range of variables operating at several levels, including individual, institutional, social, and cultural levels (ibid). This is the case despite the fact that we are living in the digital age, an

era in which information and communication technology (ICT) as well as digital media play important roles in the lives of people on a daily basis, particularly the lives of young people. In light of this, Herath and Mittal (2022) found that many educators have attempted to investigate and get an understanding of the role that modern technology may play in terms of the enhancement of educational standards.

"According to the findings of a study that applied the unified theory of acceptance and use of technology (UTAUT) model to investigate m-learning adoption by university level students (174 participants) (Abu-Al-Aish & Love, 2013), behavioural intention is influenced by personal innovativeness, performance expectancy, lecturers' impact, and effort expectancy. It was also shown that familiarity with the use of mobile devices had a moderating influence between the previously described factors and behavioural intentions to utilise m-learning technologies (ibid)". It was discovered that this is really the situation. Another study that looked at the factors that determine whether or not someone will use mobile learning found that the four primary components that make up the UTAUT model—performance expectation, effort expectancy, social influence, and enabling conditions—had a significant impact on the participants' behavioural intentions (Masrek & Samadi, 2017). These factors include performance expectation, effort expectancy, social influence, and enabling conditions.

Iqbal and Qureshi (2012) looked at the adoption environment of mobile learning in yet another study that they carried out. They utilised a hybrid model, which they developed by fusing the TAM and UTAUT models together to produce a new model. According to the findings of the study, the perceived social effect of m-learning technologies, the perceived usefulness of m-learning technologies, the perceived simplicity of using m-learning technologies, and the perceived enjoyment of m-learning technologies all have an impact on users' preparedness to embrace and utilise these technologies. The introduction of various social and motivational components into the framework for m-learning adoption was an additional significant contribution that was made by this study. This, in turn, had the effect of having a substantial favourable impact on "TAM and UTAUT models by helping to separate mobile educational settings from locations that were more traditionally used in education".

## **2.2. Technology adoption theories**

There are a variety of "well-established models and theories that have been constructed to measure users' intention to" embrace new technical breakthroughs in the field of information systems. This, in turn, assists companies in thriving in an environment that is competitive (Kar & Kushwaha, 2021). The literature of information systems is the name given to this corpus of previously published research. For example, Diffusion of Innovation Theory (DOI) (Rogers, 1995), Theory of Planned Behaviour (TPB) (Ajzen, 1991), The theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Technology Acceptance Model (TAM) (Davis, 1989), Model of Adoption in the Household (MATH) (Venkatesh & Brown, 2001), The Model of PC Utilization (MPCU) (Thompson et al. 1991) and The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al, 2003). According to Jadil et al. (2022), the TRA, TPB, and TAM models are the ones that are used the majority of the time in behavior-related research, specifically in the context of the literature on IS adoption. These models are the ones that are used the most frequently in behavior-related research. The Technology acceptance Model (TAM) in particular stands out as a useful theoretical tool in the context of studies on the implementation and acceptance of newly developed technology. In addition, research that was done by Chhonker et al. (2017) found that the UTAUT theory is one of the most prominent models that is used to predict the behavioural intention of users. This finding was made possible by the findings of the study that was carried out by Chhonker et al. (2017).

"Although the latter theory in particular has become one of the leading theories that researchers use in order to investigate the factors that influence human behaviour and attitude towards new technologies and systems, it has not been applied very frequently in higher educational technology adoption settings (Arain et al. 2019). This is despite the fact that the theory has become one of the leading theories that researchers use in order to investigate the factors that influence human behaviour and attitude towards new technologies and systems. This is in spite of the fact that it has developed into one of the most influential theories that academics utilise in order to explore the elements that impact human behaviour and attitude towards new technologies and systems". As a consequence of this, the UTAUT model will be used as the basis for this study since Venkataraman and Ramasamy (2018) suggested that it is most suited for assessing the adoption of technology in the context of higher education. As a consequence of this, the UTAUT model will be utilised as the foundation for this research. According to the findings of a study that was conducted by Venkatesh and colleagues in 2003, the UTAUT model is comprised of four major components that are crucial for choosing whether or not new technologies will be adopted. These components consist of the following: a social influence, an environment that facilitates, an expectation of performance, and an expectation of effort.

