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Serbian Journal of Management 19 (2) (2024) xxx- xxx

Serbian Journal of Management

EDUCATORS' LEARNING EXPERIENCES AND INTENTION TO USE ONLINE LEARNING MANAGEMENT SYSTEMS' PLATFORMS: A PERCEPTUAL STUDY

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(Received 21 August 2023; accepted 25 March 2024)

Abstract

This study examines the adoption and use of Online Learning Management Systems (OLMS) in central government universities in India, emphasizing the impact of instructors' previous online learning experiences. To accomplish this, we employed the Technology Acceptance Model as the theoretical foundation, expanding its scope to encompass external factors and perceived variables related to O-LMS adoption. We investigate OLMS adoption patterns, platform preferences, and the impact of ownership status on technological integration using survey data obtained from faculty members at the top ten central government universities. Through a rigorous survey conducted among 326 faculty respondents from esteemed institutions and universities, we delved into their experiences, challenges, and perceived benefits associated with O-LMS utilization. Our data show that Moodle is the most widely used OLMS platform, with 85% of surveyed universities using this open-source system. Furthermore, we identify the important impact that educators' prior online learning experiences have in molding their opinions of OLMS, emphasizing the need for extensive training and continuous support programs. Furthermore, our findings highlight the need for further research to investigate the efficacy of various OLMS platforms, longitudinal studies to track the long-term effects of adoption, and qualitative investigations into educators' perspectives and experiences. By focusing on these research directions, stakeholders can improve technology integration in educational settings, resulting in more effective and inclusive learning environments.

Keywords: O-LMS, TAM, perceived online learning experience

1. INTRODUCTION

Learning is how individuals acquire fresh knowledge and skills, expanding their capabilities. The effectiveness of the learning process is gauged primarily by evaluating performance and learning outcomes, serving as critical indicators of the extent to which

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DOI: 10.5937/sjm19-45512

individuals have successfully acquired and applied new knowledge and abilities (Eom, 2014). With the introduction of increasingly advanced technology, the educational landscape of the nation has transformed, shifting from conventional learning approaches to more tech-savvy and internet-driven learning styles within the learning community (Simanullang & Rajagukguk, 2020). This transition can be seen as an outcome of the distant and virtual mode of education, which gained recognition during the COVID-19 pandemic and was only possible due to the pervasiveness of the Internet (Chen & Almunawar, 2021). Educators, professors, students, parents, and individuals with diverse educational backgrounds and proficiency levels collaboratively joined forces from various locations. Their collective effort aimed to ensure minimal disruption and loss in the academic curriculum for students and children (Yadav et al., 2024).

It took no time for learning management systems to evolve and function in a completely virtual environment to satisfy the common learning goal (Sulaiman, 2024). In the contemporary educational landscape, the infusion of technology and the widespread availability of Internet facilities have become deeply ingrained and integral aspects of the learning environment. This integration goes beyond mere inclusion, representing a fundamental transformation in how education is accessed, delivered, and experienced. Students, educators, and institutions navigate an educational ecosystem where technology and the Internet are pivotal in facilitating a dynamic and enriched learning process (Gómez-Ramirez et al., 2019). The seamless incorporation of these technological tools has not only expanded the horizons of educational resources. However, it has also revolutionized the methodologies, fostering innovation and adaptability in pursuing knowledge (Xu & Mahenthiran, 2016). As we navigate this educational paradigm, the collaborative engagement of various stakeholders ensures a comprehensive and inclusive approach, catering to the diverse needs and preferences of learners across different educational backgrounds and proficiency levels (Hanif et al., 2018). As more and more institutions incorporate information technology into their academia, researchers are showing keen interest in investigating the actual usage, issues, and challenges faced in a technology-integrated education system (Yang & Su, 2017).

Even though the traditional classroom learning system is still the norm, irrespective of its restriction on time, space, and class size, the existence and penetration of O-LMS into society cannot be overlooked. Drawing on Davis and Venkatesh's (1996) Technology acceptance model as the theoretical background, this study constructs a conceptual framework for Online Learning Management Systems (O-LMS) from the perspective of educators and faculty across India. The Technology Acceptance Model was adopted to examine the connections between perceived ease of use, perceived usefulness, attitude, and actual intention to use O-LMS (Rauniar et al., 2014). We have included other external factors, such as a perceived online learning experience (POLE), that may affect the intention to use O-LMS to construct our hypothesized model. We also discussed the causal relationships between these factors to portray real-world phenomena. Therefore, this study aimed to evaluate how university educators' use of an online learning management system (O-LMS) worked. The research

questions guiding the study are as follows:

RQ1. How do university educators' experiences with online learning predict their perceptions of the ease of use, usefulness, and attitude toward using O-LMS?

RQ2. How do university educators' attitudes on using O-LMS depend on how easy and useful it is?

RQ3. How can university educators' perceived usefulness, ease of use, and attitude indicate their likelihood of adopting an O-LMS?

This research addresses the evolving landscape of online education and its implications for teaching and learning in a digital age, shedding light on the dynamics between educators and technology. It aims to provide a fresh perspective on the adoption and effectiveness of O-LMS in online university teaching, contributing valuable insights to academia and practitioners seeking to enhance the teaching-learning process using technology. By examining the intricate relationships among these factors, this study offers a novel perspective on O-LMS adoption, enriching the discourse on technology-integrated education and fostering continuous improvement in teaching-learning.

