Examining the Effects among Motivation Needs, Satisfaction, and Instagram Continuance Intention in Malaysian Students

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Abstract

While social media platforms, notably Instagram, have gained traction among university students, this study sought to understand factors influencing their continued use among a segment of Malaysian university students. The primary purpose of this study was to examine the role of satisfaction (SAT) as a mediator in the relationship between various types of motivational needs and the continued intention (CI) to use Instagram. The motivational needs under study included cognitive needs (CN), affective needs (AN), personal integrative needs (PIN), social integrative needs (SIN), and escape needs (EN). This research was built on the foundations of the Uses and Gratifications Theory (UGT) and Expectation Confirmation Theory (ECT). Using a non-probablistic sampling strategy, this study gathered data via questionnaires from a sample of 384 students from six selected universities in Klang Valley. Within the scope of the research sample, a key finding emerged: SAT notably mediates the relationship between CN, SIN, PIN, and CI. This finding illustrates the pivotal role of SAT in the context of UGT and ECT, suggesting that SAT derived from Instagram usage is a critical factor in explaining the sustained engagement of university students, based on specific motivational needs. Within the context of this study's sampled participants, this result offers insights into how SAT, influenced by distinct motivational needs, may impact the intention to continue using Instagram. In practical terms, these insights may assist social media platform developers and educational institutions in understanding and addressing the satisfaction and engagement levels of university users. Simultaneously, the quota sampling strategy employed in this study serves as a valuable model for future research in similar contexts. However, this study recommend that future research expand the sample to include a broader cross-section of Malaysian university students to enhance representativeness and generalizability.

Keywords: satisfaction, motivation needs, continuance intention, Instagram, Malaysia

1. Introduction

The rapid progression of internet technologies catalyzed the emergence and proliferation of social network services (SNS) (Vannucci & McCauley Ohannessian, 2019). In particular, Instagram has become more than just a platform for sharing photos and videos; it has evolved into a significant medium for self-expression, social integration, and information exchange among users (Lu & Lin, 2022). For these users, the satisfaction (SAT) derived from their Instagram experience plays a pivotal role in whether they continue to use the platform (Akdim et al., 2022). In this context, understanding the factors that drive the continuance intention (CI) of users is critically important.

Datareportal (2023) underscores that Instagram has solidified its position as a dominant force in the landscape of social media, seamlessly integrating into the fabric of daily social interactions. Given its ubiquitous presence, this study is inspired to discern the factors determining users' sustained intention to engage with the platform (Kadir & Sütütemiz, 2022). Historically, the bulk of research has centered on the technical dimensions of CI related to social media engagement, often leaning on metrics such as frequency of usage, duration of engagement, and platform-specific attributes (Abed, 2016; Mouakket, 2015; Praveena & Thomas, 2014). Yet, Gogan et al. (2018) critiqued this predominantly technical slant, positing that such approaches might inadvertently overlook users' inherent motivations, a pivotal underpinning of behavioral intentions.

In filling this gap, recent academic pursuits have adopted the perspective of the Uses and Gratification Theory (UGT) to decode the intricacies of user motivations. For instance, Gan and Li (2018) employed a structured questionnaire, targeting WeChat users in China, elucidating the manner in which specific gratifications shaped their persistence in utilizing WeChat based on UGT. Gan and Wang (2014) conducted in-depth interviews and content analysis to explore users' gratifications for using social media.

Meanwhile, a burgeoning body of evidence underscores the intricate nexus between psychological factors and the motivational needs of users (Jin et al., 2023). Empirical endeavors, leveraging quantitative techniques, have authenticated the consequential role of constructs such as SAT (Bae, 2018), the immersive 'flow' experience (Lee & Kim, 2017), and sense of belonging (Guo et al., 2016) in forecasting users' CI. Yet, as Sharabati et al. (2022) highlight, there remains a conspicuous lacuna in the extant literature probing SAT's mediating effect bridging motivational needs and CI. To fill this gap, this study's investigation harnesses the PLS-SEM methodology, rooting this study's inquiry within the foundational tenets of the Expectation Confirmation Theory (ECT).

Research on the CI of social media has been extensive, particularly in Asia, where countries like China, Korea, and Malaysia boast some of the world's highest social media usage rates (Chen et al., 2019; Jin et al., 2023; Yen et al., 2019). Although there is a considerable body of research applying the UGT and the ECT to social media usage, these studies often neglect to examine the mediating role of SAT in influencing CI to use platforms like Instagram. This oversight is particularly relevant for Malaysian university students, who represent a rapidly growing segment of social media users. Instagram had 15.55 million users in Malaysia in early 2022, which was equivalent to 47.2 percent of the total population (Kemp, 2022), yet little is understood about how their specific motivational needs relate to SAT and, in turn, to their CI. This study is poised to make a unique contribution by focusing on the mediating role of SAT in the relationship between various types of motivational needs (cognitive needs, affective needs, personal integrative needs, social integrative needs, and escape needs) and CI among Malaysian university students in Klang Valley. While existing studies have explored aspects of user engagement and satisfaction on Instagram, few have specifically examined this mediating role in the Malaysian context, where cultural and social factors may shape user experience and intentions in distinct ways (Ju et al., 2022).

