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The influence of perceived institutional support and social competencies on online learning satisfaction: A private higher education student perspective

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Abstract

COVID-19 pandemic has revolutionised higher education delivery through online learning. While it offers flexibility and accessibility, it also challenges social interaction and satisfaction. To address this challenge, this study adopted the Community of Inquiry framework as a valuable lens to investigate the relationship between perceived institutional support, social competencies with classmates and instructors, and online learning satisfaction. A quantitative approach was used to analyse and explore the proposed hypotheses through Partial Least Squares Structural Equation Modelling. Students with prior experience in online learning from private higher education institutions were approached as the respondents. A total of 419 samples were selected through purposive sampling. The results indicated a positive relationship between perceived institutional support and online learning satisfaction. Perceived institutional support is positively related to social competencies of classmates and instructors. The research found that social competencies with classmates and instructors significantly mediated the association between perceived institutional support and online learning satisfaction. The findings from the study have implications for educational institutions, instructors, and students.

Keywords:
Online learning satisfaction; Perceived institutional support; Social competencies; Higher education institutions; Community of inquiry.

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1. Introduction

With the COVID-19 pandemic, educational institutions have accelerated the adoption of online education to ensure safety and continuity (Hodges et al., 2020; Yan et al., 2021). This has resulted in the popularity of online learning in higher education (Azman & Abdullah, 2021). Online learning, which refers to the use of the Internet to provide educational content and instruction, has gained momentum as a viable and accessible alternative to traditional classroom approaches. Its advantages, such as greater access to education, flexibility in learning schedules and locations, and cost-effectiveness, have been widely acknowledged (Bali & Liu, 2018; Rawashdeh et al., 2021).

However, online learning poses challenges, including a lack of personal interaction that leads to a low sense of community (Lytras et al., 2022). This reinforces the belief that online learning is less interactive, primarily because of limited social interaction, insufficient student satisfaction,

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and a lack of social presence (Bali & Liu, 2018). The absence of opportunities for in-person contact with classmates and instructors may also lead to reduced motivation, engagement, and feelings of social isolation (Chung et al., 2020). Hence, these outcomes underscore the critical need to address the social aspects of online learning to improve student satisfaction and the overall learning experience.

Numerous studies have explored the various factors that impact online learning satisfaction. These include support from institutions and administration, the characteristics and knowledge of instructors, course structure and design, technical system configuration and design, technology usability, technical difficulties, social support, sense of belonging, classroom interaction, interpersonal behaviours of learners, learner motivation, readiness for e-learning, and environmental factors (Al-Fraihat et al., 2020; Baber, 2020; Gray & Diloreto, 2016; Jaggars & Xu, 2016; James, 2021; Nasir, 2020; Ranadewa et al., 2021). While this extensive research offers valuable insights into the complex nature of satisfaction in online learning, there remains a crucial gap concerning institutional support and social competencies from an online learning perspective. Addressing this research gap would hold the potential to better cater to student needs. Incorporating such insights can significantly improve student satisfaction with online education when creating virtual learning environments.

In Malaysia, public and private higher education institutions (HEIs) are essential for advancing education. Public HEIs are government-funded and governed, whereas private HEIs operate independently and rely on private funding (Sirat & Wan, 2021). These institutions provide educational opportunities to students in the Malaysian higher education sector. Private HEIs have unique administrative structures and funding mechanisms that significantly influence the quality and delivery of online education (Arokiasamy et al., 2009; Wan, 2007). With the growing accessibility of online learning resources in the private sector, it is critical to comprehend and enhance students' online learning satisfaction (Fatani, 2020). Thus, a deeper investigation of student satisfaction with private HEIs in Malaysia is essential. This study aimed to (i) identify the critical ingredients of institutional support and social competencies that affect online learning satisfaction among students in private HEIs in Malaysia, (ii) assess the influence of these factors on students' online learning satisfaction, and (iii) propose practical recommendations to improve students' online learning experience. By investigating these objectives, this study contributes valuable insights that will foster a more enriching and satisfying online learning environment.

2. Literature review

2.1 Online learning satisfaction

Online learning satisfaction is critical for determining students' academic success in digital educational environments (She et al., 2021). The satisfaction a student obtains from online learning is influenced by their enjoyment throughout the learning journey (Ranadewa et al., 2021). Scholars have expended considerable effort to understand the factors influencing online learning satisfaction. It has been found that students' active engagement, motivation, and commitment to studies are closely linked to satisfaction within online learning settings (Alshehri, 2017; Rajabalee & Santally, 2021; Yilmaz, 2017). Previous studies have revealed that students who experience higher levels of satisfaction can generate positive academic outcomes such as performance, loyalty, and study retention (Eresia-Eke et al., 2020; Pham et al., 2019; Satuti et al., 2020). While existing studies acknowledge the positive influence of institutional support on student satisfaction (Ayuni & Mulyana, 2019; Castro, 2019), the underlying mechanisms of this connection warrant further exploration. As Nasir (2020) emphasised, social presence plays a pivotal role in maintaining engagement and satisfaction. In light of this, the present study posits that students' social competencies in online learning could serve as a bridge between perceived institutional support and learning satisfaction.