2. THEORETICAL BACKGROUND

Online Learning Management Systems (O-LMS) have evolved as a pivotal component of modern education, transforming teaching and learning (Judge & Murray, 2017). We draw upon relevant and recent theoretical constructs grounded in contemporary scientific literature to delve into O-LMS's perceptions, attitudes, and adoption. Nearly all higher education institutions consider the learning management system (LMS) a crucial tool and a key component of online learning (Irfandi et al., 2023). The learning process is strengthened by Learning Management Systems (LMS) in virtual classroom settings (Duin & Tham, 2020). With intervening structures that encourage online collaborative groupings, professional training, discussions, and communication among other LMS users, a typical LMS supports an inclusive learning environment for academic progress. The instructor should balance using technological LMS resources, active learning, and qualified curriculum standards. An LMS enables instructors to plan online activities, facilitate and model discussions, establish learning goals, give learners options, and support decision-making processes through problem-solving (Sejzi & Aris, 2013). Including an instructor within a Learning Management System (LMS) is of utmost importance in fostering an engaging learning atmosphere in online education. Incorporating technology, specifically through Learning Management System (LMS) platforms like Blackboard or Moodle, plays a fundamental role in disseminating educational materials and facilitating engaging learning encounters. Although Blackboard and Moodle share certain functionalities, they also possess unique characteristics that set them apart. The Blackboard Learning System enables instructors to effectively distribute course information, materials, readings, and tasks while providing essential tools for engaging in conversations and collaborative activities. In contrast, Moodle is a course management system (CMS) that is both free and Open-Source. It places a strong emphasis on incorporating pedagogical principles to support educators in creating online learning communities that are both engaging and

effective. Moodle facilitates an environment that promotes active learning and facilitates meaningful interactions among participants, thereby enhancing the overall online learning experience, owing to its flexible framework. Therefore, it is imperative to comprehend the intricacies and capabilities of these Learning Management System (LMS) platforms in the realm of online education in order to enhance instructional methodologies and foster student involvement and achievement.

2.1. Technology Acceptance Model (TAM)

Davis proposed that the Technology Acceptance Model (TAM) for information technology might be employed in a business environment based on the empirical findings of TRA that behavior intention can alter the actual usage of technologies (Davis & Venkatesh, 1996). The TAM illustrates how people embrace a new technology system as an information system theory. A system's perceived utility and ease of use affect users' behavioral intentions and attitudes toward utilizing technology. External elements in TAM, such as system design features and computer self-efficacy, also affect perceived usefulness and ease of use. This procedure will later affect the technology's use (Rauniar et al., 2014).

Perceived ease of use in an educational situation that uses technology refers to the extent to which a learner believes that using the technology would not require much effort. If a learner believes that employing the technology would improve his or her learning performance, this is perceived usefulness. Early in TAM, the attitude toward employing a technology was a compromise between its intended use and perceived utility. However, later empirical studies (Rauniar et al., 2014; de Oliveira et al., 2018) showed that an attitude construct did not significantly mediate between the two variables. However, our research has once more focused on determining the connection between the identified external conditions and the intention to use.

The validity of TAM in gauging the adoption of information technology within an organization has been confirmed by empirical research (Lee & Lim, 2016). By incorporating new factors into the original model, researchers have attempted to broaden TAM (Winter et al., 2020). TAM has been widely used to explain how new technologies are adopted in a learning environment (Lu et al., 2010; Zhang, 2010). These models of acceptance of information technology do, however, have a drawback. This method ignores a crucial point: even after accepting a technology, a user's intention may change in response to the technology's user experience (Lim et al., 2018). To get around this restriction and determine whether or not a user's intention can be affected, the researcher set out to identify an external factor called POLE.

2.2. Perceived Online Learning Experience (POLE)

We should consider a user's perceived learning experiences with information and communication technologies (ICT) before discussing their online learning experiences. Users who have never used a computer might feel uneasy using computer-assisted learning. According to research, learners can perceive a new online curriculum differently depending on their prior online learning experiences (Altawalbeh, 2023). Researchers also discovered that learners' prior information technology user experience

will impact the usefulness of upcoming online learning activities (Gómez-Ramirez et al., 2019). Before engaging in online learning, learners may believe a new system is simple to use if they thoroughly understand how to operate it. As a result, they may spend less time exploring the new system.

Additionally, happier experiences can occasionally result in better future learning outcomes. This implies that learners perceive such a learning style as beneficial. According to the study Liu et al. (2010), students with prior online learning experience are more likely to be satisfied with and open to reusing related online learning activities.

In addition to TAM and POLE, it is imperative to integrate broader perception theories. Scholars such as Sentosa and Nik Mat (2012) and Gautreau (2011) have contributed to understanding how attitudes and intentions are formed based on beliefs and evaluations, which can be applied to the O-LMS context. By grounding our study in perception theories, we can explore the intricate relationships between perceived ease of use, perceived usefulness, attitude, and intention to use O-LMS. The inadequacy of sources and references has been rectified by incorporating these theories and constructs, which will serve as the theoretical underpinning for our research. These contemporary theories enable a more nuanced exploration of how educators' perceptions and attitudes shape their adoption of O-LMS (Wu & Chen, 2005). This reinvigorated theoretical background serves as the foundation for our hypotheses and the subsequent investigation into the adoption of O-LMS by online university educators.