### **III. FACTORS THAT INFLUENCE STUDENTS' BEHAVIOUR INTENTION**

#### **3.1 Performance expectancy (PE)**

According to Venkatesh et al (2003), the word "performance Expectancy" refers to the degree to which a user of any information system thinks that their performance will increase as a result of using that information system. This definition was derived from the study that was conducted by Venkatesh and his colleagues. According to the findings of a body of research carried out by Lakhali et al. (2013), performance expectations are the single most critical factor in influencing a person's behavioural intention to make use of information systems. This is backed by a variety of data that comes from diverse sources. "According to Anthony et al. 2021, in general, once consumers of any newly introduced technology appreciate the advantages of any introduced technology in the form of enhanced performance, they are more willing to continue using that technology. This is the case with consumers of any newly introduced technology. In the context of mobile learning, the application of performance expectation shows the extent to which students believe that the adoption of m-LMS would enhance their learning performance and productivity (Mtebe & Raisamo, 2014). Performance expectation measures how students feel the adoption of m-LMS would raise their learning performance and productivity. The term performance expectancy refers to the degree to which students have the conviction that the implementation of m-LMS would improve both their learning performance and their overall productivity".

#### **3.2 Effort expectancy (EF)**

According to Venkatesh et al. (2003), the concept of "effort expectancy" refers to the ease with which users are able to operate a certain information system. According to Wu et al. (2008), one of the most crucial variables in deciding whether or not a certain information technology will be effectively accepted and exploited is the degree to which it is simple to use. In the context of mobile learning, the phrase "effort expectancy" refers to the students' preconceived view that employing the mobile learning will be straightforward and almost undemanding of their time. This notion was formed before the students began utilising mobile learning. In addition, students in developing nations have limited access to educational information systems (Ssekakubo et al. 2011). Because of this, the amount of work that is expected from students is an essential factor in the implementation and utilisation of mobile learning.

According to the findings of the research carried out by Wang et al. (2009), the first step that students need to do in order for them to accept and make use of m-LMS is for them to acknowledge the simplicity and ease of operation of the system.

### **3.3 Lecturers' influence (LI)**

The idea of social effect that was presented in the UTAUT model was utilised as the foundation for the creation of this construct. According to Venkatesh et al. (2003), "the latter construct defines the extent to which an individual believes it is vital to take" into consideration the opinions of others when determining whether or not to adopt a certain information system. In other words, it describes how important an individual considers it to take into account the perspectives of others when making a decision. Research conducted on the subject of technology adoption found that social influence is a significant component in affecting a person's behavioural intention to adopt a new system (Anthony et al. 2021). This finding was supported by the findings of the study cited above. People are influenced in one of two ways, according to the research of Igbaria et al. (1994): by their peers or by their superiors. Throughout the duration of this investigation, we will concentrate solely on the concept of "superior influence," which refers to the impact that is had by teachers and professors. The influence that the lecturers have on the students may be described as the amount of help and encouragement that "students receive from their direct instructors in order to accept and make use of the mobile learning management system (m-LMS). (2013) According to Abu-Al-Aish and Love According to the findings of a previous study, superior influence has a significant effect on individuals' perceptions of newly developed technologies".

### **3.4 Facilitating conditions (FC)**

According to Gawande (2016), the term "facilitating conditions" refers to the degree to which users of an information system have the sense that the organisational and technological infrastructure essential to facilitate the use of such technology already exists. This infrastructure is required in order to make such technology usable. According to Lakhali et al. (2013), it is crucial for users to have the peace of mind that there are adequate resources accessible to be exploited when necessary while employing the system. This is because it is essential for users to have the peace of mind that there are sufficient resources available. Support and tools available over the internet are some examples of these resources. "Therefore, in the context of mobile learning, universities and other institutions of higher education should give students a workable support mechanism that delivers a smooth user experience while employing a mobile learning technology system (Demian, 2015; Anthony et al. 2021). This recommendation was made by Anthony et al. This highlights the relevance of enabling conditions as a main factor in determining a person's tendency to utilise a mobile learning management system (m-LMS), as stated by Tarhini et al. (2017)".