This study responds to calls in the literature for more context-specific research that considers how local cultural and educational environments shape social media engagement patterns among university students (Kapoor et al., 2018). Understanding the role of SAT within this specific demographic and cultural context can offer valuable insights for both academics and social media platform developers seeking to enhance user experience and retention (Sharabati et al., 2022). To address this research gap, this study adopts a quantitative approach, utilizing questionnaires to gather data from a sample of 384 students from six universities in the Klang Valley, Malaysia. The collected data is then analyzed using PLS-SEM, allowing for a robust examination of the mediating effect of SAT within the proposed model. Therefore, this study had the following two research objectives:

1. To examine the relationship between motivation needs and Instagram continuance intention among Malaysian university students in Klang Valley.

2. To examine the mediating role of satisfaction in the relationship between motivation needs and Instagram continuance intention among Malaysian university students in Klang Valley.

2. Literature Review

2.1 Instagram Continuance Use Intention among University Students in Malaysia

Continuance Intention (CI) in the context of social media, particularly Instagram, is a critical area of study for understanding user behavior and engagement (Gan & Li, 2018). Researchers in various parts of the world have explored factors affecting users' intention to continue using Instagram, analyzing aspects such as user engagement, social influence, and perceived usefulness (Gogan et al., 2018; Yang & Jong, 2021). Despite the platform's global reach, studies reveal that cultural and regional factors can significantly influence CI, suggesting the need for more localized research (Rogers et al., 2014).

Malaysia, with its high social media adoption rate and expanding user base, offered a valuable research landscape (Datareportal, 2022). This study focused on Malaysian university students to explore their CI. Among various social media platforms, Instagram emerged as the most influential among Malaysian university students (Abd-Aziz & Abd-Aziz, 2020), leading to its selection as the study platform. This user demographic is significant given the blend of cultural, social, and technological factors at play in Malaysia, creating a unique user experience and relationship with social media platforms.

While the general factors affecting CI on Instagram have been explored globally, there is a relative paucity of research specifically targeted at understanding the behaviors and attitudes of Malaysian university students. Despite the high social media usage rates in this demographic (Nge et al., 2012), little is known about what motivates these students to continue using Instagram as their preferred social media platform. Furthermore, the unique cultural and social context of Malaysia, coupled with the specific life stage and experiences of university students, may influence CI in ways that are not captured by existing studies.

2.2 Motivation needs from Use and Gratification Theory (UGT)

Motivation needs refer to the underlying dimensions of motivation that drive individuals to use social media

(Al-Menayes, 2015). This study seeks to explain motivation needs through the lens of UGT. Katz et al. (1973) proposed UGT and classified 35 needs summarized from largely speculative literature on the social and psychological functions of mass media into five distinct categories: cognitive needs (CN), affective needs (AN), personal integrative needs (PIN), social integrative needs (SIN), and escape needs (EN). UGT is a critical theory that scholars have extensively employed to explain people's motivation for using specific media (Sun et al., 2017).

CN encompasses the urge to improve information acquisition, knowledge, and understanding (Sundar & Limperos, 2013). AN pertains to the enhancement of aesthetic, pleasurable, and emotional experiences (Ruggiero, 2000). PIN aims to bolster credibility, confidence, stability, and status by combining cognitive and affective components (Stafford et al., 2004). SIN focuses on reinforcing connections with family, friends, and society at large (Quan-Haase & Young, 2010). Lastly, EN expresses the yearning for relaxation and stress relief, frequently resulting in diminished contact with oneself and social roles (Katz et al., 1973).

Previous studies have established a connection between motivation needs and the intention to continue using Instagram. Hwang and Cho (2018) argued that social interaction, entertainment, information acquisition, and self-expression are the key motivation needs that influence Instagram users' intention to continue using the platform. Ko and Yu (2019) posited that bridging social capital, information value, entertainment, and killing time are the critical motivation needs that affect Instagram users' intention to continue using the platform for viewing video-type stories.

Despite these advances, much of the existing research has been conducted in Western contexts, with a notable gap in attention to how these dynamics play out in different cultural settings, including among Malaysian university students – a population that is actively engaged with Instagram. The present study is uniquely positioned to delve into this understudied segment of Malaysian university students in Klang Valley. This study seeks to understand the influence of motivational needs on Instagram Continuance Use Intention among Malaysian university students. These motivational needs are based on the definitions provided by Katz et al. (1973). Based on these premises, the proposed hypotheses for the current study are:

H1: Motivational needs of sampled Malaysian university students in Klang Valley are positively associated with the continuance use intention on Instagram.

H1a: Cognitive needs positively impact the continuance use intention.

H1b: Affective needs positively impact the continuance use intention.

H1c: Personal integrative needs positively impact the continuance use intention.

H1d: Social integrative needs positively impact the continuance use intention.