To fully comprehend the complexity of online learning satisfaction, the authors explored cognitive presence, a crucial factor that enables students to construct meaning through reflective and critical thinking (Garrison et al., 2000). It involves higher-order thinking, solving complex problems, and integrating new knowledge, thus contributing to students' overall satisfaction with online learning. Several factors come into play, including the quality of instructional materials, the ability of learning activities to promote critical thinking, the degree of intellectual stimulation, and opportunities for meaningful interaction and knowledge construction (Garrison et al., 2000; Kanuka & Garrison, 2004; Simui et al., 2020; Swan et al., 2009).

2.2 Theoretical background

Garrison et al. (2000) initially formulated the Community of Inquiry (CoI) framework. It offers a valuable theoretical perspective for comprehending the significance of computer conferencing and computer-mediated communication (CMC) in facilitating educational experience. This study recognised teachers and students as essential participants in the educational process. The CoI framework suggests that meaningful learning is fostered through active interaction among three crucial presences: cognitive, social, and teaching. Cognitive presence involves engaging in meaningful discussions and reflective activities; social presence involves connecting with a group, engaging in purposeful communication, and building interpersonal relationships; teaching presence includes designing the curriculum, facilitating learning activities, and providing direct instruction to promote student engagement (Garrison, 2009; Garrison et al., 2000).

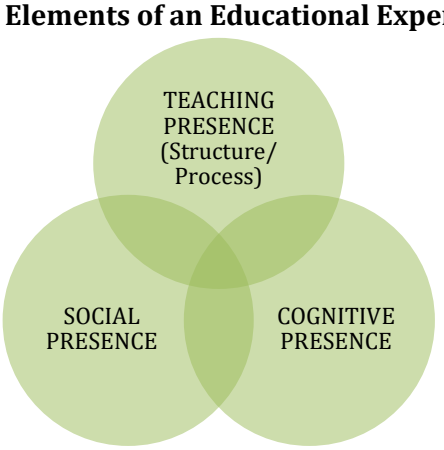

Figure 1: Community of Inquiry (CoI) Framework

The CoI framework shown in Figure 1 serves as the theoretical foundation for this study. This provides insights into the dynamics of collaborative learning and cognitive engagement in online learning (Akyol & Garrison, 2008). Studies by Lau et al. (2021), Nasir (2020), and Nolan-Grant (2019) have explored various aspects of online learning using the CoI framework, and it has been increasingly recognised and applied from an online learning perspective (Yu & Li, 2022). Saadatmand et al. (2017) used the CoI framework to analyse learners' interactions in online courses. They discovered that promoting cognitive engagement and meaningful interactions requires a social and teaching presence, demonstrating the framework's ability to illuminate the complexity of the online learning environment. The present authors extend the CoI framework to reflect adaptability and relevance in understanding the multifaceted aspects of the online learning experience. Building upon this evidence, this study examines the interconnection between students' perceived institutional support, their social competencies with classmates and instructors, and their satisfaction with online learning.

2.3 Conceptual framework

Figure 2 proposes that perceived institutional support and social competencies are related to online learning satisfaction, which represents the teaching, social, and cognitive elements of the conceptual framework. Teaching presence, including instructional design, facilitation, and instruction, can affect students' perceptions of institutional support. It creates a supportive and engaging online learning environment that fosters students' social competencies and learning satisfaction. While social presence fosters social competencies with classmates and instructors through interactions, cognitive presence fosters meaningful learning and critical thinking for online learning satisfaction. Social competencies mediate the relationship between perceived institutional support and learning satisfaction.

