

DETERMINANTS OF STUDENT ENGAGEMENT IN BLENDED LEARNING ENVIRONMENTS: THE RELATIVE INFLUENCE OF TECHNOLOGY ACCEPTANCE, LECTURER SUPPORT, AND MOTIVATION IN STRATEGIC MANAGEMENT EDUCATION

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Article history

Received date : 19-7-2026
Revised date : 20-7-2026
Accepted date : 19-8-2026
Published date : 26-8-2026

To cite this document:

Sa'ari, J. R., Hassian, U. K., Mohammad Faisal, N. M., Sadik, M. Z., & Abdul Rahim, F. (2026). Determinants of student engagement in blended learning environments: The relative influence of technology acceptance, lecturer support, and motivation in strategic management education. *International Journal of Accounting, Finance and Business (IJAFB)*, 11 (67), 548 - 575.

Abstract: Student engagement is a critical determinant of learning success in blended learning environments. However, existing research continues to produce inconsistent findings regarding the relative influence of technological, instructional, and psychological factors on engagement. This study examines the effects of perceived ease of use, perceived usefulness, lecturer support, and student motivation on student engagement among undergraduate Strategic Management students. A quantitative cross-sectional survey was conducted among 133 undergraduate students enrolled in Strategic Management courses at a Malaysian public university. Data were analysed using partial least squares structural equation modelling (PLS-SEM) through SmartPLS 4. The study integrates the Technology Acceptance Model and Self-Determination Theory to explain engagement in blended learning environments. The results reveal that student motivation is the strongest predictor of student engagement ($\beta = 0.562, p < .001$), followed by perceived ease of use ($\beta = 0.248, p = .004$). Perceived usefulness ($\beta = 0.045, p = .607$) and lecturer support ($\beta = 0.005, p = .958$) do not significantly influence engagement. The model explains 57.7% of the variance in student engagement ($R^2 = 0.577$). This study contributes to blended learning and student engagement literature in three important ways. First, it integrates TAM and SDT to provide a more comprehensive explanation of engagement in blended learning environments. Second, it extends engagement research into the context of Strategic Management education, a discipline characterized by high levels of analytical reasoning and decision-making. Third, the findings provide empirical evidence supporting an emerging shift from technology-centred explanations of engagement toward learner-centred explanations, highlighting the dominant role of student motivation in digitally mature learning environments.

Keywords: *Student engagement; Blended learning; Technology Acceptance Model; Self-Determination Theory; Student motivation; Strategic Management education; Higher education; PLS-SEM.*

Introduction

The rapid digitalization of higher education has fundamentally transformed teaching and learning practices worldwide. Advances in learning management systems (LMS), artificial intelligence (AI)-supported educational technologies, mobile learning applications, virtual collaboration tools, and data-driven instructional platforms have created new opportunities for universities to deliver more flexible, accessible, and personalized learning experiences (Petrovic & Jaksic, 2026). Although the COVID-19 pandemic accelerated the adoption of technology-mediated education, contemporary higher education institutions increasingly view digital and blended learning approaches as integral components of long-term educational strategies rather than temporary emergency responses (Liew & Kamrozzaman, 2026; Garmpis et al., 2026).

Among these emerging approaches, blended learning has become one of the most widely adopted instructional models in higher education. Blended learning integrates face-to-face instruction with online learning activities to leverage the strengths of both physical and digital learning environments (Hrastinski, 2019). Numerous studies report that blended learning can enhance learning flexibility, accessibility, collaboration, learner autonomy, and educational effectiveness when appropriately designed and implemented (Al-Mekhlafi et al., 2025; Guo et al., 2026). As universities continue to invest substantial resources in digital learning infrastructures, understanding the factors that determine the success of blended learning initiatives has become an increasingly important research and policy priority.

Despite the widespread adoption of blended learning, technological implementation alone does not guarantee successful educational outcomes. Rather, the effectiveness of blended learning depends largely on the extent to which students actively participate in and engage with learning activities. Student engagement has therefore emerged as a central construct in higher education research because of its strong association with academic achievement, learning satisfaction, persistence, retention, and overall educational success (Fredricks et al., 2004; Kahu, 2013). Engaged students demonstrate higher levels of participation, invest greater cognitive effort in learning tasks, and exhibit stronger emotional connections to their educational experiences. In contrast, disengaged students often experience lower motivation, weaker academic performance, and higher risks of withdrawal from learning activities.

The importance of engagement becomes particularly evident in blended learning environments where students are required to navigate multiple learning spaces simultaneously. Unlike traditional classroom settings where participation is primarily structured and instructor-directed, blended learning requires students to engage across both physical and virtual environments while managing greater levels of autonomy and self-regulation. Students must access digital resources, participate in online discussions, collaborate with peers through technological platforms, and independently manage their learning schedules. Recent studies indicate that successful participation in blended learning increasingly depends on students' ability to remain behaviourally, emotionally, and cognitively engaged within complex digital learning ecosystems (Hümmer et al., 2026).

Consequently, researchers have devoted considerable attention to identifying the factors that influence engagement in blended learning environments. Existing literature suggests that student engagement is shaped by a combination of technological, instructional, and psychological factors (Lai & Nguyen, 2026). Technological factors relate to students' perceptions of learning technologies and digital platforms. Instructional factors concern the quality of support, guidance, and feedback provided by instructors. Psychological factors encompass learners' motivation, attitudes, self-regulation, and willingness to invest effort in learning activities. While each of these factors has been independently associated with engagement, uncertainty remains regarding their relative importance in contemporary blended learning environments.

The context of Strategic Management education warrants particular attention because of the unique cognitive, behavioural, and emotional demands associated with the discipline. Unlike courses that emphasize knowledge acquisition and memorization, Strategic Management requires students to evaluate internal and external business environments, identify strategic opportunities and threats, formulate strategic alternatives, and justify decisions under uncertainty. It relies heavily on experiential and case-based learning, including business cases, strategic simulations, group projects, and environmental-scanning exercises that require students to analyze information, synthesize multiple perspectives, and defend their recommendations. Meaningful learning outcomes in this discipline can therefore be achieved only when students demonstrate high levels of behavioural, emotional, and cognitive engagement.

This importance is amplified in blended learning environments, where Strategic Management students must sustain engagement across physical and digital settings while managing independent learning responsibilities. Online discussions, virtual collaboration platforms, digital case analyses, and technology-mediated assessments require active engagement beyond the traditional classroom, making engagement a critical mechanism through which students interact with content, collaborate with peers, and develop higher-order strategic thinking.

Because disciplines that emphasize problem-solving, critical thinking, and decision-making demand greater learner autonomy and self-regulation than content-oriented disciplines (Hümmer et al., 2026; Ngo, 2026), students' willingness to invest effort becomes essential in Strategic Management, where they must independently explore business issues and make judgments in situations with no single correct answer. Nevertheless, the discipline remains underrepresented in blended learning and engagement research, as most prior studies examine general higher education settings without considering its distinctive demands. Investigating engagement in this context therefore provides an appropriate setting for examining the relative influence of technological, instructional, and psychological factors and contributes to both the blended learning literature and the broader field of management education.