3. DATA AND METHODOLOGY

3.1. Survey Procedures

Our objective was to garner a nuanced understanding of the perceptions and attitudes held by online university educators concerning Online Learning Management Systems (O-LMS). In pursuit of a comprehensive and representative sample, we undertook an extensive survey targeting faculty members from the top 10 central government universities spanning the geographical expanse of India. Employing a purposive sampling method, we gathered insights from assistant professors, associate professors, and professors, considering their accessibility and willingness to participate actively in the online survey. This approach aimed to ensure a balanced representation across different academic ranks, contributing to a more holistic portrayal of the diverse perspectives within the online education community. They were given a structured online questionnaire, and the research was done between November 2022 and February 2023. 326 (83.59%) of the 390 questionnaires that were collected were fully completed, excluding outliers and missing responses, and were therefore appropriate for further study. Figure 1 shows the conceptual model that has been proposed to link the objectives of the study. Moreover, a comprehensive overview of the demographic characteristics of India's top 10 central government universities offers insights into different facets of their academic and technological environment. The universities above encompass esteemed establishments such as the University of Delhi, Banaras Hindu University, and Jawaharlal Nehru University, strategically located in prominent urban centers such as New Delhi, Varanasi,

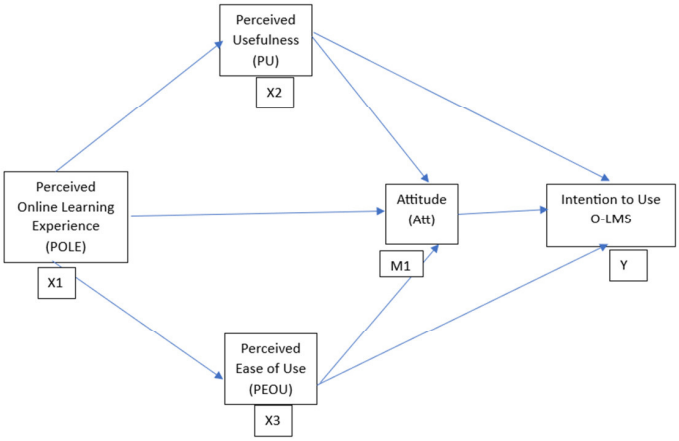

Figure 1. Proposed Conceptual Online Learning Management System (O-LMS) Model (Source: the authors)

Hyderabad, and Chennai. These institutions are categorized as public and provide various academic programs, including Engineering, Medicine, Arts, and Science. They also offer undergraduate, graduate, and doctoral programs. This study's sample population has been allocated to ensure a balanced representation across various academic ranks. Specifically, 40% of the participants are Assistant Professors, while 30% each are Associate Professors and Professors. This approach aims to provide a comprehensive portrayal of perspectives within the sample. Moodle is the most widely used learning management system (LMS) platform in academic settings, and 85% of the universities surveyed use it. This indicates that Moodle is widely adopted and prevalent in technological infrastructure. Furthermore, Blackboard has a significant presence, utilized by 8% of the universities surveyed, suggesting a diverse technological environment including MS Office, Google Tools, and possibly other platforms. Table 1 offers significant insights into the academic and technological attributes of central government universities in India, enhancing comprehension of their educational environment.

3.2. Research Hypotheses

In this study, the Technology Acceptance Model (TAM) served as the foundational framework, extended by the inclusion of an external factor termed perceived online learning experience, to comprehensively explore the factors influencing online university educators' acceptance and perception of online teaching through an online learning management system (O-LMS) (Ajibade, 2019). A hypothetical model was devised based on the existing literature, formulating the following hypotheses.

The complex dynamics of online learning environments and educators' perceptions have been studied extensively. Liu et al. (2010) Address online learning motivation, emphasizing how positive platform experiences boost perceived usefulness. In Alqurashi's (2019) study on student satisfaction in online learning environments, educators can learn that positive experiences make such systems seem more practical. These studies confirm that educators' perceptions of online learning experiences with O-LMS predict their perceived usefulness, providing a comprehensive understanding of educators and online

Table 1. Demographic Landscape of Top Central Government Universities in India

Variables/Key Aspects	Frequency
Total HEIs Surveyed	Top 10 central government universities in India
Higher Education Institutions (HEIs) with geographical locations	University of Delhi (New Delhi), Banaras Hindu University (Varanasi), University of Hyderabad (Hyderabad), Jawaharlal Nehru University (New Delhi), Aligarh Muslim University (Aligarh), Jamia Millia Islamia (New Delhi), University of Madras (Chennai), University of Mumbai (Mumbai), University of Calcutta (Kolkata), University of Allahabad (Prayagraj)
Classification by Ownership	Public HEIs: Central government universities
Program Offerings	Fields of Study: Varied disciplines offered. Example: Engineering, Medicine, Arts, Science Levels of Education: Undergraduate, graduate, and doctoral programs offered across surveyed universities.
Allocation of Sample	Assistant Professors: 58% of total sample (188 out of 326) Associate Professors: 17% of total sample (57 out of 326) Professors: 25% of total sample (81 out of 326)
LMS Platform Used	Moodle: Open-source LMS commonly used in academic institutions Blackboard: Popular commercial LMS MS Office: Suite of productivity tools including Word, Excel, PowerPoint, etc Google Tools: Suite of productivity tools including Google Docs, Sheets, Slides, etc. Other: Specify if using different LMS or tools
Most Used Tools	Moodle(85% of the surveyed universities) and Blackboard(8% of the surveyed universities) were the most commonly used LMS platforms among surveyed universities.

learning platforms, thus fostering the formation of the following hypothesis:

H1a: Educators perceived online learning experience of O-LMS predicts their perceived usefulness.