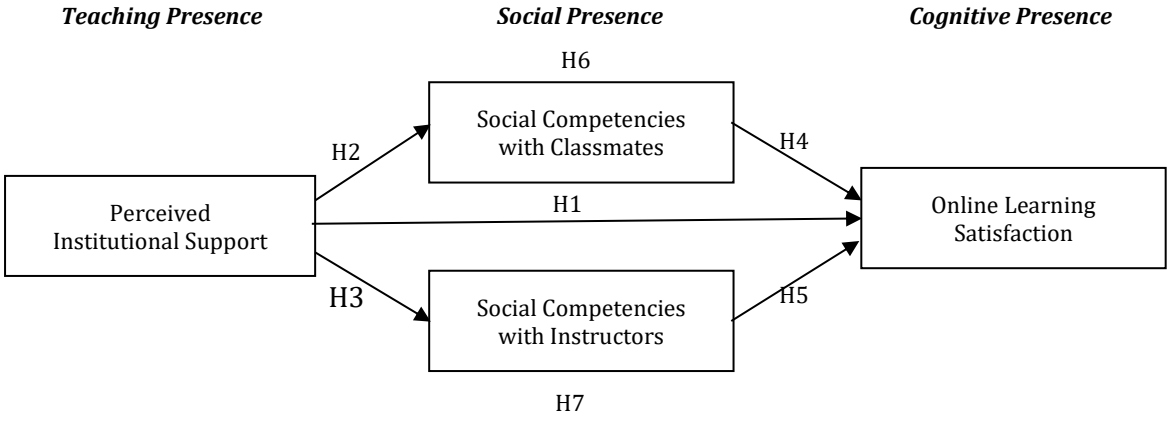

Figure 2: Conceptual Framework

2.3.1 Perceived institutional support and online learning satisfaction

Effective online learning depends on the support provided by educational institutions. This support includes services, resources, privileges, and opportunities for students (Stanton-Salazar, 2011). This aligns with the concept of teaching presence, wherein institutions are responsible for designing and facilitating online courses through resources, support services, and timely feedback to meet students' needs (Anderson et al., 2001; Garrison et al., 2000; Taft et al., 2011). Akyol and Garrison (2008) discovered significant associations between teaching presence and satisfaction, between teaching presence and cognitive presence, and between cognitive presence and satisfaction. These results are similar to those of Shea and Bidjerano (2009), who indicated that students' perceptions of teaching presence significantly predicted their perceptions of cognitive presence. Students who perceived support from their peers, instructors, and technical staff reported higher satisfaction with online classes (Lee et al., 2011). Castro's (2019) meta-analysis emphasised the significance of the active involvement of institutions and instructional design in establishing support systems for both students and educators. The findings highlight the crucial roles of course design, institutional adoption, and academic support in influencing the overall learning experience and facilitating the successful attainment of learning objectives.

Amoozegar et al. (2017) investigated the effects of institutional factors on course satisfaction among Malaysian university students. The results showed that administrative, university, and technical support were crucial for increasing satisfaction with online courses. Similarly, Ayuni and Mulyana (2019) emphasised the significance of institutional support in online learning. They discovered that service quality, encompassing teaching quality, administration service, system quality, and support service, significantly influenced students' satisfaction with online tutorials. Drawing from these previous studies and the CoI framework, it is reasonable to infer a direct and positive relationship between perceived institutional support and online learning satisfaction. Therefore, we propose the following hypothesis:

H1: Perceived institutional support positively influences online learning satisfaction.

2.3.2 Perceived institutional support and social competencies

Social competencies refer to the skills, attitudes, and behaviours that enable individuals to actively engage and interact with their classmates and instructors (Orpinas, 2010). They are essential for building positive relationships, fostering collaboration with others, and creating a supportive and engaging online learning community. As defined by Picciano (2002), social presence pertains to "a student's sense of being in and belonging in a course and the ability to interact with other students and an instructor, although physical contact is not available' (p. 22). Students' perceptions of teaching presence predict their perceptions of social presence (Shea & Bidjerano, 2009). Borup et al. (2015) and Lowenthal et al. (2022) observed that video feedback increases social presence among students, resulting in stronger relationships with instructors. These results suggest that perceived support from institutions, such as feedback, can positively impact social skills among peers and teachers.

Strong et al. (2012) emphasised the significance of a supportive and interactive online learning environment in fostering social presence among students. Moreover, Lowenthal and Dunlap (2018) suggest valuable instructional strategies for establishing and sustaining social presence in online learning. Thus, online instructors must prioritise interactivity and engage students in various interactions (Martin & Budhrani, 2019). Instructional design skills, including course design knowledge and awareness of web accessibility regulations, were deemed crucial for creating a supportive and community-oriented online environment. Thus, it can be inferred that students' perceptions of institutional support can influence their social competence with their classmates and instructors. Therefore, the following hypothesis is proposed:

H2: Perceived institutional support positively influences social competencies with classmates.

H3: Perceived institutional support positively influences social competencies with instructors.

2.3.3 Social competencies and online learning satisfaction

Social presence is vital for overcoming social isolation and fostering connections between online instructors and students (Phirangee & Malec, 2017). Previous research has associated this with essential outcomes in the online learning context (Akyol & Garrison, 2008; Richardson et al., 2017). The significance of social presence is further highlighted by Shea and Bidjerano (2009), who observed that students' perceptions of social presence significantly predicted their cognitive presence. Similarly, Geng et al. (2019) discovered that social presence considerably influences cognitive presence by facilitating sustained student participation and focus, supporting freedom of expression, and fostering a sense of belonging.