One of the most influential frameworks for understanding technology-related learning behaviour is the Technology Acceptance Model (TAM) proposed by Davis (1989). TAM suggests that individuals' acceptance and use of technology are primarily influenced by two beliefs: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which individuals believe that a technological system enhances their performance, while perceived ease of use reflects the extent to which the system is perceived as effortless to use. Numerous educational studies have applied TAM to explain students' adoption of online learning systems, learning management systems, mobile learning technologies, and virtual

learning environments (Venkatesh et al., 2003; Mantasia et al., 2026). Research generally indicates that students are more likely to adopt and utilize educational technologies when they perceive them as useful and easy to use.

However, contemporary developments in higher education raise important questions regarding the continued dominance of technology acceptance factors in explaining student engagement. As digital technologies become increasingly embedded within educational systems, students are becoming more familiar with online learning environments and digital educational tools. Contemporary university students often perceive learning management systems, virtual classrooms, and digital communication platforms as standard components of their educational experience rather than innovative technologies (Petrovic & Jaksic, 2026; Ali & Georgiou, 2026). Consequently, the explanatory power of traditional technology acceptance constructs may diminish as technological familiarity becomes ubiquitous among learners.

At the same time, instructional support remains a critical component of blended learning environments. Lecturer support encompasses the academic guidance, feedback, encouragement, monitoring, accessibility, and facilitation provided by instructors throughout the learning process. Previous studies consistently emphasize that supportive instructors contribute positively to student satisfaction, learning confidence, and academic achievement (Kahu & Nelson, 2018). Within blended learning environments, lecturer support may help students navigate technological challenges, clarify academic expectations, and maintain motivation throughout the learning process. Nevertheless, recent research suggests that the role of instructors is evolving from information providers toward facilitators of learner-centred educational experiences (Gogollari et al., 2026; Wang et al., 2026). This evolution raises questions regarding whether instructor support remains a primary determinant of engagement among digitally experienced learners.

In contrast to technological and instructional explanations, an increasing body of research highlights the importance of psychological factors, particularly student motivation, in shaping engagement outcomes. Drawing upon Self-Determination Theory, motivation refers to the internal psychological processes that energize, direct, and sustain learning behaviour (Ryan & Deci, 2020). Motivated students are more likely to invest effort in learning activities, persist when encountering challenges, actively participate in discussions, and pursue meaningful learning experiences. Recent studies suggest that learner autonomy, self-regulation, and intrinsic motivation have become increasingly important within blended and hybrid learning environments because students are expected to assume greater responsibility for managing their own learning processes (Yang & Abhakorn, 2026; Ngo, 2026; Samdeshi et al., 2026).

Furthermore, contemporary engagement research increasingly argues that student engagement emerges not merely from technology adoption but from the interaction between learning experiences, learner characteristics, and educational environments. Studies by Wang et al. (2026), Ali and Georgiou (2026), and Rahman et al. (2026) suggest that students' perceptions of learning quality, educational value, and personal relevance may exert greater influence on engagement than technological characteristics alone. These findings indicate a potential shift from technology-centred explanations of engagement toward learner-centred explanations that emphasize psychological readiness, motivation, and self-directed learning capabilities.

Despite the growing body of literature on blended learning and student engagement, several important gaps remain unresolved. First, existing studies have largely examined technological,

instructional, and psychological determinants of engagement independently rather than simultaneously. Research grounded in the Technology Acceptance Model has predominantly focused on technological factors such as perceived usefulness and perceived ease of use (Davis, 1989; Venkatesh et al., 2003; Mantasia et al., 2026), while other studies have emphasized lecturer support, instructional quality, and learning experience as key drivers of engagement (Wang et al., 2026; Rahman et al., 2026). Similarly, motivation-based studies have highlighted the importance of learner autonomy, self-regulation, and intrinsic motivation in shaping educational outcomes (Ling Yang & Abhakorn, 2026; Phuong Anh Ngo, 2026). However, relatively few studies have compared the relative influence of these technological, instructional, and psychological factors within a single integrated framework. Consequently, there remains limited understanding regarding which determinants exert the strongest influence on student engagement in contemporary blended learning environments.

Second, recent blended learning research presents inconsistent findings regarding the factors that most effectively promote student engagement. While some studies report that technology-related factors significantly influence engagement and learning outcomes (Petrovic & Jaksic, 2026; Mantasia et al., 2026), others suggest that learner-centred variables such as motivation, self-regulated learning, and autonomy play a more influential role (Hümmer et al., 2026; Samdeshi et al., 2026). Similarly, studies examining lecturer support have produced mixed results, with some reporting significant positive effects on engagement and satisfaction, while others suggest that students in digitally mature learning environments increasingly rely on self-directed learning capabilities rather than direct instructor intervention (Gogollari et al., 2026; Wang et al., 2026). These inconsistencies create uncertainty regarding the relative importance of technological, instructional, and motivational factors in explaining engagement.

Third, limited empirical evidence exists within Strategic Management education, despite the unique learning demands associated with the discipline. Strategic Management courses require students to engage in higher-order cognitive activities such as strategic analysis, environmental scanning, case-based decision-making, problem-solving, and critical evaluation of complex business scenarios. These learning activities demand substantial behavioural, emotional, and cognitive engagement, potentially differentiating Strategic Management from more content-oriented disciplines. Nevertheless, most engagement studies have been conducted within general higher education contexts, leaving the determinants of engagement in Strategic Management education insufficiently explored.

Furthermore, the rapid normalization of digital learning technologies within higher education raises important theoretical questions regarding the continued relevance of traditional technology acceptance explanations. As learning management systems, virtual classrooms, and digital collaboration tools become routine components of university education, students may increasingly view technological usefulness as a basic expectation rather than a distinguishing factor that influences engagement. Under such conditions, psychological factors such as motivation may become more important in explaining why students choose to invest effort and actively participate in blended learning activities.

Addressing these gaps is important for both theory and practice. From a theoretical perspective, there is a need to better understand how technological, instructional, and motivational factors interact to influence engagement in digitally mature learning environments. From a practical perspective, universities and educators require evidence regarding which factors should be

prioritized when designing blended learning strategies aimed at enhancing student engagement and learning effectiveness.

Against this background, the present study investigates the relative influence of perceived ease of use, perceived usefulness, lecturer support, and student motivation on student engagement among undergraduate Strategic Management students in a Malaysian public university. Harnessing the Technology Acceptance Model and Self-Determination Theory, the study develops and tests an integrated framework using Partial Least Squares Structural Equation Modelling (PLS-SEM).

This study contributes to the literature in four important ways. First, it integrates technological, instructional, and psychological determinants of engagement within a single explanatory model. Second, it extends blended learning research within the underexplored context of Strategic Management education. Third, it contributes to emerging debates concerning the relative importance of technology acceptance and motivation in digitally mature learning environments. Finally, the study provides empirical evidence regarding a potential transition from technology-centred and instructor-centred explanations of engagement toward learner-centred explanations that emphasize motivation and self-directed learning. The findings offer important implications for educators, instructional designers, and higher education institutions seeking to develop more engaging and effective blended learning environments in the digital era.

