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FACTORS AFFECTING STUDENTS' SATISFACTION IN ONLINE LEARNING

Nur Nabilah Nor Arzami[1], Shamshul Anaz Kassim[2*], Fatin Nadiah Mohammad Nor[3], Siti Nur Ismahani Ahmad Tarmizi[4]

[1] Faculty of Business and Management, Universiti Teknologi MARA, Perlis Branch, Malaysia
Email: 2025138127@student.uitm.edu.my
[2] Faculty of Business and Management, Universiti Teknologi MARA, Perlis Branch, Malaysia
Email: shamsulanaz@uitm.edu.my
[3] Faculty of Business and Management, Universiti Teknologi MARA, Perlis Branch, Malaysia
Email: 2022958461@student.uitm.edu.my
[4] Faculty of Business and Management, Universiti Teknologi MARA, Perlis Branch, Malaysia
Email: 2022975063@student.uitm.edu.my
[*] Corresponding Author

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Abstract:

This study examines the factors influencing student satisfaction in online learning at university in northern region. The research investigates the impact and effect of students' perceived learner motivation, perceived challenges of e-learning, student interaction, and lecturer characteristics on students' satisfaction with online classes. A quantitative research approach was employed, with data collected through structured questionnaires. The findings reveal that lecturer characteristics, including effective communication, subject matter expertise, and responsiveness, play a significant role in shaping student satisfaction. Instructors who engage students through clear explanations, timely feedback, and an interactive teaching style contribute positively to the online learning experience. These findings highlight the need for institutions to invest in technological infrastructure, enhance lecturer training, and implement standardized teaching methodologies to improve the consistency and quality of online education. Addressing the identified challenges and reinforcing positive lecturer attributes can lead to a more engaging and satisfying online learning experience. Future research may benefit from incorporating qualitative methods to gain deeper insights into students' perceptions and experiences in online education. The study is in line with Twelfth Malaysian Plan (12MP) 2021-2025 which benefits the Malaysian government and higher education sector.

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Keywords:

Students' Satisfaction, Perceived Learner Motivation, Perceived Students' Interaction, Lecturers' Characteristics, Online Learning

Introduction

Students' satisfaction is an important factor in the context of online classes. It refers to the level of contentment, fulfilment, and overall experience that students feel within their learning environment, which impacts their motivation, engagement, and overall academic performance (Hettiarachchi, 2021). Therefore, understanding the factors that influence students' satisfaction with online classes is essential for enhancing the quality of virtual education and ensuring that students feel motivated in their studies (Rashid et al., 2021). Online classes are known as classes conducted over the internet, offering flexibility and accessibility but also posing challenges such as reduced face-to-face interaction, technological barriers, and varying levels of student engagement (Rashid et al., 2021). High levels of student satisfaction indicate that students are engaged, motivated, and perceive value in their learning experiences (Ahmad, 2022). Conversely, low satisfaction can hinder learning outcomes, increase dropout rates, and damage the reputation of educational institutions (Vieira et al., 2020). Student satisfaction in online classes is known to be a critical factor in modern education, which remains pivotal for ensuring effective learning outcomes (Dhawan, 2020). In recent years, the shift towards online learning platforms at universities have prompted a growing need to understand what influences students' satisfaction with their online class experience. It is reported that in recent years most of the university students facing dissatisfaction towards online classes such as lack of face to face, outcast and demotivation.

Several key issues contribute to this dissatisfaction, including technical difficulties, limited interaction with peers and instructors, inadequate instructional design, and disparities in digital access. Over 60% of university students struggled with motivation in online classes, citing limited engagement and technical difficulties as key barriers (Prakasha et al., 2023). Similarly, it is reported that 75% of students preferred hybrid learning models over fully online courses, emphasizing the need for blended approaches to enhance satisfaction (Wal, 2023). With these reasons, this study focuses on identifying factors affecting student satisfaction in online learning environments in university.

Problem Statement

The ability to access a wide range of resources and learning materials online can enhance the educational experience and provide university students with more opportunities for self-directed learning. However, they are also dissatisfied with online classes. Many of these university students find the lack of face-to-face interaction with lecturers and peers to be a significant drawback, which can lead to feelings of isolation and decreased motivation. Technical issues, such as poor internet connectivity, can disrupt the learning process and create additional stress for students. Statistics revealed that many students expressed dissatisfaction with online classes. According to the Malaysia's Ministry of Higher Education (2023), it noted that dissatisfaction among university students with online classes was strikingly high with nearly 22% were unsatisfied with online classes. In addition, it is reported that 48% of over 700 university students had struggled with poor internet connectivity, which contributed to their dissatisfaction with the online learning experience (The Star, 2024). Furthermore, it is

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found that 82% of students felt less engaged in online learning compared to traditional classroom settings (Ahmad et al., 2022). Previous studies have explored various aspects of online education, such as elements like course design, student motivation, accessibility of resources, and the effectiveness of instructional methods used in online classes.