Numerous studies have presented empirical evidence supporting the belief that a strong sense of social presence is correlated with higher levels of online learning satisfaction. Akyol and Garrison (2008) employed the CoI instrument to discover notable connections between social presence and satisfaction with online courses. Strong et al. (2012) also discovered that the learning environment and social presence play a role in student satisfaction in online agricultural education courses. Similarly, Richardson et al. (2017) found a significant and positive association between social presence and satisfaction. Kang and Im (2013) discovered that student-instructor interaction emerged as a substantial predictor of students' perceived satisfaction, with instructional communication being the strongest predictor. Interaction with instructors and classmates significantly contributes to students' satisfaction and perceived learning (Fredericksen et al., 2019). Similarly, Ayanbode et al. (2022) demonstrated that various interactions, including student-student, student-teacher, and student-content interactions, positively influence students' satisfaction in an online class. Developing social competencies, such as positive relationships with classmates and instructors, emotional regulation, and cooperative interactions, dramatically enhances students' overall learning experience (Jones et al., 2017).

According to the preceding discussion, engaging meaningfully with classmates and instructors fosters a sense of community and belonging, which is essential for overcoming the social isolation challenges often associated with online learning. Developing a solid perception of social presence enhances students' connection and engagement, resulting in greater satisfaction with their learning experiences (Phirangee & Malec, 2017). Therefore, the following hypothesis is proposed:
H4: Social competencies with classmates positively influence online learning satisfaction.
H5: Social competencies with instructors positively influence online learning satisfaction.

2.3.4 The mediating role of social competencies

The combination of teaching and social presence can account for student variance in cognitive presence. Shea and Bidjerano (2009) findings emphasise the importance of establishing teaching presence to develop social presence, which mediates teaching and cognitive presence. Similarly, Bangert (2008) found that groups with both teaching and social presence had higher cognitive presence levels than control groups or social presence-only groups. The findings of Kozan (2016) also suggest that teaching presence initiatives aimed at enhancing cognitive presence could directly and indirectly influence cognitive presence through social presence. Social presence is crucial for effective engagement and interaction as it contributes to the cohesion necessary for a supportive learning environment. An appropriate online learning setting, supported by the institution, can create a cohesive community that facilitates interactions between students and instructors (Geng et al., 2019).

By emphasizing the interplay between teaching, social, and cognitive elements in digital education, the CoI framework suggests that establishing a supportive and engaging online learning environment through a teaching presence can facilitate student interactions. The results of previous studies indicate that social competencies mediate the association between perceived institutional support and online learning satisfaction. Interactions with classmates and instructors help students develop social competencies, enhancing their ability to utilise and benefit from institutional support. Ultimately, this leads to higher levels of online learning satisfaction. Therefore, the following hypothesis is proposed:
H6: Social competencies of classmates mediate the relationship between perceived institutional support and online learning satisfaction.
H7: Instructors' social competencies mediate the relationship between perceived institutional support and online learning satisfaction.

3. Research methodology

3.1 Target population, data collection, and sampling

This study focuses on students enrolled in private HEIs in Malaysia. These private HEIs were selected according to the Malaysian Quality Evaluation System for University and University College Excellence (SETARA) 2018/2019 and QS World University Rankings 2022, ensuring that diverse and reputable institutions were included in the research. Eight private HEIs participated in the study. Data were gathered from students with experience in online learning, using a survey conducted through purposive sampling. An online questionnaire was created using Google Forms, which is a free application for administering online surveys. The URL questionnaire was shared with students through commonly used online platforms, such as Microsoft Teams, Facebook, and WhatsApp. In total, 419 complete and usable responses were collected and analysed. Additionally, the common method bias was assessed using Kock's (2015) approach. The results in Table 5 confirm that the VIF values are below the suggested threshold of 3.3, indicating no evidence of bias. Table 1 displays an overview of the respondents' profiles, presenting essential information about the study participants.

Table 1: Respondents' Profiles

Variables	Items	Frequencies (N=419)	Percentages (%)
Gender	Female	267	63.7
	Male	152	36.3
Age	≤ 18 years old	11	2.6
	19 – 22 years old	322	76.8
	23 – 26 years old	77	18.4
	27 – 30 years old	6	1.4
	≥ 31 years old	3	0.7
Education level	Foundation	20	4.8
	Diploma	32	7.6
	Bachelor's degree	346	82.6
	Master's degree	19	4.5
	Doctoral Degree	2	0.5
Internet connectivity	Excellent	40	9.5
	Fair	159	37.9
	Good	178	42.5
	Poor	34	8.1
	Very poor	8	1.9