Literature Review and Hypotheses Development

Student Engagement in Contemporary Blended Learning Environments

Student engagement is widely recognized as one of the most important determinants of learning effectiveness in higher education. Over the past two decades, engagement has evolved from being viewed as a simple indicator of participation to a multidimensional construct encompassing behavioural, emotional, and cognitive involvement in learning activities (Fredricks et al., 2004; Kahu, 2013). Behavioural engagement refers to students' participation in academic activities, emotional engagement reflects affective reactions toward learning experiences, and cognitive engagement represents students' investment in deep learning, critical thinking, and self-regulated learning.

In contemporary higher education, engagement matters increasingly because learning occurs within blended and hybrid environments, where students engage not only in classroom interactions but also through digital platforms, online discussions, collaborative technologies, and independent activities, linking learning environments to outcomes such as achievement, satisfaction, retention, and persistence (Rahman et al., 2026; Ombati et al., 2026). Engagement in these settings differs fundamentally from that in traditional classrooms: learners must navigate multiple learning spaces while managing greater autonomy and self-regulation (Hümmer et al., 2026), so engagement is best understood as a dynamic process shaped by technological, instructional, and psychological factors rather than mere classroom participation (Wang et al., 2026).

Contemporary research further indicates that engagement is becoming increasingly learner-centred, emerging from learners' perceptions of educational value, self-regulation, and intrinsic motivation rather than from instructional delivery or technology availability alone (Ngo, 2026; Samdeshi et al., 2026). Understanding engagement therefore requires attention to psychological

mechanisms as well as technological and instructional conditions. Drawing on the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT), this study accordingly investigates four determinants of engagement: perceived ease of use, perceived usefulness, lecturer support, and student motivation.

Technology Acceptance Model in Blended Learning

The Technology Acceptance Model (TAM) developed by Davis (1989) remains one of the most influential frameworks for understanding technology adoption and usage behaviour. TAM proposes that users' acceptance of technology is primarily determined by two beliefs: perceived usefulness and perceived ease of use. These beliefs influence attitudes toward technology and ultimately affect behavioural intentions and system utilization.

Within educational contexts, TAM has been extensively applied to explain students' adoption of learning management systems, online learning platforms, virtual learning environments, and mobile learning technologies (Venkatesh et al., 2003). Numerous studies demonstrate that students who perceive educational technologies as useful and easy to use are more likely to engage with online learning resources, participate in digital activities, and continue using educational technologies (Mantasia et al., 2026).

However, the role of technology acceptance may be changing. Contemporary students interact with digital technologies throughout their education and often perceive online platforms as standard infrastructure rather than innovative tools (Petrovic & Jaksic, 2026; Ali & Georgiou, 2026), leading researchers to question whether traditional TAM constructs retain the same explanatory power in mature blended learning environments. This study therefore incorporates TAM variables while simultaneously considering lecturer support and student motivation alongside broader instructional and psychological determinants of engagement (Guo et al., 2026; Wang et al., 2026).

Perceived Ease of Use and Student Engagement

Perceived ease of use (PEOU) refers to the degree to which an individual believes that using a particular technological system requires minimal effort (Davis, 1989). Within blended learning environments, ease of use reflects students' perceptions regarding the simplicity, accessibility, navigability, and usability of digital learning platforms.

The importance of ease of use can be explained through Cognitive Load Theory. Learning technologies that are difficult to navigate may impose additional cognitive demands on students, diverting attention away from learning activities and toward technological management. In contrast, intuitive and user-friendly systems allow students to allocate cognitive resources more effectively toward academic tasks and knowledge acquisition.

Previous studies consistently report positive relationships between perceived ease of use and educational outcomes. Students who perceive learning technologies as easy to use are more likely to access learning materials, participate in online discussions, engage in collaborative learning activities, and complete assignments successfully (Al-Fraihat et al., 2020; Mantasia et al., 2026). Ease of use also contributes to learners' confidence and reduces anxiety associated with technology-mediated learning.

Recent blended learning studies continue to emphasize the importance of technological usability. Although students increasingly possess extensive experience with educational

technologies, intuitive learning systems remain essential for maintaining engagement and minimizing learning barriers (Guo et al., 2026). Within Strategic Management education, students frequently interact with case studies, online simulations, collaborative platforms, and digital assessment systems. Consequently, ease of use may facilitate greater participation and engagement in learning activities. Therefore, students who perceive blended learning technologies as easy to use are expected to demonstrate higher levels of engagement.

H1: Perceived Ease of Use positively influences student engagement.

Perceived Usefulness and Student Engagement

Perceived usefulness (PU) refers to the extent to which individuals believe that using a technological system enhances performance (Davis, 1989). In educational settings, usefulness reflects students' perceptions that digital learning technologies improve learning effectiveness, academic productivity, and educational outcomes.

TAM posits that Perceived usefulness is one of the strongest determinants of technology adoption because individuals are more likely to use systems that provide meaningful benefits. Students who perceive learning technologies as beneficial are generally expected to engage more actively with learning activities because they recognize the value these technologies contribute to academic success.

Previous educational technology studies consistently report positive relationships between Perceived usefulness and learning satisfaction, technology adoption, continuance intention, and academic performance (Venkatesh et al., 2003). Students who believe that learning technologies support their educational goals are more likely to utilize those technologies regularly and participate actively in learning activities.

Nevertheless, recent research suggests that perceptions of usefulness may be evolving in digitally mature educational environments. As learning technologies become increasingly integrated into routine educational experiences, students may view usefulness as a baseline expectation rather than a distinguishing factor influencing engagement (Petrovic & Jaksic, 2026; Ali & Georgiou, 2026). Despite this possibility, perceived usefulness remains a central construct within TAM and continues to influence students' interactions with digital learning environments.

Therefore, the following hypothesis is proposed:

H2: Perceived usefulness positively influences student engagement.

Lecturer Support and Student Engagement

Lecturer support (LS) refers to the academic guidance, feedback, encouragement, responsiveness, and facilitation provided by instructors during the learning process. Within higher education, supportive instructors contribute to positive learning environments by helping students overcome challenges, develop confidence, and achieve academic goals (Kahu & Nelson, 2018).

Social support theory suggests that supportive relationships enhance individuals' motivation, well-being, and performance. Within educational settings, lecturer support can reduce uncertainty, encourage participation, and strengthen students' commitment to learning activities. Students who perceive instructors as approachable, responsive, and supportive are

generally more willing to seek assistance, engage in discussions, and persist when encountering academic difficulties.

In blended learning environments, instructor support may be particularly important because students often experience reduced face-to-face interaction and greater learning independence. Timely feedback, clear communication, and instructional presence can help maintain students' connection to learning activities and reduce feelings of isolation.

However, contemporary blended learning research suggests that the role of instructors may be changing. Increasing emphasis on learner-centred pedagogies encourages students to become more autonomous and self-directed learners (Wang et al., 2026; Samdeshi et al., 2026). As a result, engagement may depend less on direct instructor intervention and more on students' capacity to manage their own learning processes.

Despite these developments, Lecturer support remains an important instructional factor that may influence engagement.

H3: Lecturer support positively influences student engagement.

Student Motivation and Student Engagement

Student motivation (SM) refers to the internal psychological processes that energize, direct, and sustain learning behaviour. Motivation influences the extent to which students invest effort, persist when encountering challenges, and actively participate in educational activities (Ryan & Deci, 2020).