H1e: Escape needs positively impact the continuance use intention.

2.3 Satisfaction from Expectation Confirmation Theory (ECT)

In accordance with the Expectation Confirmation Theory (ECT), user SAT played a crucial role in determining whether to continue or discontinue using a particular service or product (Bhattacherjee, 2001; Oliver, 1980). Several studies substantiated the strong association between motivational needs and user SAT (Bae, 2018; Gogan et al., 2018; Krasnova et al., 2017; Sun et al., 2017).

For instance, Sun et al. (2017) utilized UGT and ECT frameworks to demonstrate that various gratification needs—including CN, PIN, SIN, and EN—were significantly positively associated with user SAT in a social media context. This demonstrates that when users are able to satisfy these needs through a platform, they tend to report higher satisfaction levels.

Adding another layer, (Gogan et al., 2018) corroborated this by indicating a positive influence of motivational needs on user SAT, considering these needs as different types of gratification factors based on the UGT and S-O-R theory. Similarly, Krasnova et al. (2017) and Bae (2018) reported a positive relationship between users' motivational needs and satisfaction on SNS platforms. Thus, previous studies affirmed a robust link between users' motivation needs and their continuance use intention. Based on these premises, the study proposed the following hypotheses:

H2: Motivational needs of Malaysian university students were positively associated with their satisfaction with Instagram.

H2a: Cognitive needs positively impacted satisfaction.

H2b: Affective needs positively impacted satisfaction.

H2c: Personal integrative needs positively impacted satisfaction.

H2d: Social integrative needs positively impacted satisfaction.

H2e: Escape needs positively impacted satisfaction.

This study probes into the SAT of Malaysian university students with Instagram use, putting a spotlight on the mediating role of SAT in the connection between motivation needs and CI. In this regard, SAT doesn't just emerge in isolation; it is closely intertwined with users' motivation needs.

Sun et al. (2017) illustrated how various gratifications, acting as motivation needs, can give rise to differing levels of SAT among social media users. Their findings underscored the mediating effect of SAT in the link between motivation needs and CI. Specifically, when users perceive that a platform, such as Instagram, meets their cognitive or social needs, they tend to express higher SAT, which in turn fosters a stronger intention to continue using the platform.

Furthermore, emotional attachment and para-social interaction have been studied as other psychological responses that could mediate the relationship between motivation needs and CI (Chiu & Huang, 2015; Gogan et al., 2018). For instance, Gogan et al. (2018) found that users who formed an emotional attachment to a social media platform were more likely to continue using it. Nevertheless, among these various psychological responses, SAT has emerged as particularly central (Guo et al., 2016).

ECT explains that SAT is shaped by the match (or mismatch) between users' initial expectations and their actual experiences with the platform (Oliver, 2014). To illustrate, Bhattacherjee (2001) demonstrated how SAT, built on past experiences, is a strong predictor of a user's decision to continue or discontinue a service.

In an online setting, Kim et al. (2011) suggested that trust and SAT were essential for continued use in electronic commerce. Moreover, research in information systems (Cheung & Lee, 2009) and social media (Lin et al., 2014; Shi et al., 2010) supported a strongly positive relationship between SAT and continued use intention, indicating that users who were more satisfied with their experience were more likely to continue using the platform.

Based on these premises, and with the goal of elucidating these dynamics within the specific context of Malaysian university students, the study proposed the following hypotheses:

H3: Malaysian university students' satisfaction was positively related to Instagram continuance use intention.

H4: The relationships of H1a-H1d were mediated by satisfaction.

H4a: The relationship of H1a was mediated by satisfaction.

H4b: The relationship of H1b was mediated by satisfaction.

H4c: The relationship of H1c was mediated by satisfaction.

H4d: The relationship of H1d was mediated by satisfaction.

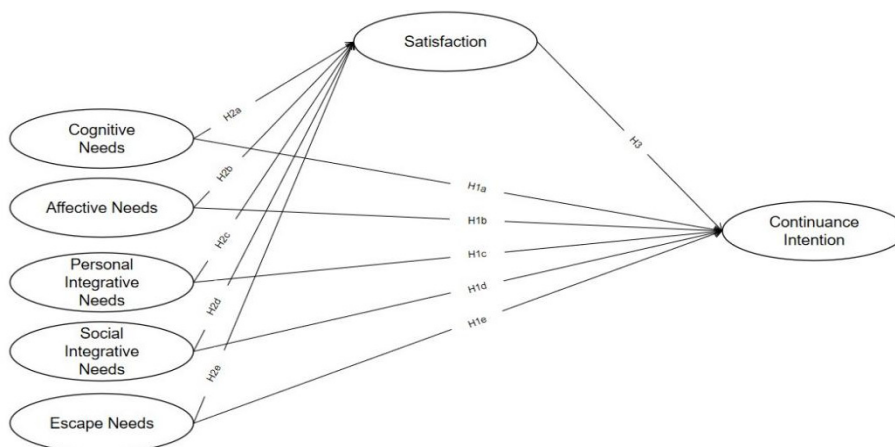H4e: The relationship of H1e was mediated by satisfaction.