However, many studies fail to consider crucial variables such as the quality of online materials, responsiveness of instructors, and the adequacy of technical support available to students. This research seeks to provide insights that can inform strategies to enhance students' satisfaction and improve the overall quality of online education delivery at university.

Literature Review

There are five points will be discussed in literature review namely: students' satisfaction as dependent variable, learner motivation, challenges of e-learning, students' interaction and lecturer characteristic as independent variables. The Expectancy Value Theory (EVT) coined by Eccles and Wigfield (1983, 2000) was used in this study. Table 1 presents a summary of existing research findings on online learning.

Students' Perceived Satisfaction Towards Online Classes

Student perceived satisfaction in online learning is defined by the positive experiences and the ability to document successes after course completion (Yu, 2022). Online classes can effectively meet students' informational needs, and when students are satisfied with their online education experience, they are more likely to persist with the course. This satisfaction also positively influences their performance, commitment, class participation, and reduces absenteeism (Hadi, Zulkiffli, & Mohamed, 2022). Therefore, a strong perceived learner motivation can contribute to higher levels of satisfaction by fostering active engagement, enthusiasm, and a sense of fulfilment in the learning process.

Students' Perceived Learner Motivation

Students' perceived learner motivation can be described as the self-generated drive that guides an individual's actions toward achieving specific goals (Alshathry & Alojail, 2024). The concept of students' perceived learner motivation in online learning hinges on accessibility and flexibility (Smith, 2020). Students are required to exercise self-discipline, effectively using digital tools for learning while avoiding distractions (Davis, 2019). Therefore, addressing students' challenges in online classes is crucial for enhancing overall student satisfaction and fostering positive learning outcomes in online education.

H1: There is a relationship between students' perceived learner motivation and students' satisfaction online class.

Students' Perceived Challenges of E-Learning

The concept of students' perceived challenges of e-learning involves a range of difficulties faced by students and educators in virtual learning environments (Park & Kim, 2020). These difficulties include technical problems like unreliable internet connections and limited access to necessary devices, which can impede the learning process (Sun, 2023). Some of previous studies have highlighted a common difficulty associated with online education. Means & Neisler's (2020) reported that 57% of participants indicated that their ability to maintain focus during online sessions was worse or much worse compared to in-person classes.

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Similarly, Yeung and Yau (2021) also found that university students facing challenges maintaining concentration during online learning sessions such as distractions from household noise like television, street sounds, and family members, making it difficult to concentrate on lectures. Therefore, incorporating interactive elements into online courses can enhance the overall quality of the learning experience and contribute to greater student satisfaction and success.

H2: There is a relationship between students' perceived challenges of e-learning and students' satisfaction online class.

Students' Interaction

Student interaction is a multifaceted aspect crucial for effective learning in any educational setting (Hettiarachchi et al., 2021). The interaction between instructors and students in online courses is pivotal in shaping the learning experience (Tichavsky et al., 2019). Establishing effective communication and engagement strategies is crucial for creating a supportive environment where instructors provide timely feedback, clarify course concepts, and encourage active participation through discussions and collaborative activities (Gray & Diloreto, 2022). Al-Khatib (2024) discussed that learner-instructor interaction is a significant factor influencing student satisfaction in online learning. However, online classes can sometimes lead to miscommunication due to different ways of interacting. Therefore, better student-teacher interaction leads to higher student satisfaction.

H3: There is a relationship between students' interaction and students' satisfaction online class.

Lecturers' Characteristic

Effective lecturers' characteristics are crucial for establishing a supportive and dynamic classroom atmosphere that enhances student learning and academic achievement (Wigfield, 2004; Kreber, 2019). Lecturer characteristics, such as clear communication, approachability, enthusiasm, and expertise in the subject matter, are crucial in creating a positive and effective online learning environment. the ability of lecturers to provide timely feedback, facilitate interactive discussions, and address student concerns promptly significantly enhances student satisfaction and perceived learning effectiveness in online settings (Al-Khatib et al., 2024). Effective lecturer characteristics not only enhance satisfaction but also significantly contribute to motivating students and promoting academic success in virtual learning environments (Ong & Quek, 2023). Therefore, the lecturer's characteristics, including expertise, communication skills, availability, and teaching approach, play a critical role in shaping students' perceptions of online classes and ultimately impact their satisfaction with the course.