Self-Determination Theory (SDT) provides a comprehensive explanation of motivational processes within educational settings. According to SDT, individuals are more likely to engage in activities when their needs for autonomy, competence, and relatedness are satisfied. Students who experience intrinsic motivation participate in learning activities because they perceive them as meaningful, enjoyable, and personally valuable.

Motivation has consistently been identified as one of the strongest predictors of engagement across educational contexts. Motivated students demonstrate greater persistence, invest more effort in learning tasks, and exhibit stronger behavioural, emotional, and cognitive engagement (Ryan & Deci, 2020). Recent studies continue to emphasize the central role of motivation in blended and hybrid learning environments where students must exercise greater autonomy and self-regulation (Yang & Abhakorn, 2026; Ngo, 2026).

The growing emphasis on learner-centred education further reinforces the importance of motivation. Contemporary blended learning environments increasingly require students to manage learning schedules, access resources independently, and regulate their own learning processes. Consequently, engagement is becoming increasingly dependent on students' internal willingness to invest effort in learning activities.

Within Strategic Management courses, motivation may be particularly influential because students are expected to engage in higher-order cognitive activities including strategic analysis, case study analysis, decision-making, environmental scanning, and problem-solving. These activities require sustained cognitive effort that is difficult to achieve without strong motivational foundations.

Therefore, students with higher levels of motivation are expected to demonstrate significantly greater engagement.

H4: Student motivation positively influences student engagement.

Conceptual Framework

This study proposes an integrated framework in which Perceived ease of use, Perceived usefulness, Lecturer support, and Student motivation function as antecedents of Student engagement. The framework recognizes that engagement is influenced not only by students' perceptions of educational technologies but also by instructional support and psychological readiness.

More importantly, the framework responds to recent calls for greater integration of technological, instructional, and learner-centred perspectives in blended learning research (Hümmer et al., 2026; Wang et al., 2026). By examining the relative influence of these determinants within Strategic Management education, the study seeks to provide a more comprehensive understanding of engagement in contemporary blended learning environments. Figure 1 presents the proposed conceptual framework that integrates technology acceptance, lecturer support, and student motivation as antecedents of student engagement.

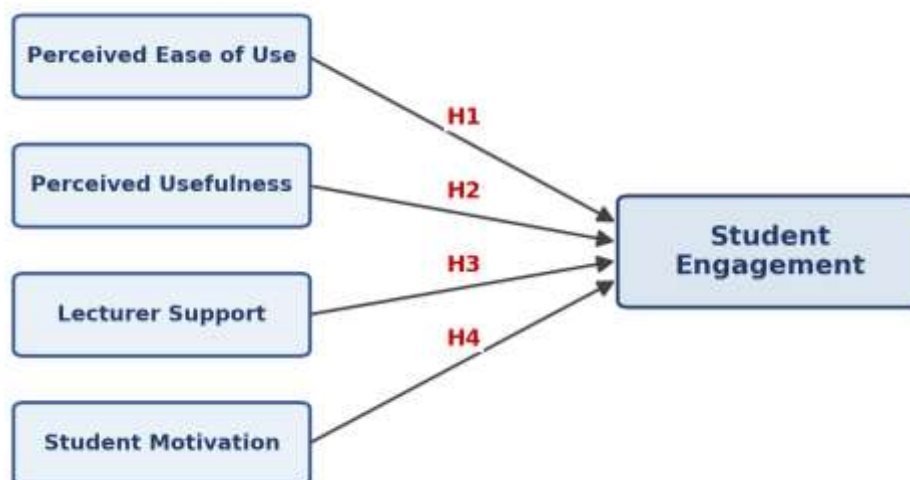


Figure 1: Proposed Conceptual Framework

Methodology

Research Design

This study employed a quantitative cross-sectional research design to examine the determinants of student engagement in blended learning environments. The study was guided by the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT), which collectively explain how technological perceptions and psychological factors influence learning behaviours (Davis, 1989; Ryan & Deci, 2020).

A survey approach was adopted because it enables the systematic collection of data from a relatively large group of respondents and facilitates the examination of relationships among latent constructs. Given the predictive orientation of the study and the presence of multiple latent variables measured through reflective indicators, Partial Least Squares Structural Equation Modelling (PLS-SEM) was selected as the analytical technique. PLS-SEM is

particularly appropriate for exploratory and prediction-oriented research, complex models, and studies involving relatively modest sample sizes (Hair et al., 2022).

The proposed model examines the effects of perceived ease of use (PEOU), perceived usefulness (PU), lecturer support (LS), and student motivation (SM) on student engagement (SE) in blended learning environments.

Participants and Data Collection

The study was conducted among undergraduate students enrolled in Strategic Management courses at a Malaysian public university between October 2025 and April 2026. A purposive sampling technique was employed, in which respondents were selected on the basis of clearly defined inclusion criteria: participants were required to be (a) currently enrolled in a Strategic Management course that adopted a blended learning approach and (b) to have direct experience with blended learning environments that integrated face-to-face teaching and online learning activities. Because the study targeted the entire eligible cohort rather than a subset, the questionnaire was administered to all 360 students who constituted the target population, representing a total enumeration of the accessible population.

Of the 360 students invited to participate, 133 returned completed questionnaires, yielding a response rate of 36.9%. The instrument was administered through an online survey platform in which all items were configured as mandatory; an inspection of the returned data therefore confirmed that no missing values were present, and no imputation or listwise deletion was required. All returned responses were additionally screened for careless or invalid response patterns, including straight-lining and internally inconsistent answering, and none were found to warrant removal. Consequently, all 133 responses were retained and included in the final analysis. A G*Power analysis indicated that a minimum of 129 responses was required; the achieved sample of 133 thus exceeds the minimum threshold for PLS-SEM analysis and provides sufficient statistical power for examining the proposed relationships (Hair et al., 2022).

Table 1: Respondent Profile (N=133)

Variable	Category	Frequency	Percentage (%)
Gender	Male	24	18
	Female	109	82
Age	21–23 years	79	59.4
	24–26 years	52	39.1
	27–29 years	2	1.5
Programme	Human Resource Management	64	48.1
	Office Management	51	38.3
	International Business	11	8.3
	Finance	7	5.3
Prior Blended Learning Experience	Yes	129	97
	No	4	3
Weekly LMS Usage	Less than 2 hours	2	1.5
	2–4 hours	31	23.3
	5–7 hours	42	31.6
	More than 7 hours	58	43.6

The respondent profile indicates that the sample consisted primarily of female students (82.0%), with the majority aged between 21 and 23 years (59.4%). Importantly, 97% of respondents reported prior experience with blended learning, while 43.6% used online learning platforms for more than seven hours per week. These characteristics suggest that respondents were highly familiar with digital learning environments and therefore well positioned to evaluate engagement in blended learning contexts.