Figure 1. Conceptual framework

3. Research Methodology

3.1 Research Design

This study applied a quantitative survey method. This cross-sectional study focused on university students in the Klang Valley for the following reasons: Users in the Klang Valley had the highest penetration rate to social networks compared to users from other states in Malaysia (Alam et al., 2016); the Klang Valley had the highest Internet penetration and the largest college student population (Nge et al., 2012); the Klang Valley served as Malaysia's business hub (Salman & Salleh, 2020). The Klang Valley was also a commonly used geographical area for research on Malaysian university

students (Akhtari-Zavare et al., 2015; Muhammad et al., 2015; Wan Ismail et al., 2020). Thus, the Klang Valley was considered a suitable location for this study.

To ensure a more representative sample, this study expanded the selection of universities beyond the initial plan. This includes public/private institutions and a blend of urban and suburban campuses within the Klang Valley.

3.2 Sampling Technique

This study employed a non-probability quota sampling approach, drawing inspiration from Hashim et al. (2013). The sampling frame for this research is defined by the student populations of six selected universities in the Klang Valley, Malaysia: UM, UPM, UKM, UTM, Taylor's, and UCSI. Although this method was selected for its feasibility and convenience in the data collection process, this study acknowledge that it might not ensure a fully representative sample of all university students in the Klang Valley. Future studies might benefit from referring to established survey methodologies, such as those suggested by Groves et al. (2011), to ensure a more representative sampling approach.

In this study, a non-probability quota sampling approach was utilized, taking inspiration from Fleetwood (2018). Given the extensive and varied student body in the Klang Valley, the sample was segmented by university. It was crucial to include students from each selected institution in our research. Significantly, this study considered the overall student count in each university to maintain a proportional sample size, ensuring that the sample mirrored the student distribution across different institutions.

Non-probability quota sampling is efficient, cost-effective, and less time-intensive (McCombes, 2019). However, it does not guarantee a representative sample akin to probability sampling methods. Therefore, further studies with a more comprehensive sampling approach would be needed to make generalized conclusions about the broader student population.

The sampling frame for this study was derived from population of students attending selected universities in the Klang Valley, Malaysia. It's important to note that while this frame offers a subset of the broader student population, it doesn't encompass the entirety of it. These universities were initially identified based on their geographical location within the Klang Valley (Nge et al., 2012). The frame was further refined using two specific criteria: QS global ranking and campus location. QS ranks within the top 500 are often used as a standard for top-tier universities (QS, 2023). Thus, universities that were not ranked within the top 500 in the QS Global rankings were excluded from the sampling frame. Meanwhile, only universities with campuses located within the Klang Valley were included in the sampling frame.

The final sampling frame, therefore, consisted of six universities. The total population from which the sample was drawn was 160,871 students. This figure is a summation of the student populations at these six universities, based on the most recent data available from various sources including the Department of Higher Education (2022), Unienrol (2023), and direct data from UCSI (2023). Based on Krejcie and Morgan (1970)'s sample size determination method, a minimum of 384 participants were required for this study. Meanwhile, the number of quotas for each university was calculated according to the population of each university (see Table 1).

In cases where the initial outreach did not result in sufficient responses to meet the quotas, additional rounds of solicitation were conducted. This process was repeated until the desired quota for each university was reached. After initial contact with prospective participants, a total of 571 students across the six universities were approached to take part in the study. Of these, 423 students agreed to participate and completed the questionnaire, yielding a response rate of 74.1%. After careful inspection of the completed questionnaires, 39 were deemed to be invalid due to incomplete or inconsistent responses, resulting in 384 valid samples that were used in the final analysis. It meets both the minimum sample size requirements and the specific quota set for each university.

Table 1. Sample size for each university

University	Total	Percentage	Sample Size
UM	40841	25%	97
UPM	28725	18%	69
UKM	33192	21%	79
UTM	31113	19%	74
Taylor	15000	9%	36
UCSI	12000	7%	29
Total	160871	100%	384

Note: UM, Universiti Malaya; UPM, Universiti Putra Malaysia; UKM, Universiti Kebangsaan Malaysia; UTM, Universiti Teknologi Malaysia; Taylor's, Taylor's University; UCSI, UCSI University

3.3 Measurements

To meet the objectives, the questionnaire included a total of 53 items across five sections: Section 1: Motivation Needs; Section 2: Satisfaction; Section 3: Continuance Intention; Section 4: Demographic Factors; Section 5: Instagram Usage Patterns.

In Section 1, motivation needs consisted of five variables (CN, AN, PIN, SIN, EN). CN was measured by eight items, adapted from Bhattacherjee (2001) and Lin et al. (2017). AN was gauged by four items, adapted from Venkatesh and Davis (2000). PIN was evaluated by four items, drawn from Hernandez et al. (2011). SIN was measured using eight items, borrowed from Smock et al. (2011) and Chavez et al. (2020). EN was assessed with ten items, adapted from Smock et al. (2011). In Section 2, SAT was measured by six items, drawn from Bhattacherjee (2001) and Lin et al. (2017). In Section 3, continuance intention (CI) was measured by six items, adapted from Zhang et al. (2017) and Lien et al. (2017). In Section 4, demographic questions were designed to collect information about participants' gender, age, ethnicity, and educational level. Section 5 gathered data on participants' Instagram usage patterns.