3.2 Instrument development

This study adapted several measurement items from previous studies to ensure reliability and validity of each construct. Perceived institutional support was assessed using seven items adapted from Hirner (2008). For example, one item stated, "My university provides a technical support centre equipped with hardware, software, and trained staff'." Social competencies of classmates were evaluated using five items derived from Cho and Cho (2017), Kuo et al. (2014), and Shen et al. (2013). An example item is, "I can build bonding with my classmates via online discussions." Social competencies of instructors were evaluated using five items taken from Cho and Cho (2017) and Kang and Im (2013). A sample item is, "I express my opinions to my instructor respectfully during online courses." Seven items adapted from Bolliger and Halupa (2012) were used to gauge online learning satisfaction. For instance, one item stated, "I am satisfied with my performance in online courses." Respondents were requested to rate the items related to each concept on a 5-point Likert scale, with "1" denoted "strongly disagree" and "5" denoted "strongly agree." The phrasing of the items was adjusted to align with the specific context of the online learning.

4. Data analysis and results

The current study employed Smart PLS 4 software (Ringle et al., 2022) to analyse the data using Partial Least Squares Structural Equation Modelling (PLS-SEM). Lin et al. (2020) mentioned that PLS-SEM is a widely recognised statistical modelling method in educational research, particularly online learning. The analysis comprised two main steps: evaluating the reliability and validity of the questionnaire through the measurement model and examining the relationships among the variables of interest through structural model analysis.

4.1 Measurement model assessment

The reliability and convergent validity of the model were evaluated for four constructs that were measured reflectively. Table 2 summarises the results, including the factor loadings, reliability measures, and convergent validity analyses. Notably, all factor loadings surpassed the suggested threshold of 0.60 (Chin, 1998), indicating that each item adequately measures its respective construct. Both composite reliability (CR) and Cronbach's alpha were used to assess internal consistency, and their values exceeded the suggested threshold of 0.70 (Hair et al., 2011; Nunnally, 1978), indicating strong internal consistency across all constructs. Convergent validity is supported by Average Variance Extracted (AVE) values higher than 0.50 (Hair et al., 2017),

signifying that each construct accounted for more than 50% of the variance in its indicators, indicating solid convergent validity.

Table 2: Item loadings, internal consistency, and convergent validity

Constructs	Items	Outer loadings	CR	Cronbach's alpha	AVE
PIS	PIS1	0.784	0.926	0.906	0.641
	PIS2	0.732			
	PIS3	0.832			
	PIS4	0.837			
	PIS5	0.762			
	PIS6	0.824			
	PIS7	0.826			
SCC	SCC1	0.829	0.923	0.896	0.706
	SCC2	0.865			
	SCC3	0.870			
	SCC4	0.813			
	SCC5	0.822			
SCI	SCI1	0.818	0.914	0.881	0.680
	SCI2	0.873			
	SCI3	0.878			
	SCI4	0.821			
	SCI5	0.725			
OLS	OLS1	0.848	0.939	0.924	0.687
	OLS2	0.870			
	OLS3	0.877			
	OLS4	0.776			
	OLS5	0.815			
	OLS6	0.798			
	OLS7	0.810			

Note. PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

Two methods were employed to evaluate discriminant validity: The Fornell and Larcker (1981) criterion and the Heterotrait Monotrait Method (HTMT). The Fornell and Larcker criterion examines whether the square roots of the AVE for each construct exceed the intercorrelations with other constructs, suggesting discriminant validity. Similarly, the HTMT criterion assesses discriminant validity by comparing the HTMT values and is achieved when the HTMT values fall below 0.85 (Henseler et al., 2015). The results in Table 3 demonstrate that both criteria confirm discriminant validity, as the square roots of AVE for each construct surpass the inter-correlations with other constructs and all HTMT values are below the specified threshold.

Table 3: Discriminant validity analysis (Fornell and Larcker Criterion)

	PIS	SCC	SCI	OLS
PIS	**0.800**			
SCC	0.566	**0.840**		
SCI	0.560	0.746	**0.825**	
OLS	0.626	0.719	0.737	**0.829**

Note. The square root of AVE is represented by diagonal values (in bold); PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

Table 4 confirms discriminant validity, as the square roots of AVE for each construct surpass the inter-correlations with other constructs and all HTMT values are below the specified threshold.

Table 4: Discriminant validity analysis (Heterotrait-Monotrait Ratio of Correlations)

	PIS	SCC	SCI	OLS
PIS				
SCC	0.623			
SCI	0.622	0.838		
OLS	0.680	0.789	0.812	

Note. PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

4.2 Structural model assessment

Before evaluating the structural model, the potential multicollinearity among the constructs was examined. Variance Inflation Factor (VIF) was used to identify problematic collinearity. A VIF value above 5 indicates high collinearity among the predictor constructs (Hair et al., 2017). Table 5 demonstrates no significant collinearity issues among the predictors as the VIF values were below 5.