Measurement Instrument

The questionnaire consisted of five reflective constructs adapted from established scales in the literature. Perceived usefulness and Perceived ease of use were adapted from Davis (1989) and subsequent TAM research (Venkatesh et al., 2003). Lecturer support items measured students' perceptions of instructional guidance, feedback, and academic support. Student motivation items were adapted from engagement and motivational research grounded in Self-Determination Theory. Student engagement was operationalized as a multidimensional construct reflecting behavioural, emotional, and cognitive engagement (Fredricks et al., 2004). All items were measured using a five-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

Table 2: Measurement Constructs and Sources

Construct	No. of Items	Source
Perceived Ease of Use (PEOU)	6	Davis (1989); Venkatesh et al. (2003)
Perceived Usefulness (PU)	6	Davis (1989); Venkatesh et al. (2003)
Lecturer Support (LS)	6	Kahu & Nelson (2018); Bond et al. (2020)
Student Motivation (SM)	6	Ryan & Deci (2020); Vallerand et al. (1992)
Student Engagement (SE)	6	Fredricks et al. (2004); Bond et al. (2020)

Data Analysis

Data analysis was conducted using SmartPLS 4. Following Hair et al. (2022), a two-stage analytical procedure was employed.

The first stage involved evaluating the measurement model through assessments of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

The second stage involved assessing the structural model through bootstrapping procedures to evaluate path coefficients, hypothesis testing, explanatory power (R^2), and effect sizes (f^2).

Common Method Bias Assessment

Because the study relied on self-reported survey data collected from a single source, common method bias (CMB) was assessed to ensure that the observed relationships among the constructs were not substantially inflated by measurement artifacts. Following the recommendation of Kock (2015), a full collinearity assessment was conducted using variance inflation factor (VIF) values.

The results indicated that all full collinearity VIF values were below the recommended threshold of 3.3. According to Kock (2015), VIF values below 3.3 suggest that common method

bias is unlikely to pose a serious threat to the validity of the findings. Therefore, common method bias was not considered a significant concern in this study.

Table 3: Common Method Bias Assessment
Collinearity Statistics (VIF)

Lecturer Support -> Student Engagement	1.99
Perceive Ease of Use -> Student Engagement	2.037
Perceive Usefulness -> Student Engagement	1.725
Student Motivation -> Student Engagement	1.946

Sample Size Adequacy

The adequacy of the sample size was evaluated using G*Power analysis. The analysis indicated that the minimum required sample size for detecting medium effect sizes with four predictors at a statistical power of 0.95 was below the achieved sample size. The final sample of 133 respondents therefore exceeded the minimum recommended threshold, confirming that the study possessed sufficient statistical power to detect meaningful structural relationships. Collectively, the measurement and structural model assessments provide strong evidence supporting the reliability, validity, and robustness of the proposed model.



Figure 2: GPower Analysis

Results

Measurement Model Assessment

Reliability was assessed using Cronbach's Alpha and Composite Reliability (CR).

Table 4: Reliability and Convergent Validity

Construct	Cronbach's Alpha	AVE
Lecturer Support	0.951	0.804
Perceived Ease of Use	0.947	0.79
Perceived Usefulness	0.888	0.639
Student Engagement	0.915	0.704
Student Motivation	0.917	0.708

All Cronbach's Alpha values exceeded the recommended threshold of 0.70, demonstrating excellent internal consistency reliability (Hair et al., 2022).

Convergent validity was assessed using Average Variance Extracted (AVE). The AVE values ranged from 0.639 to 0.804, substantially exceeding the recommended threshold of 0.50. These findings confirm that the constructs adequately explain the variance in their respective indicators.

The outer loadings ranged from 0.765 to 0.922 across all constructs. All indicators exceeded the minimum threshold of 0.70 and were statistically significant ($p < 0.001$), confirming satisfactory indicator reliability.

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). All HTMT values were below the conservative threshold of 0.85. The highest HTMT value was observed between student motivation and student engagement (HTMT = 0.779), indicating satisfactory discriminant validity (Henseler et al., 2015).

Collectively, the reliability and validity assessments confirm that the measurement model demonstrates satisfactory psychometric properties.

Table 5: HTMT Assessment

Constructs	LS	PEOU	PU	SE	SM
Lecturer Support (LS)	—				
Perceived Ease of Use (PEOU)	0.69	—			
Perceived Usefulness (PU)	0.469	0.563	—		
Student Engagement (SE)	0.537	0.616	0.559	—	
Student Motivation (SM)	0.605	0.574	0.666	0.779	—

Indicator Reliability

Indicator reliability was assessed through the examination of outer loadings. According to Hair et al. (2022), indicator loadings exceeding 0.70 indicate satisfactory reliability because the indicators explain more than 50% of the variance of the underlying construct.

Table 6: Outer Loadings

Construct	Item	Loading
Lecturer Support	LS1	0.869
	LS2	0.922
	LS3	0.872
	LS4	0.91
	LS5	0.898
	LS6	0.894
Perceived Ease of Use	PEOU1	>0.80
	PEOU2	>0.80
	PEOU3	>0.70
	PEOU4	>0.80
	PEOU5	>0.80
	PEOU6	>0.70
Perceived Usefulness	PU1–PU6	0.765–0.874
Student Engagement	SE1–SE6	0.791–0.872
Student Motivation	SM1–SM6	0.777–0.878

All indicators exceeded the recommended threshold of 0.70, confirming satisfactory indicator reliability. The findings indicate that the measurement items adequately represent their respective latent constructs and contribute significantly to the overall measurement model quality.

Structural Model Assessment

The explanatory power of the model was assessed using the coefficient of determination (R^2).

Table 7: Coefficient of Determination

Endogenous Variable	R^2
Student Engagement	0.577

The R^2 value of 0.577 indicates that perceived ease of use, perceived usefulness, lecturer support, and student motivation collectively explain 57.7% of the variance in student engagement. According to Hair et al. (2022), this level of explanatory power can be considered moderate to substantial.

Collinearity Assessment

Before assessing the structural relationships, collinearity was examined using the Variance Inflation Factor (VIF). Hair et al. (2022) recommend VIF values below 5.0 to indicate that multicollinearity does not threaten the validity of the model estimates.

Table 8: Variance Inflation Factor (VIF) Assessment

Construct Item	VIF
LS1–LS6	3.444–4.587
PEOU1–PEOU6	3.065–4.435
PU1–PU6	2.007–2.505
SE1–SE6	2.033–3.439
SM1–SM6	2.317–4.125

The VIF values ranged from 2.007 to 4.587, all of which were below the recommended threshold of 5.0. These findings indicate that multicollinearity was not a significant concern and that the structural relationships could be interpreted with confidence.

Hypothesis Testing

Hypotheses were tested using bootstrapping procedures with 5,000 resamples.

Table 9: Structural Model Results

Hypothesis	Relationship	β	t-value	p-value	Decision
H1	PEOU $\rightarrow$ SE	0.248	2.882	0.004	Supported
H2	PU $\rightarrow$ SE	0.045	0.515	0.607	Not Supported
H3	LS $\rightarrow$ SE	0.005	0.053	0.958	Not Supported
H4	SM $\rightarrow$ SE	0.562	5.24	<0.001	Supported

The results indicate that student motivation exerts the strongest positive influence on student engagement ($\beta = 0.562$, $p < 0.001$), followed by perceived ease of use ($\beta = 0.248$, $p = 0.004$). In contrast, perceived usefulness and lecturer support do not exhibit statistically significant relationships with student engagement.

Confidence Interval Assessment

The bias-corrected confidence intervals provide further support for the structural model findings.