### **3.5 Perceived mobile value (PMV)**

According to Kakihara and Sorensen (2001), the most major advantage of mobile technology is that it provides users with mobility not only in terms of space but also in terms of time and context. This is the most significant benefit of mobile technology. Pervasive technologies are those that can be used at any time and in any location, and as a result, they have a significant impact on the ways in which people live their lives today. According to Saroia and Gao (2019), m-learning technology is not an oddity, and its mobile nature is increasingly viewed as a key benefit for students. In addition, m-learning technology has been increasingly popular in recent years. For this reason, in the context of this study, PMV

demonstrates the understanding that students have of the possible advantages and benefits that may be brought about by mobile learning technology. When students have a good impression of the importance of mobility, it is also hypothesised that this is reflected in the expectations they have for their own performance. This would be the case if the mobility perception hypothesis were true.

### **3.6 "Academic relevance (AR)"**

Users of an information system have a tendency to evaluate the usefulness of the system, at least in part, based on how effectively it is able to satisfy the users' criteria and requirements. This is because users have certain expectations that the system should be able to meet. It is possible, at the very least in part, to trace back these expectations to the degree to which the services supplied by the system are applicable to the actual vocations of the users. According to this, the concept of "academic relevance is analogous to the construction of work relevance in extended TAM (Venkatesh & Davis, 2000), in addition to the concept of compatibility in DOI (Rogers, 1995). Both of these concepts point to the extent to which the target system is suitable for the activities carried out by the potential user and the needs that they have".

Relevance to the field of study The primary objective of this research is to determine the extent to which mobile learning management systems are applicable to higher education in general. In addition, researchers found "that AR is significant in terms of users' perceived usefulness, which in turn impacts actual usage of an online learning management system (Venter et al. 2012; Saroia & Gao, 2019)". These findings were published in the academic journals Venter et al. These findings were reported in two different investigations that were conducted independently. According to the hypothesis, the degree of performance that students believe they are capable of obtaining is directly proportional to their perception of the value of augmented reality (AR).

### **3.7 University management support (UMS)**

According to Saroia and Gao (2019), management support in general is a reflection of the degree to which users of an information system receive assistance from the management of the system provider in order to offer them with a pleasant experience while using the system. This assistance is intended to provide users with a satisfying experience while they are using the system. As a consequence of this, the component's impact on users' intentions to make use of the system is likely to take place. According to the findings of this particular research project, the term "University management support" is defined as the commitment of a higher educational institution to provide services for mobile learning that are optimal, current, and robust (McGill et al. 2014). According to Barker et al. (2005), the technological infrastructure needed for m-learning has to be managed by dedicated workers whose major responsibility it is to provide fast and professional help to students when they are utilising the m-learning service. Because of this, there will be a greater chance that mobile learning will be adopted and utilised. In addition, it has been "proposed that when students perceive the value of UMS, it reflects on both their perceived performance expectancy and their perceived effort expectancy. This is the case regardless of whether or not the students are using the UMS".

## **IV. CONCLUSION**

As a result of recent advancements in technology, educational institutions at the postsecondary level are now in a position to embrace innovative pedagogical practises and incorporate them into their entire curriculum. These developments in technology have shown themselves in the form "of mobile learning management systems (m-LMSs), which are online learning environments that host a large portion of the whole learning process and provide a number of innovative services to both students and instructors".

The vast majority of educational establishments, including universities and other educational

organisations, are conscious of the relevance of incorporating connected new platforms into their day-to-day educational operations. These establishments include educational organisations. This is because of the lightning-fast pace at which new technologies are developed in our modern world. According to El-Hussein and Cronje (2010), anyone who owns a portable device and access to the Internet is able to incorporate m-learning into their more conventional methods of acquiring knowledge. Because of the capabilities of the many communication technologies that are readily available, this is now conceivable. According to Naciri et al. 2020, m-learning technologies, such as m-LMS, allow personalization for both students and teachers, in addition to offering a variety of learning methods that are reliant on the choices of the individual learner. The environment created by m-learning technology is one that is engaging, interactive, and customised to match the needs of each specific student.

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