Research in technology acceptance and online learning has consistently demonstrated the interconnectedness of user experience and ease of use. For example, Venkatesh and Bala (2008) emphasize the importance of perceived ease of use as a critical factor influencing technology adoption. Studies exploring educators' experiences with online learning platforms, such as those conducted by Tallent-Runnels et al. (2006), consistently highlight the correlation between positive learning experiences and perceived ease of use. Additionally, the Technology Acceptance Model (TAM) literature, particularly the foundational work Davis and Venkatesh (1996), establishes a theoretical framework that aligns with H2a, positing that users are more likely to perceive a system as easy to use if they have positive experiences. Thus, the literature provides robust support for the following hypothesis:

H2a: Educators perceived online learning experience of O-LMS predicts their perceived ease of use.

Studies such as Davis and Venkatesh's (1996) the Technology Acceptance Model (TAM) propose that users' perceptions of a system, including their experiences,

significantly influence their attitudes toward that technology. Positive experiences with online learning systems have been consistently linked to favorable attitudes among educators (Alqurashi, 2019)—the work of Ajzen (1985) the Theory of Reasoned Action and its later extension, the Theory of Planned Behavior, also supports the idea that experiences play a pivotal role in shaping attitudes. Moreover, research Legris et al. (2003) emphasizes the connection between user experience and attitude, suggesting that a positive experience with technology contributes to a more favorable overall attitude. When applied to educators' experiences with O-LMS, this literature provides a robust foundation for the following hypothesis: positive perceptions of the online learning experience predict a positive attitude toward the system.

H3a: Educators perceived online learning experience of O-LMS predicts their attitude.

The TAM, as introduced by Davis and Venkatesh (1996), posits that perceived usefulness directly influences users' intention to use a technology. However, studies have also explored the mediating role of perceived usefulness in the relationship between other variables. For instance, in online learning, research by Alqurashi (2019) suggests that perceived usefulness mediates the impact of certain factors on users' intentions to adopt online learning platforms. Additionally, the work by Venkatesh and Bala (2008) on the Unified Theory of Acceptance and Use of Technology (UTAUT) provides a broader perspective on the mediating role of perceived usefulness in technology acceptance. According to UTAUT, perceived usefulness mediates the relationship between external variables, such as the user's experience and behavioral intention to use a technology. Therefore, the literature supports the following hypothesis by indicating that educators' perceived online learning experience may influence their intention to use O-LMS through the mediating pathway of perceived usefulness:

H4a: Educators' perceived usefulness mediates the relationship between their perceived online learning experience and their intention to use O-LMS.

The Unified Theory of Acceptance and Use of Technology (UTAUT) given by Venkatesh et al. (2003) also supports the idea that perceived ease of use can mediate the relationship between users' experiences and their intention to use technology. In the context of online learning, research by Alqurashi (2019), and Tallent-Runnels et al. (2006) suggests that positive online learning experiences contribute to a higher perception of ease of use, influencing users' intention to adopt online learning platforms. Therefore, the literature strongly supports the below hypothesis, indicating that educators' perceived online learning experience may influence their intention to use O-LMS through the mediating pathway of perceived ease of use:

H5a: Educators' perceived ease of use mediates the relationship between their perceived online learning experience and their intention to use O-LMS.

The Technology Acceptance Model (TAM) posits that users' attitude toward a technology significantly influences their intention to use it (Davis, 1989).

Additionally, research within the TAM framework has explored the mediating role of attitude in the relationship between various antecedents and users' behavioral intentions. In the context of online learning, studies by Alqurashi (2019) and Tallent-Runnels et al. (2006) support the idea that positive online learning experiences contribute to a more favorable attitude, which, in turn, influences users' intention to adopt online learning platforms. Therefore, the literature strongly supports the subsequent hypothesis, indicating that educators' perceived online learning experience may influence their intention to use O-LMS through the mediating pathway of attitude.

H6a: The attitude of educators mediates the relationship between educators' perceived online learning experience and their intention to use O-LMS.

These hypotheses were formulated to capture the complex interplay between online university educators' experiences with O-LMS, their perceptions of usefulness and ease of use, their overall attitude toward the system, and their intention to adopt and use the technology in the context of online teaching. By investigating these relationships, the study aimed to offer a nuanced understanding of the factors influencing the acceptance and adoption of O-LMS among online university educators.