For Student Motivation, the 95% confidence interval ranged from 0.340 to 0.759, excluding zero. Similarly, Perceived Ease of Use produced a confidence interval ranging from 0.068 to 0.406, also excluding zero. These findings confirm the statistical significance of both relationships.

Conversely, the confidence intervals for Perceived Usefulness (-0.121 to 0.221) and Lecturer Support (-0.170 to 0.177) included zero, indicating non-significant effects.

Effect Size Analysis

Table 10: Effect Size (f^2)

Relationship	f^2
Lecturer Support $\rightarrow$ Student Engagement	0
Perceived Ease of Use $\rightarrow$ Student Engagement	0.072
Perceived Usefulness $\rightarrow$ Student Engagement	0.003
Student Motivation $\rightarrow$ Student Engagement	0.384

Following Cohen (1988), Student motivation demonstrates a large effect size ($f^2 = 0.384$), indicating a substantial contribution to explaining Student engagement. Perceived ease of use exhibits a small effect size ($f^2 = 0.072$), while Lecturer support and Perceived usefulness demonstrate negligible effects.

The findings reveal three important patterns. First, Student motivation emerged as the strongest determinant of engagement, highlighting the importance of psychological factors in contemporary blended learning environments. Second, Perceived ease of use remains a significant technological predictor, suggesting that user-friendly learning systems facilitate greater student participation. Third, Perceived usefulness and Lecturer support failed to demonstrate significant direct effects on engagement. These findings suggest that among digitally experienced learners, technological usefulness and instructional support may function as baseline expectations rather than primary drivers of engagement.

Overall, the results provide empirical evidence supporting the growing argument that engagement in mature blended learning environments is increasingly shaped by learner-centred psychological mechanisms rather than technology-centred or instructor-centred factors.

Predictive Relevance Assessment (Q² Predict)

To evaluate the predictive capability of the model, Q² Predict analysis was conducted using the PLS Predict procedure in SmartPLS 4. According to Shmueli et al. (2019), positive Q² Predict values indicate that the model possesses predictive relevance for the endogenous construct.

Table 11: Q² Predict Assessment

Student Engagement Indicator	Q² Predict
SE1	0.201
SE2	0.4
SE3	0.482
SE4	0.324
SE5	0.35
SE6	0.437

The results indicate that all Q² Predict values are positive and range from 0.201 to 0.482. Since all values exceed zero, the model demonstrates predictive relevance for Student Engagement. Furthermore, the average Q² Predict value of approximately 0.366 suggests moderate-to-high predictive capability.

An examination of the prediction errors further reveals that the PLS-SEM model consistently produced lower RMSE values than the linear benchmark model (LM) across all Student Engagement indicators. This finding indicates that the proposed model possesses superior predictive performance and provides additional support for the robustness of the structural model.

Collectively, the Q² Predict results confirm that the model not only explains Student Engagement ($R^2 = 0.577$) but also possesses satisfactory predictive power for future observations, thereby strengthening the practical relevance of the findings.

Discussion

This study examined the relative influence of Perceived ease of use, Perceived usefulness, Lecturer support, and Student motivation on Student engagement in blended learning environments among undergraduate Strategic Management students. Applying the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT), the study sought to determine whether technological, instructional, or psychological factors exert the strongest influence on engagement within a digitally mature higher education context.

The findings reveal that Student motivation and Perceived ease of use significantly influence Student engagement, whereas Perceived usefulness and Lecturer support do not. With the model explaining 57.7% of the variance in engagement, these results suggest that engagement in contemporary blended learning is increasingly shaped by learner-centred psychological mechanisms rather than technology-centred or instructor-centred factors.

Hypothesis 1: Perceived Ease of Use and Student Engagement

The results indicate that Perceived Ease of Use significantly influences Student Engagement ($\beta = 0.248$, $t = 2.882$, $p = 0.004$), supporting Hypothesis 1. This finding suggests that students who perceive blended learning technologies as easy to use are more likely to participate actively in learning activities and engage behaviourally, emotionally, and cognitively within blended learning environments.

This finding is consistent with the Technology Acceptance Model (Davis, 1989), which posits that user is more likely to adopt and utilize technologies when they perceive them as effortless to operate. The result also aligns with recent studies by Mantasia et al. (2026), Lingyan Guo et al. (2026), and Petrovic and Jaksic (2026), who reported that user-friendly digital learning systems contribute positively to students' learning experiences and educational participation. Similarly, Al-Mekhlafia et al. (2025) found that technological simplicity and accessibility are important determinants of students' willingness to engage with blended learning platforms.

A possible explanation is that easy-to-use systems reduce cognitive burden and technological frustration, allowing students to focus on learning tasks rather than platform navigation. Usability remains important because Strategic Management courses require students to work with multiple digital tools, online case studies, collaborative platforms, and assessment systems simultaneously; when these are intuitive, students can devote greater cognitive resources to strategic analysis, problem-solving, and decision-making. Theoretically, this confirms that Perceived Ease of Use remains a relevant determinant of engagement even within digitally mature environments, continuing to play an important supporting role even as the explanatory power of traditional technology acceptance factors is said to be declining.

Hypothesis 2: Perceived Usefulness and Student Engagement

Contrary to expectations, Perceived Usefulness did not significantly influence Student Engagement ($\beta = 0.045$, $t = 0.515$, $p = 0.607$). Therefore, Hypothesis 2 was not supported.

This finding contrasts with traditional Technology Acceptance Model research, which generally identifies perceived usefulness as one of the strongest predictors of technology adoption and utilization (Davis, 1989; Venkatesh et al., 2003). However, the result is increasingly consistent with emerging blended learning studies suggesting that the role of usefulness may diminish as educational technologies become normalized components of university learning environments (Petrovic & Jaksic, 2026; Ramiz Ali & Georgiou, 2026).

One explanation relates to the digital maturity of the sample. Approximately 97% of respondents reported prior experience with blended learning, indicating that digital learning technologies were already embedded within their educational experiences. Under such conditions, students may view technological usefulness as a basic expectation rather than a distinguishing factor influencing engagement. In other words, students assume that learning technologies should be useful; therefore, perceived usefulness may no longer explain variations in engagement once a certain level of technological maturity has been achieved.

This finding also reflects broader shifts in higher education, in which students increasingly evaluate learning experiences by relevance, motivation, autonomy, and educational value rather than technological functionality alone (Wang et al., 2026; Rahman et al., 2026), so that engagement may depend more on psychological and experiential factors than on perceived utility. From a theoretical perspective, the result challenges the universal applicability of traditional TAM assumptions in digitally mature environments: usefulness may remain important for technology adoption yet not directly drive engagement among students who already regard educational technologies as standard learning infrastructure.

Hypothesis 3: Lecturer Support and Student Engagement

The results indicate that Lecturer Support does not significantly influence Student Engagement ($\beta = 0.005$, $t = 0.053$, $p = 0.958$). Therefore, Hypothesis 3 was not supported.

This finding appears inconsistent with earlier studies that emphasize the importance of instructor guidance, feedback, and academic support in promoting student participation and learning outcomes (Kahu & Nelson, 2018). However, recent blended learning research suggests that the role of instructors may be evolving within learner-centred educational environments (Christina Hümmer et al., 2026; Gogollari et al., 2026).