Table 5: Collinearity test

Predictor(s)	Outcomes	VIF
PIS	SCC	-
PIS	SCI	-
PIS	OLS	1.571
SCC		2.429
SCI		2.406

Note. PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

After confirming the absence of collinearity, the path coefficients in the structural model were analysed to determine the significance of the relationships. The results of hypothesis testing regarding direct relationships are summarised in Table 6. All hypotheses (H1 to H5) were supported, as *p*-values were found to be less than 0.001.

Table 6: Structural equation modelling results

Hypotheses	*β*	*t*-values	*p*-values
H1: PIS -> OLS	0.247	5.932	0.000
H2: PIS -> SCC	0.566	13.530	0.000
H3: PIS -> SCI	0.560	14.097	0.000
H4: SCC -> OLS	0.300	5.301	0.000
H5: SCI -> OLS	0.375	6.903	0.000

Note. PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

The explanatory and predictive powers of the model were examined after assessing the path coefficient in the structural mode. The coefficient of determination (R^2) was used to explain the extent to which the independent variables could explain the variability of the dependent variable (Wright, 1921). Falk and Miller (1992) suggest a minimum threshold of 0.1 R^2. Table 7 presents R^2 values of 0.320 for SCC, 0.314 for SCI, and 0.646 for OLS, indicating the model's good predictive accuracy.

The effect size (f^2) was determined to evaluate the magnitude of the effect of the predictor variables on the R^2 values of the endogenous variables. PIS predicts SCC and SCI, whereas PIS, SCC, and SCI predict OLS. The f^2 values for the predictors, as shown in Table 7, show that PIS has a significant effect on SCC and SCI (> 0.35), SCI has a medium effect on OLS (> 0.15), and both PIS and SCC have a small-to-medium effect on OLS (Cohen, 1988).

Furthermore, predictive relevance (Q^2) was examined to gauge the accuracy of the predictions made by endogenous variables. A Q^2 value above zero suggests the model can make accurate predictions (Hair et al., 2017). The results in Table 7 validate the predictive relevance of the variables in the model because all their Q^2 values were positive.

Table 7: Model explanatory and predictive power

Predictor(s)	Outcomes	R^2	f^2	Q^2
PIS	SCC	0.320	0.471	0.223
PIS	SCI	0.314	0.457	0.210
PIS	OLS	0.646	0.110	0.438
SCC			0.105	
SCI			0.165	

Note. PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

4.3 Mediating analysis

Mediation analysis was conducted using the approach described by Zhao et al. (2010) to investigate the intermediary functions of SCC and SCI in the connection between PIS and OLS. As shown in Table 8, the findings align with those of the mediation analysis approach.

First, H6 aimed to evaluate whether SCC mediates the association between PIS and OLS. The results indicated a significant indirect effect of PIS on OLS through SCC (β = 0.170; t = 4.839; p < 0.001). The total effect of PIS on OLS is also significant (β = 0.626; t = 17.243; p < 0.001). Even after considering the mediators in the model, PIS still significantly and directly affects OLS (β = 0.247; t = 5.932; p < 0.001). Therefore, SCC was identified as a partial mediator, as evidenced by the significant indirect and direct effects. The mediation type was confirmed as complementary partial mediation because the product of the indirect and direct effects was positive (0.170 × 0.247 = 0.042). Consequently, H6 was supported, indicating that SCC partially mediates the relationship between PIS and OLS.

Similarly, H7 examined whether SCI mediates the association between PIS and OLS. The results indicate a significant indirect effect of PIS on OLS through SCI (β^2 = 0.210; t = 6.483; p < 0.001). Additionally, when the mediators were included in the model, PIS still significantly and directly affected OLC (β = 0.247; t = 5.932; p < 0.001). Thus, SCI was identified as a partial mediator, as indicated by significant indirect and direct effects. The mediation type was confirmed to be complementary partial mediation, as the product of the indirect and direct effects was positive (0.210 × 0.247 = 0.052). Hence, H7 is supported, which indicates that SCI partially mediates the relationship between PIS and OLS.

Table 8: Mediation results

	Indirect Effects of PIS on OLS			Direct Effects (PLS -> OLS)			Total Effects (PLS -> OLS)		
Hypotheses	***β***	***t*-value**	***p*-value**	***β***	***t*-value**	***p*-value**	***β***	***t*-value**	***p*-value**
H6: PIS -> SCC -> OLS	0.170	4.839	0.000	0.247	5.932	0.000	0.626	17.243	0.000
H7: PIS -> SCI -> OLS	0.210	6.483	0.000						

Note. PIS=Perceived Institutional Support, SCC=Social Competencies with Classmates, SCI=Social Competencies with Instructors, OLS=Online Learning Satisfaction.