3.3. Participants' Description

The study included 326 educators in total. The sample included 50.3% male and 49.7% female participants, highlighting the sample's gender balance. The respondents' average age ranged from 30 to 40 (Table 2). Even though the questionnaire was distributed unbiasedly, ignoring this criterion, the response revealed that the acceptance rate of O-LMS among young educators designated as assistant professors is higher, as well as highlights their readiness to embrace impending new technology, by

Table 2. Demographic Description of the Respondents (Source: authors' compilation)

Variables	Category	Frequency	%
Gender	Male	164	50.3
	Female	162	49.7
Age (in years)	<30	23	7.1
	30-40	155	47.5
	40-50	96	29.4
	>50	52	16.0
Education	Graduate	7	2.1
	Post-Graduate	107	32.8
	Doctorate	212	65.0
Designation	Assistant Professor	188	57.7
	Associate Professor	57	17.5
	Professor	81	24.8
Teaching Experience (in years)	<5	72	22.1
	5 to 10	106	32.5
	10 to 15	82	25.2
	>15	66	20.2
Experience in using online platforms for teaching-related activities	One-time user	55	16.9
	Constant user	271	83.1

the majority of them being a constant user of online platforms for teaching-related activities.

3.4. Instrument Used and Measurement Scales

A thorough literature review revealed critical information about the various metrics commonly used in studies on technology acceptance intentions and actual user behavior. Table 3 explains how adapted and modified versions of previously validated measures were used. Items from previous studies were modified to meet the needs of the current study. Responses were recorded on a 7-point Likert scale ranging from 'strongly disagree' to 'strongly agree,' with one denoting 'strongly disagree' and seven denoting 'strongly agree. SPSS was used to perform a descriptive analysis of the responses to ensure the data was normal. This study's measurement and structural models were analyzed using partial least squares-structural equation modeling (PLS-SEM).

4. ANALYSIS AND FINDINGS

4.1. Preliminary Analysis

The method described by Voorhees et al. (2016) investigated standard method variance (CMV). They argued that the presence of variance inflation factors greater

Table 3. The adopted/modified scale was used in the study (Source: the authors)

Constructs	Items	Adopted/Modified Scales
Perceived online learning experience (POLE)	3	Liu et al., 2009
Perceived usefulness (PU)	4	Davis & Venkatesh, 1996, 2000
Perceived ease of use (PEOU)	4	Davis & Venkatesh, 1996, 2000
Attitude (Att)	4	Bhattacherjee, 2000
Intention (Int)	3	Davis & Venkatesh, 1996, 2000

Table 4. Results of Exploratory Factor Analysis (Source: the authors)

	Items Description	Factor loadings	VIF
POLE1	I feel it would be easier to operate the system if I had previous experience using it	0.861	1.898
POLE2	I will have a better understanding of how to use the system if it has a function for online guidance	0.854	1.824
POLE3	I will have a better understanding of how to use the system if a teacher or peer operates it first	0.859	1.798
PU1	I could improve my teaching performance by using this system	0.799	1.461
PU3	I could enhance my language learning proficiency by using this system.	0.862	1.744
PU4	I think using this system helps me teach	0.835	1.729
PEOU1	My interaction with the LMS is clear and understandable	0.713	1.4
PEOU2	Interaction with the LMS does not require much mental effort.	0.83	1.796
PEOU3	Getting the LMS to do what I want it to is easy.	0.874	2.731
PEOU4	It is easy to use the LMS.	0.853	2.572
ATT1	Using LMS for conducting online classes is a good idea.	0.816	1.902
ATT2	Using LMS for teaching is a wise idea.	0.862	2.405
ATT3	I like the idea of using LMS for teaching.	0.88	2.625
ATT4	Using LMS for teaching is a pleasant experience.	0.842	1.967
INT1	Assuming I have access to the LMS, I intend to use it.	0.83	1.512
INT2	Given that I can access the LMS, I predict I will use it.	0.863	1.715
INT3	If I have access to the LMS, I want to use it as much as possible.	0.749	1.405

Note: VIF-Variance inflation factor.

than 3.3 indicates that the model has CMV and collinearity. However, because the model in this study is free of CMV, all factor-level variance inflation factors resulting from the entire collinearity test are less than the specified threshold of 3.3 (see Table 4). As a result, CMV is not an issue in this study. The KMO rating is 0.824, which is satisfactory. Also, with a p-value of.000, Bartlett's Test of Sphericity is significant (Braeken & Van Assen, 2017). For our interpretation, we considered all factors with eigenvalues bigger than 0.70.

4.2. Confirmatory Factor Analysis

The PLS indicator loading analyses of the five components all yielded results greater than 0.7, which is recommended (Hair et al., 2019). As a result, it gives adequate indicator reliability because these variables show that the concept accounts for more than half of the fluctuation or more than 50% of the indication. In the second stage, the composite reliability is evaluated, which validates the internal consistency reliability. Table 5 displays the results of the PLS composite reliability evaluations for the components of POLE, PEOU, ATT, and INT. Composite reliability scores of 0.60 to 0.70 are considered adequate in exploratory research, whereas values of 0.70 to 0.90 are considered good. Composite reliability scores of 0.95 and higher, on the other hand, indicate the likelihood of unfavorable response patterns and significant correlations across the sustainability metrics. In our study, all composite reliability scores ranged between 0.856 and 0.913, showing that the variables employed to identify entrepreneurial qualities were internally reliable. The AVE values, also known as the measure's convergent validity, are used to examine a measurement's validity, indicating whether or not an instrument is accurately measuring (Hair et al., 2019).