A plausible explanation is that contemporary blended learning increasingly encourages autonomy and self-directed learning, with students managing their own schedules, accessing resources independently, and participating actively in digital activities; engagement may thus depend less on direct instructor intervention than on learners' internal readiness and self-regulation. This is reinforced by the respondents' substantial prior experience with blended learning, which may have fostered independent learning strategies and greater reliance on digital resources, peer collaboration, and personal motivation rather than on lecturer support. Importantly, the non-significant direct effect should not be read as evidence that lecturer support lacks value; it may influence engagement indirectly through mediators such as motivation, self-efficacy, learning satisfaction, or perceived learning quality, and future research should examine these pathways. Theoretically, the finding supports emerging arguments that engagement in digitally mature environments is increasingly shaped by learner-centred rather than instructor-centred factors, contributing to discussions of the changing role of educators in technology-enhanced higher education.

Hypothesis 4: Student Motivation and Student Engagement

The results reveal that Student Motivation is the strongest predictor of Student Engagement ($\beta = 0.562$, $t = 5.240$, $p < 0.001$), supporting Hypothesis 4. Furthermore, Student Motivation demonstrates the largest effect size ($f^2 = 0.384$), indicating a substantial contribution to explaining engagement in blended learning environments.

This finding is consistent with Self-Determination Theory (Ryan & Deci, 2020), which argues that intrinsically motivated individuals are more likely to invest effort, persist when encountering challenges, and actively participate in meaningful activities. The result also aligns with recent blended learning studies by Ling Yang and Abhakorn (2026), Phuong Anh Ngo (2026), Sambhram Samdeshi et al. (2026), and Christina Hümmer et al. (2026), all of which emphasize learner autonomy, self-regulation, and intrinsic motivation as critical determinants of engagement in technology-enhanced learning environments.

Notably, the magnitude of the relationship observed in the present study exceeds that reported in many technology-centred engagement studies. This suggests that Strategic Management students may rely particularly heavily on intrinsic motivation because of the intellectual demands associated with strategic analysis, environmental scanning, case-based reasoning, and decision-making. These activities require sustained cognitive effort and active participation, making motivation a critical prerequisite for engagement.

The finding also reflects broader developments in higher education: as digital technologies become embedded, technological access alone no longer generates meaningful engagement, and students must be motivated to use available technologies and invest effort, so that motivation becomes the mechanism transforming technological opportunity into engagement. Theoretically, this represents the study's most significant contribution, providing empirical evidence for a shift from technology-centred toward learner-centred explanations: while technology remains an enabling condition, engagement is driven primarily by students' willingness to participate, learn, and persist. This extends Self-Determination Theory into blended Strategic Management education and informs discussions of learner autonomy and psychological readiness in digitally mature environments.

Theoretical Implications

This study contributes to the literature on blended learning, student engagement, educational technology, and management education in several important ways.

First, the study extends the Technology Acceptance Model (TAM) by demonstrating that its dimensions do not exert equivalent influence on engagement in digitally mature blended learning environments. Perceived Ease of Use significantly influenced engagement, whereas Perceived Usefulness did not, suggesting that students increasingly regard educational technologies as standard infrastructure rather than novel tools that enhance performance. This adds to the growing literature questioning the continued dominance of traditional technology acceptance assumptions as digital learning becomes normalized.

Second, the study integrates TAM and Self-Determination Theory into a single framework: TAM explains how students perceive and interact with learning technologies, while SDT explains why they invest effort and participate. The findings show that technological conditions alone are insufficient to explain engagement, which instead emerges from the interaction between supportive technological environments and students' motivational states. Technological and psychological readiness are therefore complementary rather than competing explanations of learning behaviour.

Third, the study provides empirical evidence for the growing importance of learner-centred explanations of engagement. Student Motivation emerged as the strongest predictor and showed a substantially larger effect size than the technology-related constructs, supporting recent scholarship that emphasizes learner autonomy, self-regulation, and intrinsic motivation as

central determinants of engagement and indicating that engagement increasingly depends on students' internal willingness to participate and persist rather than on the mere availability of technological resources.

Fourth, the study informs the debate on the transition from technology-centred toward learner-centred engagement models. Earlier research often assumed that improved technological functionality would automatically enhance engagement; the present findings challenge this by showing that psychological factors exert considerably greater influence than technological usefulness. Technology remains important as an enabling condition, but meaningful engagement depends primarily on students' motivation to use the learning opportunities available.

Fifth, the study extends engagement research into Strategic Management education, a discipline requiring environmental scanning, strategic analysis, case-based decision-making, and complex problem-solving that demand high behavioural, emotional, and cognitive engagement. By demonstrating that motivation is the dominant determinant of engagement in this context, the study offers new insight into disciplines characterized by higher-order cognitive learning activities.

Finally, the findings show that engagement is a multidimensional phenomenon shaped by technological, instructional, and psychological influences whose relative weight is unequal: psychological readiness, particularly motivation, matters substantially more than technological usefulness or direct lecturer support. This encourages a theoretical shift beyond technology-focused explanations toward more integrated, learner-focused models of engagement in digitally mature higher education.

Practical Implications

The findings of this study provide important implications for higher education institutions, educators, instructional designers, and policymakers seeking to enhance student engagement in blended learning environments. The results demonstrate that student motivation is substantially more influential than technological usefulness or lecturer support in explaining engagement. Consequently, efforts to improve engagement should move beyond a narrow focus on technology provision and instead prioritize the development of learner-centred learning environments that foster motivation, autonomy, and active participation.

Implications for Higher Education Institutions

The findings suggest that universities should reconsider the assumption that investment in educational technology alone will increase engagement. Although digital infrastructure remains essential, engagement is driven primarily by students' motivation rather than by perceived technological usefulness. Institutions should therefore complement technological investment with initiatives that strengthen intrinsic motivation and self-directed learning, such as experiential learning, industry-based projects, strategic simulations, entrepreneurship programmes, and authentic assessment, while building support systems that encourage learner autonomy, self-regulation, and goal-setting. Institutional success in blended learning should accordingly be evaluated not only through technology-adoption metrics but also through student motivation, engagement, persistence, and learning outcomes.

Implications for Educators and Course Designers

The results highlight the importance of designing learning experiences that actively stimulate motivation. While lecturer support remains valuable for creating positive learning environments, its non-significant direct effect suggests that engagement depends more on how learning activities are designed than on instructor intervention alone. Within Strategic Management education, educators should employ case-based learning, strategic simulations, problem-based learning, business-consulting projects, and collaborative decision-making that connect theory to real-world situations and increase personal relevance and intrinsic motivation. Providing opportunities for autonomy, such as allowing students to select project topics and explore alternative strategic solutions, together with fostering reflection, goal-setting, and independent problem-solving, further develops the self-regulated learning behaviours required for sustained engagement.

Implications for Learning Technology Designers

The significance of Perceived Ease of Use underscores the continuing importance of user-centred technology design; even for digitally experienced students, complex or poorly designed systems can create barriers to engagement. Learning management systems and educational platforms should prioritize simplicity, accessibility, and intuitive navigation, with streamlined interfaces, mobile compatibility, integrated communication tools, and clear learning pathways that reduce cognitive burden. The non-significant effect of Perceived Usefulness suggests that students no longer evaluate technologies mainly on functionality but treat them as expected components of learning; designers should therefore emphasize usability and learner experience rather than adding increasingly complex features, so that technology functions as a seamless enabler of learning rather than as its focal point.