5. Discussion of findings

This study used the CoI framework to indicate the relationships between perceived institutional support, social competencies with classmates and instructors, and overall satisfaction with online

learning in Malaysian private HEIs. This study supports the hypothesis that students' online learning satisfaction is positively affected by their perceived institutional support (H1). It was found that students who felt well supported by their educational institutions tended to have more positive and fulfilling experiences with online learning. The institution's support, including web-based information, financial aid, communication options, technical assistance, access to resources, and feedback mechanisms, plays a vital role in meeting students' needs and improving their satisfaction. These findings align with previous research highlighting the importance of institutional support in creating a supportive and satisfactory online learning experience (Akyol & Garrison, 2008; Amoozegar et al., 2017; Ayuni & Mulyana, 2019; Castro, 2019; Lee et al., 2011; Mtebe & Raphael, 2018; Pham et al., 2019). When institutions provide support, it helps foster an engaging learning environment, ultimately leading to higher online learning satisfaction.

The results also indicate that students' perceived institutional support positively influences their social competencies with their classmates and instructors (H2 and H3). The results suggest that when students felt that the institution provided strong support, it enhanced their ability to develop practical social skills, engage in meaningful interactions, and establish positive relationships with their classmates and instructors in the online learning environment. These findings align with those of previous studies that highlight the significance of factors such as feedback provision, effective communication options, opportunities for collaboration and interactions, instructor support, student interaction, and a conducive learning environment (Borup et al., 2015; Lowenthal et al., 2022; Lowenthal & Dunlap, 2018; Martin & Budhrani, 2019; Shea & Bidjerano, 2009; Strong et al., 2012). These elements are vital in fostering students' sense of connection, motivation, and engagement in their interactions with their classmates and instructors. Furthermore, institutional support is crucial in creating sociable environments that nurture social competencies with classmates and instructors, foster emotional connections, and enhance students' social presence.

As for H4 and H5, the results showed that students' social competencies with classmates and instructors positively influenced their online learning satisfaction. This suggests that students' ability to interact and collaborate with their classmates and instructors plays an essential role in fostering overall satisfaction with their online learning experience. Proficient communication, collaborative engagement, and participation with classmates strongly contribute to a sense of community, peer support, and shared learning experiences, ultimately enhancing satisfaction with online learning processes. Additionally, proficient interpersonal skills and effective engagement with instructors, such as open communication, active discourse, constructive expression of differing perspectives, sharing concerns, and respectful interaction, significantly contribute to a positive instructor-student relationship and conducive online learning experience, enhancing students' online learning satisfaction. These findings align with those of previous studies that highlight the significance of positive relationships, social interaction, social presence, and the development of social competencies to foster a sense of community, overcome social isolation, and promote satisfaction in online learning environments (Akyol & Garrison, 2008; Ayanbode et al., 2022; Fredericksen et al., 2019; Jones et al., 2017; Kang & Im, 2013; Phirangee & Malec, 2017; Richardson et al., 2017; Strong et al., 2012). When students engage meaningfully with classmates and instructors, express thoughts and emotions, and foster an inclusive and supportive learning environment, it boosts their sense of connection, belonging, and engagement, resulting in greater online learning satisfaction.

Finally, by including social competencies with classmates and instructors as mediators, this study sheds light on the conditions under which perceived institutional support could improve students' online learning satisfaction. Concerning the mediation effects (H6 and H7), this study establishes that students' social competencies with classmates and instructors partially mediate the association between perceived institutional support and online learning satisfaction.

Tailored resources, tools, and support services for online learning provided by institutions establish a conducive environment that empowers students to actively engage with their classmates, instructors, and learning community. When students can connect, communicate, collaborate, and engage with others in a supported environment, they foster a sense of belonging, interaction, shared learning experiences, and personal fulfilment. Ultimately, this comprehensive support and social competence collectively lead to increased satisfaction with the online learning experience (Weidlich & Bastiaens, 2019). The present study aligns with earlier research by Bangert (2008), Geng et al. (2019), Kozan (2016), and Shea and Bidjerano (2009), which emphasise the crucial role of social presence in mediating the relationship between teaching and cognitive presence that influences students' overall online learning experiences. It has been highlighted that social presence bridges teaching and cognitive presence, facilitating engagement, interaction, and a sense of community among students and instructors. Hence, social interaction and cohesion, supported by teaching presence, enhance students' online learning experience.

6. Implications of the study

6.1 Theoretical implications

The theoretical implications lie in applying and validating the CoI framework, which carries a valuable lens for comprehending the dynamics of online learning in the context of Malaysian private HEIs. The interplay between perceived institutional support, social competencies with classmates and instructors, and online learning satisfaction was explored using the CoI framework. This study emphasizes the framework's relevance and effectiveness in capturing the essential foundations for students' successful online learning experiences.