H4: There is a relationship between lecturers' characteristics and students' satisfaction online class.

Expectancy Value Theory (EVT)

Expectancy Value Theory (Eccles and Wigfield (1983, 2000) was used in this study. The EVT theory explain about students' motivation and performance by two folds, namely: (1) expectancy beliefs (students' perceptions of their likelihood of success in a task) and (2) task value (the perceived importance, usefulness, or interest in the task). According to EVT theory,

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students are more likely to participate in and be satisfied with learning activities when they believe they can succeed and find value in the work (Wigfield & Eccles, 2000). Therefore, in the context of online education, these expectations may include instructor response, course material clarity, peer interaction, technology reliability and overall instructional quality. Figure 1 shows a research framework in this study.

Table 1: Summary of Existing Research Findings on Online Learning

Author/ Year	Issues	Method	Analysis	Results	Suggestion
Hettiarachchi et al. (2021)	Impact of online learning on student satisfaction during COVID-19	Quantitative survey	CFA SEM SPSS AMOS	Significant factors influencing satisfaction, including course content and delivery methods	Enhance online teaching strategies and provide adequate training for educators
Hadi et al. (2022)	Factors influencing student satisfaction with online learning	Quantitative survey	SPSS	Flexibility and accessibility were key contributors to satisfaction	Improve technological infrastructure and provide continuous support to students
Suhainai & Hussin (2022)	Student satisfaction in online English education programs	Mixed-methods approach	CFA SEM SPSS AMOS	Highlighted the importance of course structure, flexibility, and technology quality	Recommend curriculum adjustments and better technological tools to enhance learning
Sanusi et al. (2022)	Determinants of online learning satisfaction among tertiary students	Quantitative survey	SEM SPSS Smart-PLS	Motivation, psychology support, and technical support as significant factors	Suggest institutions provide psychological and technical support to improve satisfaction
Bao et al. (2022)	Student satisfaction with online education during the pandemic	Quantitative survey	SPSS AMOS	Teacher assistance and platform usability significantly	Recommend enhancing teacher training and platform development for

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				affected satisfaction	better engagement
Sun (2023)	Technical difficulties in online learning	Not applicable	Conceptual	Internet issues and limited device access can impede the learning process	Improve infrastructure and ensure access to necessary digital tools
Ong & Quek (2023)	Impact of effective lecturer characteristics on student motivation	Not applicable	Conceptual	Contributes to both satisfaction and academic success in virtual learning environment	Promote professional development to foster motivation and effective teaching practices
Alshathry & Alojail (2024)	Students' perceived learner motivation	Not applicable	Conceptual	Defined as a self-generated drive that guides actions toward achieving specific goals	Emphasize motivational strategies to improve learner engagement
Al-Khatib (2024)	Learner-instructor interaction and student satisfaction	Not applicable	Conceptual	Interaction with instructors significantly influences satisfaction in online learning	Foster meaningful interaction and communication between instructors and students
Al-Khatib et al. (2024)	Timely feedback and interactive engagement in online learning	Not applicable	Conceptual	Enhances satisfaction and perceived learning success	Encourage prompt feedback, interaction, and responsiveness from lecturers