Implications for Policy and Blended Learning Strategy

From a policy perspective, blended learning strategies should adopt a balanced approach that integrates technological, pedagogical, and psychological dimensions of learning, since technology alone is insufficient to generate meaningful engagement. Policymakers should encourage learning environments that support motivation, learner autonomy, and active participation, and professional-development programmes for educators should include training in motivational teaching strategies and learner-centred pedagogies. Institutional policies should also recognize that successful blended learning depends not only on access to technology but on students' willingness to utilize the learning opportunities available, making the enhancement of motivation, engagement, and self-directed learning a central objective of future initiatives.

Limitations and Future Research

While the present study contributes to understanding the determinants of student engagement in blended learning environments, several limitations should be acknowledged when interpreting the findings.

First, the study employed a cross-sectional research design, which limits the ability to establish causal relationships among the constructs. Although the structural model provides evidence of significant associations between Student Motivation, Perceived Ease of Use, and Student Engagement, the temporal ordering of these relationships cannot be conclusively determined. Student engagement may evolve over time as learners gain experience with blended learning environments, develop self-regulated learning capabilities, and become more familiar with digital technologies. Future research should therefore adopt longitudinal designs to examine

how engagement and its determinants change across different stages of students' learning journeys.

Second, the study was conducted within a single Malaysian public university and focused specifically on undergraduate students enrolled in Strategic Management courses. Although this context provides valuable insights into a discipline characterized by high cognitive and analytical demands, the findings may not be fully generalizable to other educational settings, institutions, disciplines, or cultural contexts. Future studies should replicate the model across multiple universities, academic disciplines, and national contexts to examine the stability and generalizability of the findings.

Third, the study relied on self-reported survey data, which may be subject to common method bias, social desirability effects, and respondents' subjective perceptions. Although statistical assessments indicated that common method bias was not a serious concern, self-reported measures may not fully capture actual engagement behaviours. Future research could complement survey-based approaches with learning analytics, behavioural tracking data, classroom observations, or qualitative interviews to obtain a more comprehensive understanding of engagement in blended learning environments.

Fourth, the study examined only the direct effects of Perceived Ease of Use, Perceived Usefulness, Lecturer Support, and Student Motivation on Student Engagement. While this approach was appropriate for identifying the relative influence of key determinants, it does not capture the potentially complex mechanisms through which engagement develops. Future studies should investigate mediating variables that may explain how technological and instructional factors influence engagement. Potential mediators include academic self-efficacy, self-regulated learning, learning satisfaction, perceived learning quality, psychological empowerment, and learner autonomy.

Fifth, the findings revealed that Lecturer Support and Perceived Usefulness did not exert significant direct effects on Student Engagement. However, this does not necessarily imply that these constructs are unimportant. Instead, their influence may occur indirectly through motivational or psychological pathways. Future research should therefore examine mediation models in which Student Motivation functions as an intermediary mechanism linking technological and instructional conditions to engagement outcomes.

In addition to mediation effects, future research should explore potential moderating variables that may influence the strength of the observed relationships. Variables such as digital literacy, prior blended learning experience, gender, academic performance, and programme of study may shape how students respond to technological and motivational factors. Examining these moderators could provide a more nuanced understanding of engagement across diverse learner populations.

The findings also suggest several opportunities for theoretical advancement. While the present study integrates the Technology Acceptance Model and Self-Determination Theory, future research could incorporate additional theoretical perspectives to develop more comprehensive engagement models. Relevant frameworks include the Unified Theory of Acceptance and Use of Technology (UTAUT), Social Cognitive Theory, Expectancy-Value Theory, the Community of Inquiry framework, and theories of self-regulated learning. Integrating these

perspectives may provide deeper insights into how technological, social, cognitive, and motivational processes jointly influence engagement in blended learning environments.

Finally, the results point toward an emerging shift from technology-centred explanations of engagement toward learner-centred explanations. Future research should investigate this proposition more explicitly by comparing the relative explanatory power of technological, instructional, and psychological determinants across different levels of digital maturity. Such studies could determine whether the dominance of motivational factors observed in the present research reflects broader transformations occurring within contemporary higher education.

Despite these limitations, the study provides meaningful insights into the determinants of student engagement in blended Strategic Management education and establishes a foundation for future research examining the evolving nature of engagement in digitally mature learning environments

Conclusion

This study investigated the determinants of student engagement in blended learning environments among undergraduate Strategic Management students by integrating the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT). Specifically, the study examined the relative influence of Perceived Ease of Use, Perceived Usefulness, Lecturer Support, and Student Motivation on Student Engagement within a digitally mature higher education context.

The findings reveal that Student Motivation emerged as the most influential determinant of Student Engagement, followed by Perceived Ease of Use. In contrast, Perceived Usefulness and Lecturer Support did not demonstrate significant direct effects on engagement. Collectively, the four predictor variables explained 57.7% of the variance in Student Engagement, indicating that the proposed model possesses substantial explanatory power. Furthermore, the model demonstrated satisfactory predictive relevance, suggesting that the identified determinants provide meaningful insight into students' engagement behaviours within blended learning environments.

The findings offer important theoretical insight. Although technology remains a component of blended learning, technological factors alone are insufficient to explain engagement among contemporary students. Perceived Ease of Use continues to influence engagement by reducing technological barriers, but perceived usefulness no longer differentiates engagement among digitally experienced learners. Student Motivation exerts the strongest influence, underscoring the central role of learner autonomy, intrinsic motivation, and psychological readiness in shaping engagement.

More broadly, the study supports an emerging shift from technology-centred toward learner-centred explanations of engagement. As digital technologies become normalized within higher education, engagement increasingly depends on students' willingness to invest effort, persist through challenges, and actively participate. Technology functions as an enabling condition, whereas motivation serves as the primary mechanism through which engagement is generated and sustained.

The study also contributes to the literature by extending engagement research into the context of Strategic Management education. Given the discipline's emphasis on strategic analysis,

critical thinking, environmental scanning, and decision-making, engagement plays a particularly important role in facilitating meaningful learning experiences. The findings therefore provide valuable insights for educators seeking to enhance student participation and learning effectiveness within management and business education.

From a practical perspective, universities should move beyond technology-focused approaches and place greater emphasis on fostering motivation, learner autonomy, and self-directed learning. Investment in digital infrastructure remains important, but meaningful engagement is more likely when students are motivated to use the learning opportunities available; successful blended learning strategies should therefore balance technological readiness with psychological readiness.

Overall, this study advances understanding of student engagement in blended learning environments by demonstrating that engagement is shaped by a combination of technological and psychological factors, with motivation playing the dominant role. As higher education continues to evolve within increasingly digital learning ecosystems, the challenge facing educators and institutions is no longer simply ensuring access to technology but creating learning environments that inspire students to become motivated, autonomous, and actively engaged learners.

Acknowledgements

The authors are grateful for the help from Faculty of Business and Management, Universiti Teknologi MARA, Melaka, respondents who participated in this study, and the anonymous reviewers for their constructive feedback.

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