The findings highlight how teaching and social presence are essential for fostering student engagement and cognitive presence during online learning (Garrison et al., 2000; Rourke & Kanuka, 2009). Perceived institutional support, which is considered a component of teaching presence, significantly influences online learning satisfaction (Ayuni & Mulyana, 2019; Nagadeepa et al., 2021). Adequate resources, tools, and support services tailored to online students foster a positive learning environment and enhance student satisfaction. It is crucial that institutions foster social competencies within an online learning environment through effective communication, collaboration, and relationship building. These efforts foster supportive and engaging online learning experiences for the students. Students with excellent social competencies are more likely to experience higher levels of satisfaction. This suggests that developing and cultivating these competencies contributes to a more interactive and engaging online learning environment that aligns with the emphasis on social presence and interaction in the CoI framework.

The theoretical implications also emphasize the significance of educational institutions prioritising and investing in comprehensive support systems for online students. By providing robust institutional support, institutions can enhance their social competencies and ultimately promote higher satisfaction levels in online learning settings. Importantly, this study introduces the novel notion of social competencies and mediates between perceived institutional support and student satisfaction in an online learning setting. This highlights the importance of considering institutional and social factors when examining students' online learning satisfaction.

These findings underscore the significance of establishing a supportive and interactive online learning environment that encourages the development of social competencies to enhance student satisfaction. Thus, institutions should focus on fostering teaching presence, which involves skilfully guiding online instruction and social presence, which facilitates meaningful interaction and dialogue, to enhance the online learning experience and promote cognitive engagement among students. Future research can build upon these insights by utilizing the CoI

framework as a robust theoretical foundation to investigate similar factors in online learning contexts and advance effective online education practices.

6.2 Practical implications

This study emphasises the significance of private HEIs in prioritise and enhancing the support services provided to students engaged in online learning. The results indicate that students' perceptions of institutional support positively affect online learning satisfaction, suggesting that institutions should take proactive steps to address the unique needs of online students and create a supportive learning environment (Rotar, 2022). These measures include ensuring the availability of web-based information tailored for online students, providing financial aid to support online programmes, offering multiple communication options for online support services, establishing technical support centres, and facilitating online access to library resources to address the diverse needs of students. Additionally, institutions should establish mechanisms for regular and objective feedback on online courses to enhance students' perceptions of support and responsiveness, such as instructional guidance, technical support, communication and interaction, complaint management, and resource access. By implementing these measures, private HEIs can create a conducive and supportive online learning environment, ultimately leading to higher levels of satisfaction among students.

This study also highlights the importance of promoting social skills between classmates and instructors to enhance online learning satisfaction (Alenezi, 2022). Instructors should prioritize open communication, encourage students to ask questions, discuss course content, and share their thoughts and concerns. Timely feedback, addressing concerns, and promoting respectful dialogue will help nurture social competencies among classmates and instructors. Instructors must also have expertise and training to navigate the online learning environment proficiently. They should be proficient in online communication tools, virtual discussions, and innovative teaching strategies. Instructors can incorporate these techniques to promote social interaction and engagement, thereby enhancing students' social competencies and online learning satisfaction.

Students should be advised to proactively explore and utilize available support services (Eze et al., 2020). Using web-based resources, online library resources, and technical support can enhance students' learning experiences and overall satisfaction. Awareness of these resources and their incorporation into their online learning routine can contribute to a fulfilling educational journey. Furthermore, the findings emphasize the significance of students actively participating in online discussions, communicating course content with peers, and seeking assistance when needed. Maintaining respectful and timely communication with instructors is crucial. By actively cultivating these social competencies, students can enhance their satisfaction with online learning, promote a sense of belonging, and foster meaningful connections within their community.

7. Limitations and future research

The current study identified certain limitations that provide opportunities for future research and further exploration of online learning satisfaction. One area of improvement is the focus of the sample on Malaysian private HEIs, which may restrict the generalizability of the findings to different institutional settings or cultural contexts. Future research could include a more diverse selection encompassing various types of institutions and cultural backgrounds to strengthen the external validity of the research findings. One potential drawback was that the data relied on self-reported surveys, which may have been biased. Future studies could use mixed methods such as interviews to enhance the findings. Scholars should investigate various factors, including

instructional design, technological infrastructure, and individual characteristics, to gain additional insights into satisfaction with online learning.

8. Conclusion

Overall, this study enhances existing knowledge by exploring the connections between perceived institutional support, social competencies, and satisfaction with online learning in private Malaysian HEIs. The authors have filled this research gap and shed light on the challenges encountered by students in private HEIs concerning online learning satisfaction. Educational institutions can be enlightened by the findings and strategies and interventions can be created to improve perceived support from the institution. Educators and instructors are encouraged to adopt practical teaching approaches, encouraging meaningful interactions and active engagement in online learning. The research knowledge gained can help students navigate social dynamics and improve their learning experience. Overall, the study has the potential to shed light on educational practices and policies, creating an environment that supports student satisfaction and achievements in online education.

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