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Research Framework

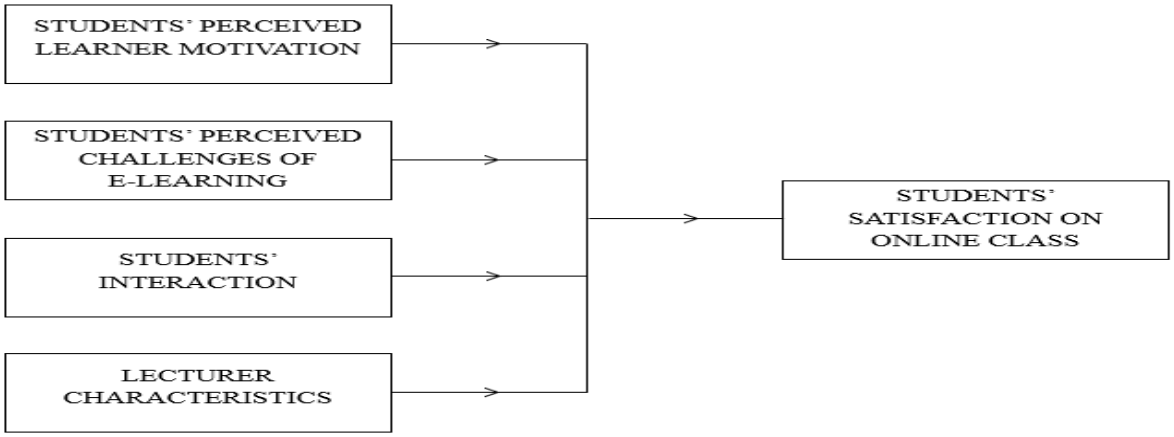

Figure 1: Research Framework

Hypotheses

H1: There is a relationship between students' perceived learner motivation and students' satisfaction online class.
H2: There is a relationship between students' perceived challenges of e-learning and students' satisfaction online class.
H3: There is a relationship between students' interaction and students' satisfaction online class.
H4: There is a relationship between lecturers' characteristics and students' satisfaction online class.

Methodology

This cross-sectional survey used a questionnaire for data collection, which consisted of five sections. This study used a quantitative research method to understand the relationship between the dependent variable (Students' Perceived Satisfaction) and the independent variables (Students' Perceived Learner Motivation, Students' Perceived Challenges of E-Learning, student's interaction, and lecturers' characteristics). In this study researchers focused on university students in northern region of Malaysia. The number of respondents consisting of university students that participated in this are 361 based on Krecjie & Morgan (1970) table of sampling size. The study used simple random sampling method, a probability sampling. The questionnaire has been administered using an online survey platform such as Google Forms, which will include Likert scale questions, close-ended inquiries, and demographic queries. In this study, the Likert scale has been utilized to gather responses.

All survey questions were presented in a closed-ended format, allowing respondents to rate their agreement level on a scale ranging from strongly disagree to strongly agree (1-5). Participants were encouraged to select the response option that most accurately reflected their views. The Likert scale used consisted of five points: (1) strongly disagree; (2) disagree; (3) neutral; (4) agree; (5) strongly agree. In this study, there were five items that respondents need to answer it. The first item is about students' perceived satisfaction (Chafouk & Marjanei, 2024; Ngo, 2021; Eom & Wen, 2006; Hong, 2024) was measured using eight indicators.

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In addition, students' perceived learner motivation (Means & Neisler, 2020; Pelikan et al., 2021; Rovai et al., 2017) was measure using five indicators. Five indicators were measured students' perceived challenges of e-learning (Eom & Ashill, 2016; Means & Neisler, 2020; Richardson et al., 2017 and Zielinski, 2000). Moreover, items of interaction adopted by Moore (1998) were measured with three indicators. The last item which is lecturer characteristics (Suson, 2024; Shaid et al., 2021) was measured using five indicators. The validity and reliability of the questionnaire had been evaluated by the researchers to determine the result of the data collection for this study. The validity test's aim was to determine which category each questionnaire question should be in.

This study used SPSS version 27 to analyze the data. The techniques of data analysis involved descriptive statistics to summarize demographic information and the central tendencies of each variable. In addition, inferential statistics such as correlation and multiple regression analyses to explore relationships between dependent and independent variables. Reliability tests were also conducted to ensure internal consistency of the instrument.

Findings

361 questionnaires were distributed and received. Only 145 (40%) were usable. Of this, 49 were male respondents (34%) and 96 were female respondents (66%). Surprisingly, most university students prefer attending class via face to face compared to online class. It shows that 84.8% (123 university students) preferred face to face class (physical class). Figure 2 shows the pie chart of gender and preferences for teaching and learning methods.

The result in Table 2 was interpreted using Pearson correlation coefficients (r). The reliability analysis indicated that all items are high in alpha value ranges above 0.60 to 0.90. In Table 2, the correlation analysis showed that only three (3) independent variables (students' perceived learner motivation, students' perceived challenges of e-learning and lecturer characteristics) were significantly and positively correlated with the dependent variable (students' satisfaction). However, students' interaction was insignificant with students' satisfaction.