To achieve the research aims, this study adopted a 7-point Likert scale to measure variables. The scale ranged from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating more positive opinions. This scale does not include a zero point. The scale begins at "1" rather than "0" to maintain consistency in positive scale labeling, aiding participants in clearly differentiating between levels of agreement without the potential confusion of a zero point. The lowest point "1" represents "strongly disagree'" and the highest point "7" represents "strongly agree." The absence of a zero point is intentional, as the focus of this scale is to measure the level of agreement or disagreement, rather than the presence or absence of sentiment.

The 7-point Likert scale was chosen due to its ability to capture variations in participants' responses more accurately than a 5-point scale (Eutsler & Lang, 2015). 7-point scales tend to be more discriminating and can avoid the tendency of respondents to use the middle position avoidantly when using fewer scale points (Sauro, 2010).

Conducting a pre-test is a crucial step for enhancing the reliability and validity of research instruments, as underscored by Pagano et al. (2020). In alignment with this principle, this study undertook a rigorous pre-test at Universiti Putra Malaysia, engaging a sample of 30 students who met the specified criteria. This sample size aligns with the best practices recommended for pre-test methodologies, as proposed by Perneger et al. (2015). The preliminary data obtained from the pre-test demonstrated satisfactory reliability and validity, thereby establishing a robust foundation for the ensuing formal data collection process.

3.4 Data Collection

Data collection for this study took place over June and July 2023, lasting a total of two months. The researchers obtained the approval letter (Ref No.: JKEUPM-2023-213) for data collection from the Ethics Committee for Research Involving Human Subjects (JKEUPM), Universiti Putra Malaysia, enabling respondents to confirm the authorization before agreeing to participate in the survey. This approval was valid from March 24, 2023, until March 24, 2024.

Quota sampling is a type of non-probability sampling technique in which a specific number or proportion of units is selected non-randomly, based on predetermined criteria (Nikolopoulou, 2022). This study utilized a non-probability quota sampling method, focusing on university students in the Klang Valley. The primary objective of employing this method was to ensure that the sample is diverse and reflects different subgroups within the student population of the selected universities.

Based on each university's student population, specific quotas were established to delineate the number of respondents needed from each university. These quotas were designed to ensure that the sample is proportionate to the size of each university's student population. Participants were selected based on convenience from within each university until the predefined quota for that university was met. For instance, the study might have used class lists, campus clubs, or online forums as sources to approach potential participants, with researchers continuing to solicit participation until the quota for each university was fulfilled.

3.5 Data Analysis

In the data analysis, the demographic characteristics of participants were detailed. The study used SPSS to conduct descriptive statistical analysis. Furthermore, Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to test the relationship between motivation needs and CI, and the mediating effect of SAT on this relationship. Structural Equation Modeling (SEM) can be covariance-based (CB-SEM) or PLS-SEM. While CB-SEM is primarily used to test theories or compare one theory to an alternative, PLS-SEM aims to predict key target constructs or extend an existing theory in exploratory research (Hair et al., 2017). Given that the purpose of this study was to develop a new research model and build theories based on the integration of two different theories, the choice of PLS-SEM was appropriate.

4. Results

Table 2 displayed the distribution of participants across five primary demographic factors: University, Gender, Age, Ethnicity, and Education. Within the University category, UM represented the largest group at 25.4%, followed by UKM and UTM. Taylor's University and UCSI University were the least represented. Regarding Gender, males accounted for 55.4% and females for 44.5%. Most participants fell into the 18-25 age group (57.2%). Within Ethnicity, Chinese (41.4%) and Bumiputra (40.1%) were most represented, while Indian and other ethnicities comprised a smaller proportion. Bachelor students made up the majority of the participants (47.3%), followed by master's students (36.4%) and PhD students (16.1%).

Among the 148 students who were approached but did not participate in the survey (constituting a non-response rate of 25.9%), several reasons for non-participation were identified: time constraints due to academic commitments, lack of interest in the topic of the research, privacy concerns despite assurances of confidentiality, and other unspecified reasons.