To put it another way, a concept's convergent validity is the extent to which it converges to explain the variance of its constituents. Table 5 also provides the results of the PLS validity study for the five components. An AVE score of 0.50 or above suggests that the construct explains at least 50% of the variation among its elements (Hair et al., 2013).

The AVE values for all five constructs in our investigation were more than 0.50, indicating that the variables describing the entrepreneurial features are convergent. The next step in validating the validity of a measurement is to assess its discriminant validity, or how different a concept is empirically from other constructs in the structural model (Fornell & Larcker, 1981). The discriminant validity of each concept can be calculated by taking the square root of the AVE and comparing it to the correlation coefficients of the other constructs.

Table 5. Result of Reliability, Convergent Validity, and Discriminant Validity (Source: the authors)

	Cronbach's Alpha	rho_A	Composite Reliability	AVE	ATT	INT	PEOU	POLE	PU
ATT	0.872	0.874	0.913	0.723	0.85				
INT	0.748	0.763	0.856	0.665	0.774	0.815			
PEOU	0.835	0.841	0.891	0.672	0.744	0.707	0.82		
POLE	0.821	0.822	0.893	0.736	0.477	0.495	0.549	0.858	
PU	0.778	0.783	0.871	0.693	0.487	0.546	0.64	0.664	0.832

Note: AVE -Average variance extracted

4.3. Structural Model Assessment (Path Analysis)

The next stage in the PLS-SEM analysis is to estimate the structural model coefficients after confirming the reliability and validity of the variables in the measurement model. The coefficients of the multiple regression equations are generated to comprehend the link between the components in the structural model. Figure 2 depicts the structural model's results for an intention to use O-LMS. The bootstrapping approach (resample n=5,000) is utilized to test the hypotheses in the structural model. It quantifies the significance of the path coefficients and evaluates their confidence ranges, eliminating errors in estimating the nonparametric distribution (Wong et al., 2012). Figure 2 depicts the regression coefficients for each path for one such bootstrap sample. We also looked at the coefficient of determination, or R^2 value, for each regression equation in the structural equation model.

The R^2 values quantify the variance in the endogenous constructs explained by the explanatory variables. Thus, they measure the model's explanatory power, also known as in-sample predictive power (Hair et al., 2019). The allowed R^2 values depend on the situation (see Table 6), and in the PLS-SEM analysis, even low R^2 values are okay (Ketchen, 2013). The PLS structural model for the intention to use O-LMS found three significant direct and three significant indirect effects at a 5% significance level. These are shown in Table 7.

The alternative hypothesis (H1) was properly supported (beta=0.828, p-value=.00), showing that how teachers see O-LMS's usefulness is related to how they

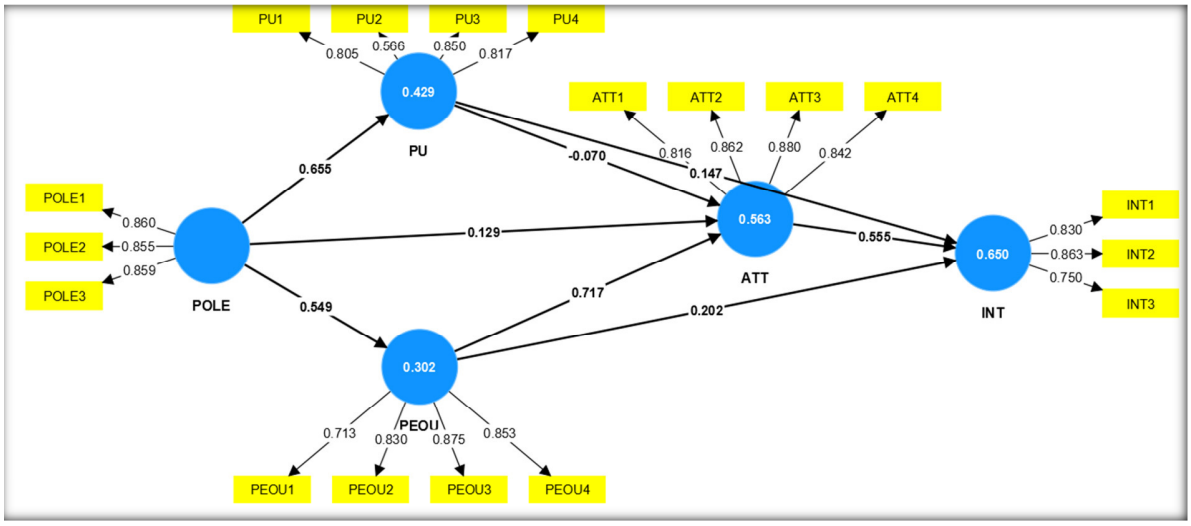

Figure 2. The structural model of the study (Source: authors' compilation)

Table 6. R^2 Computation (Source: the authors)

	Original sample (O)	Sample mean (M)	Bias	2.50%	97.50%
ATT	0.561	0.567	0.006	0.46	0.643
INT	0.651	0.656	0.005	0.565	0.708
PEOU	0.301	0.304	0.002	0.214	0.386
PU	0.441	0.444	0.002	0.341	0.533

see their own online learning experience with them. The alternative hypothesis (H2) was also supported (beta=0.66, p-value=.00), which means that how teachers see the online learning experience of O-LMS affects how they see how easy it is to use. The third alternative hypothesis (H3) was also supported (beta=0.563, p-value=.00), indicating that educators' perceived online learning experience of O-LMS positively predicts their attitude.