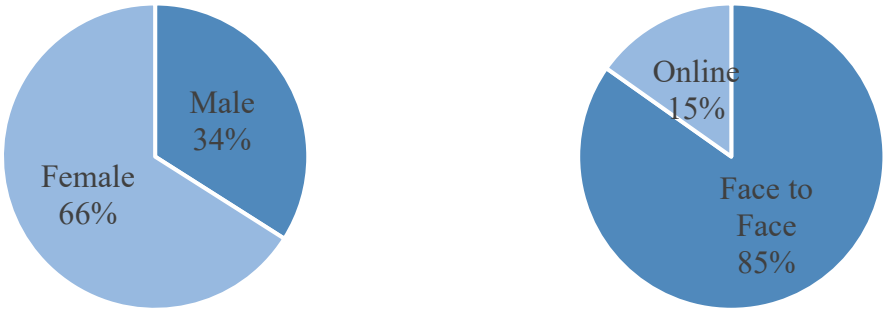

Figure 2: Gender and Preferences for Teaching and Learning Methods

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Table 2: Correlation Analysis

	SS	SPLM	SPC	SI	LC
SS	1				
SPLM	0.540**	1			
SPC	0.224**	0.514**	1		
SI	-0.35	0.236**	0.618**	1	
LC	0.547**	0.564**	0.204*	-0.44	1

Note: SS = Students' Satisfaction, SPLM = Students' Perceived Learner Motivation, SPC= Students' Perceived Challenges of E-Learning, SI = Students' Interaction, LC = Lecturers' Characteristics

Table 3: Regression Analysis

Variables	Beta (β)	Significance Value
Dependent variable: SS		
Independent variables:		
SPLM	0.357	.001**
SPC	0.064	0.507
SI	0.327	.001**
LC	-0.144	0.095
R Square	.391	
Adjusted R Square	.374	
F Test	22.471	

Note: Significant levels **p<0.01, *<0.05. SS = Students' Satisfaction, SPLM = Students' Perceived Learner Motivation, SPC= Students' Perceived Challenges of E-Learning, SI = Students' Interaction, LC = Lecturers' Characteristics

Results of regression analysis in Table 3 indicated that students' perceived learner motivation and students' interaction were significant with students' satisfaction. Meanwhile, students' perceived challenges of e-learning and lecturer characteristics were not significance with students' satisfaction. The R Square of 0.391 explains 39.1% of variability contributing to students' satisfaction. Based on the results, the hypotheses H1 and H3 were supported, whereas hypotheses H2 and H4 were not supported. The mediating variable (meaningfulness of work) was significant with dependent variable (turnover intention). The adjusted R Square of 0.374 explains 37.4 % of variability contributing to students' satisfaction.

Discussion

The above analysis shows that students' perceived learner motivation (β =0.357**) has a significant and positive relationship with students' satisfaction. Therefore, hypothesis 1 is accepted. There was a significant positive relationship between students' interaction (β =0.327**) and students' satisfaction. Therefore, hypothesis 3 is accepted. Besides that, it was found that there was an insignificant relationship between students' perceived challenges (β =0.064), and students' satisfaction. Therefore, hypothesis 2 was rejected. The result aligned with the study conducted by Nawi et al. (2018). In addition, hypothesis 4, which lecturer characteristics (β = -0.144), are not supported due to perpetuating factors and stigma may create

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confusion and inconsistencies.

Suggestion

This study only focuses on university students in northern region. The suggested approach, which includes influencing student satisfaction in online classes should prioritize longitudinal studies to track satisfaction over time, comparative analyses across different course types and formats to identify best practices, and exploration of technological interventions such as virtual reality and artificial intelligence (AI) tutoring systems. Additionally, cross-cultural studies could shed light on how cultural factors impact satisfaction, while qualitative investigations into student perspectives can reveal nuanced aspects like instructor communication and sense of community. By focusing on these avenues, future research can provide deeper insights into enhancing student satisfaction in online learning environments, informing both instructional practices and technological advancements to optimize educational outcomes.

Conclusion

This study was completed to investigate the factors of students' satisfaction on online classes in universities in the northern region. Due to the diverse traits and nature of students, it was discovered that variables such as students' perceived challenges and lecturers' characteristics had little bonding on students' satisfaction on online classes. Therefore, high resilience among university students, active friendly interaction among lecturers using interactive artificial intelligence (AI) towards online classes are key factors in increasing value and high-performance online classes satisfaction in the future. This study contributes to both theory and practice by expanding the understanding of psychological and technological factors influencing online education satisfaction. Theoretically, it enriches existing models of student engagement and satisfaction by introducing resilience and AI-supported interaction as essential elements. Practically, it offers valuable insights for educators and policymakers to improve online learning strategies and support systems.

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