Table 2. Distribution of participant by demographic factors (N = 384)

Profile	Frequency	Percentage
University		
UM	97	25.4%
UPM	69	17.9%
UKM	79	20.6%
UTM	74	19.3%
Taylor's	36	9.3%
UCSI	29	7.5%
Gender		
Male	213	55.4%
Female	171	44.5%
Age		
<18	7	1.8%
18-25	220	57.2%
26-35	113	36.6%
>35	20	5.2%
Ethnicity		
Bumiputra	154	40.1%
Chinese	159	41.4%
Indian	28	7.2%
Other	43	11.2%
Education		
Bachelor	182	47.3%
Master	140	36.4%
PhD	62	16.1%

Confirmatory Composite Analysis (CCA) is a series of steps that can be executed with PLS-SEM to confirm both reflective and formative measurement models (Hair et al., 2020). This study used CCA to ensure the reliability and validity of the data, incorporating internal consistency (Cronbach's alpha, composite reliability, Dijkstra-Henseler's rho), convergent validity (factor loadings and average variance extracted), and discriminant validity in terms of HTMT criteria. Table 3 displayed the internal consistency and convergent validity of the independent variables. The thresholds for all indicators were provided by Ringle et al. (2022). The factor loadings of all variables ranged from 0.843 to 0.927, all greater than 0.708, demonstrating acceptable results. Cronbach's Alpha values ranged from 0.900 to 0.971, all greater than 0.7, indicating acceptable results. Regarding CR, all values varied from 0.900 to 0.973, all greater than 0.7, again displaying acceptable results. AVE values ranged from 0.731 to 0.832, all greater than 0.5, indicating acceptable results. Therefore, the independent variables demonstrated acceptable internal consistency and convergent validity in this study.

Table 3. Internal consistency and convergent validity

Variable	Items	Factor loading	Cronbach's Alpha	CR	rho_A	AVE
Cognitive needs	CN1	0.913	0.970	0.973	0.975	0.827
	CN2	0.899				
	CN3	0.902				
	CN4	0.912				
	CN5	0.917				
	CN6	0.899				
	CN7	0.917				
	CN8	0.917				
Affective needs	AN1	0.876	0.919	0.923	0.943	0.804
	AN2	0.911				
	AN3	0.891				
	AN4	0.909				
Personal integrative needs	PIN1	0.871	0.900	0.900	0.930	0.770
	PIN2	0.881				
	PIN3	0.881				
	PIN4	0.876				
Social integrative needs	SIN1	0.926	0.971	0.972	0.975	0.832
	SIN2	0.927				
	SIN3	0.908				
	SIN4	0.911				
	SIN5	0.914				
	SIN6	0.898				
	SIN7	0.896				
	SIN8	0.918				
Escape needs	EN1	0.856	0.959	0.961	0.964	0.731
	EN2	0.874				
	EN3	0.861				
	EN4	0.865				
	EN5	0.850				
	EN6	0.859				
	EN7	0.844				
	EN8	0.852				
	EN9	0.843				
	EN10	0.844				
Satisfaction	SAT1	0.857	0.940	0.942	0.953	0.770
	SAT2	0.878				
	SAT3	0.883				
	SAT4	0.879				
	SAT5	0.895				
	SAT6	0.873				
Continuance Intention	CI1	0.879	0.938	0.938	0.951	0.763
	CI2	0.845				
	CI3	0.876				
	CI4	0.881				
	CI5	0.876				
	CI6	0.882				

Note: CN, cognitive needs; AN, affective needs; PIN, personal integrative needs; SIN, social integrative needs; EN, escape needs; SAT, satisfaction; CI, continuance Intention; AVE, average variance extracted; CR, composite reliability

Running the PLS algorithm in SmartPLS provided the heterotrait-monotrait ratio of correlations (HTMT) results. Henseler et al. (2015) recommended the HTMT method for assessing discriminant validity of data. Ringle et al. (2022) stated that discriminant validity is established between two reflective constructs if the HTMT value is below 0.90. As shown in Table 4, the HTMT values for all constructs in this study were less than 0.90, indicating good discriminant validity across all variables.

Table 4. Result of HTMT for discriminant validity

	AN	CI	CN	EN	PIN	SAT	SIN
AN							
CI	0.528						
CN	0.356	0.472					
EN	0.223	0.463	0.211				
PIN	0.211	0.613	0.303	0.297			
SAT	0.241	0.544	0.320	0.277	0.398		
SIN	0.140	0.468	0.274	0.240	0.361	0.357	

Note: CN, cognitive needs; AN, affective needs; PIN, personal integrative needs; SIN, social integrative needs; EN, escape needs; SAT, Satisfaction; CI, Continuance Intention

To evaluate the proposed hypotheses, a bootstrapping technique was employed. Bootstrapping is a nonparametric method that aids in testing the statistical significance of various PLS-SEM outcomes (Hair et al., 2022). Subsamples are generated by selecting observations from the original dataset using a convenience sampling method, which are subsequently used to estimate the PLS path model. This process is iteratively performed until a substantial quantity of random subsamples is accumulated, typically around 10,000 (Ringle et al., 2022). Accordingly, this research examined the model through 10,000 bootstrap iterations. Table 5 presented the results of hypothesis testing for H1a-H1e, H2a-H2e, and H3. Among these hypotheses, H2e was rejected while all others were supported.