The analysis also revealed three indirect effects (mediation) between the constructs, which was supported by a p-value of .05 and t-statistics greater than 1.65, implying that perceived usefulness, perceived ease of use, and attitude plays a mediating role in imagining the relationship between perceived online learning experience and intention to use O-LMS.

While there are numerous methods for assessing mediators, the variance accounted for (VAF) value for the components reflects the strength of mediation (Faisal et al., 2021). No mediation was observed for the construct PU, and partial mediation was observed for PEOU and ATT (Sarstedt et al., 2014). The VAF value in Table 8 is calculated to be 0.19, 0.23, and 0.53, respectively, indicating a partial mediating effect between pole and intention.

Table 7. Overall Results of Hypothesis Testing (Direct and Mediating Effect) (Source: the authors)

	Hypothesis	Type of Effect	Original Sample	Sample Mean	Standard Deviation	t-statistics	p-value	Supported
H1	POLE -> PU	Direct	0.828	0.828	0.045	18.542	0	Yes
H2	POLE -> PEOU	Direct	0.66	0.661	0.047	14.116	0	Yes
H3	POLE -> ATT	Direct	0.563	0.565	0.057	9.907	0	Yes
H4	POLE -> PU -> INT	Indirect	0.083	0.082	0.037	2.25	0.025	Yes
H5	POLE -> PEOU -> INT	Indirect	0.107	0.107	0.042	2.537	0.011	Yes
H6	POLE -> ATT -> INT	Indirect	0.39	0.391	0.059	6.604	0	Yes

Table 8. Variance Accounted For (VAF) Computation for mediating variables PU, PEOU, and ATT (Source: the authors)

Variance Accounted For (VAF) Computation: PU	
Direct Effect	0.352
Indirect effect	0.083
Total effect (DE+IDE)	0.435
VAF (Indirect effect/Total effect)	0.190804598
Result	No Mediation
Variance Accounted For (VAF) Computation: PEOU	
Direct Effect	0.352
Indirect effect	0.107
Total effect (DE+IDE)	0.459
VAF (Indirect effect/Total effect)	0.233115468
Result	Partial Mediation
Variance Accounted For (VAF) Computation: ATT	
Direct Effect	0.352
Indirect effect	0.39
Total effect (DE+IDE)	0.742
VAF (Indirect effect/Total effect)	0.525606469
Result	Partial Mediation

5. DISCUSSION

The objective of our research was to investigate the functionality and importance of Learning Management Systems (LMS) in the context of online education, specifically examining platforms such as Moodle, Blackboard, MS Office, Google Tools, and other similar tools. The reliability and validity of our constructs were established through a rigorous analysis, which ensured the absence of Common Method Variance (CMV) and collinearity. The dataset's suitability for factor analysis was confirmed by a satisfactory Kaiser-Meyer-Olkin (KMO) rating and a significant Bartlett's Test of Sphericity. A model was examined to assess the predictive ability of faculty members to adopt and utilize Online Learning Management Systems (O-LMS). The results indicated that factors such as perceived online learning experience, perceived ease of use, and attitude have a significant impact on faculty members' propensity to utilize O-LMS. Nevertheless, there were less pronounced positive associations observed between perceived usefulness and both perceived online learning experience and intention to use O-LMS. Our research indicates that users are more inclined to adopt O-LMS when they perceive them as user-friendly, irrespective of their perceived utility.

The present study corroborated the primary outcomes of prior research, wherein faculty members conveyed a general sense of contentment regarding the utilization of online platforms for instructional purposes. Individuals who had previous experience with online learning demonstrated a greater inclination to interact with O-LMS, underscoring the significance of familiarity in promoting acceptance. In summary, our research highlights the substantial influence of Learning Management System (LMS) choice on pedagogical approaches and student involvement in virtual educational settings. Moodle has emerged as the predominant Learning Management System (LMS), signifying its extensive adoption and efficacy in facilitating online educational settings. Nevertheless, the selection of a Learning Management System (LMS) can impact the results of instructional models and learning experiences, underscoring the necessity for additional research on the impact of particular O-LMS on effectiveness. In order to enhance student success and optimize online learning experiences, educators and institutions can make informed decisions by acquiring a more profound comprehension of these dynamics.

6. CONCLUSION

Our research on perception contributes substantially to the current conversation over the use of technology in the classroom. By investigating the significant influence that educators' prior experiences with online learning had on their perceptions of Online Learning Management Systems (OLMS), we were able to shed light on important factors affecting the adoption of technology in the classroom. Using a thorough analysis, we highlight the significant impact that favorable experiences with online learning have on teachers' opinions of O-LMS systems. This influence is felt particularly in their opinions on utility, usability, and adoption attitudes.

The theoretical situations we discussed help clarify this phenomenon by showing how teachers' prior experiences influence

how they integrate O-LMS into their teaching strategies. These findings highlight the significance of well-thought-out interventions that maximize favorable experiences and minimize unfavorable ones, promoting a more seamless incorporation of technology in learning settings.