Table 5. Results of Hypothesis testing in direct effect

Hypothesis	Relationship	Std. beta	Std. error	t	p	Remarks
H1a	CN→CI	0.227	0.040	5.668	0.000***	Support
H1b	AN→CI	0.189	0.039	4.795	0.000***	Support
H1c	PIN→CI	0.234	0.036	6.536	0.000***	Support
H1d	SIN→CI	0.187	0.038	4.925	0.000***	Support
H1e	EN→CI	0.194	0.039	4.948	0.000***	Support
H2a	CN→SAT	0.141	0.059	2.407	0.016*	Support
H2b	AN→SAT	0.120	0.059	2.016	0.044*	Support
H2c	PIN→SAT	0.200	0.058	3.468	0.001**	Support
H2d	SIN→SAT	0.185	0.059	3.125	0.002**	Support
H2e	EN→SAT	0.122	0.063	1.933	0.053	Reject
H3	SAT→CI	0.192	0.038	5.060	0.000***	Support

Note: CN, cognitive needs; AN, affective needs; PIN, personal integrative needs; SIN, social integrative needs; EN, escape needs; SAT, Satisfaction; CI, Continuance Intention; Significance level: *p < 0.05, **p < 0.01, ***p < 0.001

Table 6 presented the results of hypothesis testing for the mediating effects. Following the recommendations of Zhao et al. (2010), the mediation effect can be determined by evaluating whether the direct effect, indirect effect, and total effect are significant. Based on the results of hypothesis testing for the mediating effects, H4a, H4c, and H4d were supported, while H4b and H4e were rejected.

Table 6. Results of hypothesis testing for the mediating effects

Hypothesis	Relationship	Indirect effect	Direct effect	Total effect	Remarks
H4a	CN→SAT→CI	0.032*	0.000***	0.000***	Partial mediation
H4b	AN→SAT→CI	0.070	0.000***	0.000***	No mediation
H4c	SIN→SAT→CI	0.007**	0.000***	0.000***	Partial mediation
H4d	PIN→SAT→CI	0.004**	0.000***	0.000***	Partial mediation
H4e	EN→SAT→CI	0.069	0.000***	0.000***	No mediation

Note: p1 · p2, the indirect effect; p3, the direct effect; p1 · p2 · p3, the total effect; CN, cognitive needs; AN, affective needs; PIN, personal integrative needs; SIN, social integrative needs; EN, escape needs; SAT, Satisfaction; CI, Continuance Intention; Significance level: *p < 0.05, **p < 0.01, ***p < 0.001

5. Discussion

The data analysis results of this study examined the relationship between motivational needs and CIof Instagram use. The findings supported the related hypotheses, indicating that CN, AN, PIN, SIN, and EN all positively correlated with Instagram continuance use intention among Malaysian university students in Klang Valley. These results aligned with

previous research (Gogan et al., 2018; Hwang & Cho, 2018) that examined social media CI from the perspective of Katz et al. (1973)'s UGT and identified the gratifications users derived from SNS.

As for the relationship between motivational needs and SAT, the research delineated a positive correlation between motivational needs (CN, AN, PIN, SIN) and SAT with Instagram use among a segment of Malaysian university students in Klang Valley. Drawing from the ECT (Bhattacherjee, 2001), the findings underscored SAT's critical role in preserving users' emotions (Gogan et al., 2018). Moreover, the results corroborated prior research, suggesting an enhancement in user SAT when Instagram successfully catered to their CN, PIN, and SIN. These findings were consistent with prior studies (Bae, 2018; Gogan, 2020; Gogan et al., 2018; Krasnova et al., 2017; Sun et al., 2017) that emphasized the positive influence of these needs on user SAT. They highlighted the importance of tailoring social media features to user needs to increase SAT and ensure sustained usage.

However, EN didn't demonstrate a similar positive association with SAT among students in Klang Valley. This result diverged from previous studies (Li et al., 2015; Sun et al., 2017). One possible explanation for this discrepancy could be attributed to Instagram's specific emphasis on aesthetic and curated self-presentation (Harris & Bardey, 2019). Unlike other social media platforms where users may engage for various reasons including escape or tension-release, Instagram is often characterized by its focus on visually curated, high-quality content, and the widespread practice of presenting an idealized version of oneself (Caldeira et al., 2021). This distinctive feature of Instagram may cater to different user gratifications that did not align strongly with the EN of the sampled Malaysian university students. Instagram, as a platform, places a significant emphasis on visual storytelling through carefully crafted images and videos (Caliandro & Graham, 2020). This could mean that the students may use Instagram more for social comparison, self-presentation, or inspiration, which are motivations that may not directly correlate with EN, thus potentially explaining the observed insignificance in this study.

Furthermore, this study found that SAT positively mediated the relationship between CN/SIN/PIN and CI among Malaysian university students. When these needs were met, user SAT increased, driving continued Instagram use. These findings aligned with theories suggesting that meeting CN like information acquisition, PIN such as self-presentation, and SIN like interpersonal interaction could enhance users' SAT (Bhattacherjee, 2001).

However, SAT didn't mediate the relationship between AN/EN and CI. The absence of a mediating effect of SAT in the relationship between AN and CI suggested that users' AN might directly influence their intention to continue using Instagram, without being mediated by their SAT levels. Users' emotional experiences and gratifications derived from Instagram use might have a more direct and immediate impact on their continuance use intention (Apodaca, 2017), bypassing the role of SAT as a mediator. Additionally, the rejection of H4e indicated that SAT alone might not explain or influence users' intention to continue using Instagram based on their EN. It's possible that Instagram, being a visually-oriented platform centered around social interaction and content sharing (Ferry, 2020), might not strongly align with the specific needs for escape or tension-release. Users might seek other outlets or platforms, like TikTok (Sharabati et al., 2022), that better fulfilled their EN, such as dedicated entertainment or relaxation applications.

6. Conclusion

This study, based on UGT and ECT, examined the influence of motivational needs and SAT on continued Instagram use among Malaysian university students. It demonstrated that SAT mediated the relationship between CN/SIN/PIN and CI. However, the mediation effect of SAT was not observed between AN/EN and CI. This suggested varying influence levels of different motivational needs on SAT and CI, underlining the complexity of these relationships. These findings contributed to understanding social media use, aiding platform developers, policymakers, and educators in strategy development for enhancing user SAT and promoting beneficial social media use. They paved the way for further research into additional factors influencing SAT and continued social media use.

The results of this study had far-reaching theoretical and practical implications. Theoretical implications arose from the study's contribution to the understanding of Instagram CI among a segment of Malaysian university students in Klang Valley. By examining the role of motivation needs and SAT, the study shed light on the underlying factors that drove individuals to continue using Instagram. This enhanced our theoretical understanding of the UGT and ECT by linking them to the concept of SAT as a mediating variable. Regarding practical implications, the study provided valuable insights into social media platforms, particularly Instagram, emphasizing the need to align with the motivation needs and SAT of university students (Hussain, 2019). For example, Instagram could enhance user engagement by facilitating personal expression and escapism through immersive experiences, such as augmented reality filters (Flavián et al., 2021) and interactive storytelling tools (Lim & Childs, 2020). Recognizing SAT as a crucial mediator between motivational needs and platform use continuation (Hussain, 2019), platforms could tailor features to increase user SAT. Features focusing on PIN could include customizable profiles and interactive communication tools (Hussain, 2019). For SIN, platforms could invest in community-building features (Sobré-Denton, 2016) and group functionalities (Swart et al.,

2019). For EN, platforms could focus on entertainment and immersive experiences (Hristova et al., 2022). Ultimately, these findings underscored the importance of prioritizing user SAT in meeting motivation needs. A user-centric approach that aligned with the desires and expectations of university students could lead to increased engagement and continued platform usage.

The novelty of this study's sampling strategy is underscored by its selective and deliberate incorporation of both public and private universities, as opposed to focusing solely on public institutions as in Hashim et al. (2013). While Hashim et al. (2013) targeted twelve public universities in the Klang Valley, this study extends its scope to encompass prestigious private institutions as well, such as Taylor's and UCSI. This is a distinctive approach that provides a broader and more comprehensive view of the student population in the Klang Valley region. Additionally, the study introduces an innovative criterion based on international university rankings (QS ranks) as a key factor in the selection process. This segmentation prioritizes top-tier institutions, potentially enhancing the broader relevance and impact of the study's findings on an international level. Moreover, the quota sampling approach in this study is meticulously designed to mirror the actual proportions of the student populations across the selected universities, which is a refined method that seeks to enhance the representativeness and validity of the sample. These aspects together position this study as a unique contribution to the literature, offering new insights into Instagram use among a diverse and prestigious segment of Malaysia's university students.

While this study aimed to explore the relationship between motivation needs, SAT, and CI among university students, it is important to note that the sample was specifically drawn from six universities in Klang Valley, Malaysia. These universities were selected based on certain criteria including their QS Global rankings and location. As the sample was derived through a quota sampling method, the findings of this study are particularly relevant to the student populations of these six universities and may not be directly generalizable to all Malaysian university students. Therefore, the results should be interpreted with this context in mind, recognizing the specific and localized nature of the sample. Widening the scope of the sample beyond university students and the Klang Valley region could have offered more representative results, reflecting a broader spectrum of cultural, social, and economic influences (Mohd Fadhli et al., 2022; Serdar et al., 2021).

Meanwhile, considering sample size effects on statistical power and precision could have enhanced the reliability of findings in future research. In addition, future studies could utilize longitudinal or experimental designs to establish causality and track changes over time, employ qualitative research methods for an in-depth understanding of motivation needs, and explore Instagram CI using theories such as technology acceptance theory (Hwang & Cho, 2018), innovation diffusion theory (Yen et al., 2019), and media system dependency theory (Bae, 2018). Furthermore, incorporating other popular social media platforms like Facebook, YouTube, and WhatsApp could provide comprehensive insights. Additionally, with the advancement of technology, emerging metaverse platforms could also be studied, such as Zepeto (Park & Kim, 2022), which could assist people in embracing the forthcoming metaverse era.

publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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