Furthermore, our research shows that Moodle is the O-LMS platform that colleges surveyed utilize the most frequently, demonstrating the platform's broad popularity and efficiency in promoting online learning. However, its ubiquity raises questions about how particular O-LMS platforms could affect learning experiences and instructional methods, calling for more study in this field. Also, although there were no discernible differences in the prediction model results between university ownership status and our analysis, more investigation is necessary to fully comprehend the complex relationship between ownership status and O-LMS adoption.

Our research contributes to the scholarly discourse on integrating technology in education by utilizing empirical evidence, sophisticated interpretations, and real-world experiences. By expanding on our knowledge of how educators' prior experiences influence their views on technology, we enable stakeholders to implement strategic interventions that promote inclusive and productive learning environments. In the end, this guarantees that technology acts as a catalyst for positive educational outcomes in the digital age.

6.1. Implications of the study

The study's implications are manifold. First, educators' prior online learning experiences have a significant impact on their perceptions of Online Learning Management Systems (O-LMS), emphasizing the importance of comprehensive training and support programs. Second, Moodle's dominance highlights the importance of platform selection and development, urging institutions to consider factors such as usability and compatibility. Third, educators' perceptions of O-LMS influence instructional design and pedagogy, emphasizing the importance of using platform features to create engaging learning experiences. Furthermore, policymakers and funding agencies play an important role in shaping technology adoption, necessitating ongoing investments in infrastructure and research. Finally, our findings pave the way for future research into the impact of specific O-LMS platforms on instructional models and learning outcomes, allowing for further investigation. Addressing these implications can result in a more effective and inclusive learning environment that uses technology to help students succeed.

6.2. Limitations of the study

Our study's focus on faculty members from central government universities in India may limit the applicability of our findings to other educational contexts or institutions. Furthermore, relying on self-reported data from survey responses may result in biases or inaccuracies. Furthermore, the study's cross-sectional design limits our ability to identify causal relationships between variables. Furthermore, while efforts were made to ensure a balanced representation of academic ranks, the sample size for each rank may not fully capture the diversity of perspectives among faculty members. Furthermore, the study did not investigate the specific factors influencing the selection

of O-LMS platforms or the efficacy of various instructional models. Future research could address these limitations by using longitudinal designs with a wider range of institutions and conducting qualitative interviews to understand educators' experiences and perceptions better.

6.3. Future Research Directions

Future research directions in Online Learning Management Systems (O-LMS) could include a variety of topics to help us better understand and apply best practices. Longitudinal studies are needed to track the long-term effects of O-LMS adoption on teaching practices, student engagement, and learning outcomes. Comparative analyses can show how different O-LMS platforms support various instructional models and learning environments, considering usability and customization options. Qualitative research methods, such as interviews and focus groups, can provide nuanced insights into educators' experiences, attitudes, and challenges with O-LMS adoption, providing valuable perspectives for successful implementation strategies. Furthermore, investigating the direct and indirect effects of O-LMS adoption on student learning outcomes, institutional factors influencing adoption strategies, and integrating emerging technologies with O-LMS platforms are critical areas of future research. Furthermore, cross-cultural studies can provide valuable insights into O-LMS adoption patterns, preferences, and challenges across various educational contexts, allowing for developing contextually relevant and culturally sensitive approaches to technology integration in education. By addressing these future research directions, scholars can advance knowledge in the field and contribute to improving online education practices.

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ИСКУСТВА ЕДУКАТОРА У УЧЕЊУ И НАМЕРА ДА КОРИСТЕ ПЛАТФОРМЕ СИСТЕМА ЗА УПРАВЉАЊЕ УЧЕЊЕМ НА МРЕЖИ: СТУДИЈА ПЕРЦЕПЦИЈЕ

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Извод

Ова студија испитује усвајање и употребу Система за управљање онлајн учењем (СУОУ) на државним универзитетима у Индији, наглашавајући утицај претходних искустава инструктора у онлајн учењу. Да бисмо ово постигли, користили смо модел прихватања технологије (МПТ) као теоријску основу, проширивши његов обим да обухвати спољне факторе и перципиране варијабле повезане са усвајањем СУОУ. Истражујемо обрасце усвајања СУОУ, преференције платформе и утицај статуса власништва на технолошку интеграцију користећи податке анкете добијене од чланова факултета на десет најбољих државних универзитета. Кроз ригорозну анкету спроведену међу 326 испитаника са факултета из цењених институција и универзитета, ушли смо у њихова искуства, изазове и уочене користи повезане са коришћењем СУОУ. Наши подаци показују да је Моодле најраспрострањенија СУОУ платформа, са 85% испитаних универзитета који користи овај систем отвореног кода. Штавише, идентификујемо важан утицај који претходна искуства едукатора на мрежи имају у обликовању њиховог мишљења о СУОУ, наглашавајући потребу за опсежном обуком и континуираним програмима подршке. Штавише, наши налази наглашавају потребу за даљим истраживањем како би се истражила ефикасност различитих СУОУ платформи, лонгитудиналним студијама за праћење дугорочних ефеката усвајања и квалитативним истраживањима перспектива и искустава наставника. Фокусирајући се на ове истраживачке правце, заинтересоване стране могу побољшати интеграцију технологије у образовним окружењима, што резултира ефикаснијим и инклузивнијим окружењима за учење.

Кључне речи: СУОУ, МПТ, перципирано искуство онлајн учења

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