

Key Determinants of Instagram Usage Among Malaysian Public University Students: An Extended Technology Acceptance Model

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Abstract

This research seeks to investigate the influencing factors affecting students' intention of Instagram usage in Universiti Putra Malaysia. Drawn on the theoretical framework of the Technology Acceptance Model (TAM), social influence and self-efficacy were additionally incorporated to extend the TAM. A total of 373 online questionnaires were distributed to the targeted respondents. The PLS-SEM was applied for data analysis and the outcome shows that behavioral intention was positively anticipated by perceived usefulness, perceived ease of use, and social influence, while behavioral intention significantly impacts actual use. Meanwhile, the moderating effect of self-efficacy was found insignificant. The current study brings about empirical evidence in terms of the predictors anticipating students' intention to use Instagram as an interactive platform by extending the TAM model. The outcome of the paper can serve as guidance for service providers in improving Instagram in the future.

Keywords: Instagram, behavioral intention, actual use, technology acceptance model, Malaysia

1. Introduction

Nowadays, the Internet has been decisively influencing the daily lives of people (Tao & Lv, 2022). With the rapid advancement of information communication technologies, social media has experienced rapid advancement worldwide (Fan et al., 2017). Social media, considered web-based applications which were built based on Web 2.0, is combined with information communication technology and social networks (Liu et al., 2018). Social media is the online platform that enables users to create public and personal accounts to interact with their contacts. Since the existence of social media, its influence has rapidly increased, with a growing number of social media users (Howe, 2023).

Global social media users have reached 4.62 billion in January 2022 to 4.72 billion in January 2023, which accounts for 3% growth (Chaffey, 2023). The users are allowed to chat, message, posting images and videos via social media platforms such as Twitter, Facebook, and Instagram (Alshurideh et al., 2019), and users' social relationships can be facilitated (Nedra et al., 2019). The acceptance of mobile phones for using social media platforms has become a trend. By applying mobile technologies, anyone can access social networks through the mobile internet. At present, students are the majority of social media users (Hoi & Le, 2021).

Instagram is seen as one of the representative social media platforms which were invented in 2010 and it has become the most influential platform (Hu et al., 2014). On Instagram, users are enabled to edit and share images and moments (Hwang & Cho, 2018). According to Instagram Report, the total number of Instagram users reached 1.3 billion in 2020. Compared with 2019, there was a growth of 200 million users. Considering the competitive investigation among presentative social media services like Facebook and Twitter (Hwang & Cho, 2018), the penetration of Instagram is worthy to focus on. Social media has led to several issues for student users such as low concentration and a decline in academic performance (Mohammed et al., 2021). Thus, the predictors affecting the acceptance of social media have become a crucial topic to be investigated.

Although social media has become an integral part of people's daily life worldwide (Alshurideh et al., 2019), the adoption of social media in the educational context is still in the early stage (Al-Qaysi et al., 2020). Hence, to narrow this contextual gap, more relevant research on social media acceptance is required to be carried out. The present research aims to determine the adoption of Instagram among students of Universiti Putra Malaysia (UPM).

In addition, extensive studies examined the main factors which are perceived ease of use and perceived usefulness influencing the adoption of social media drawn on the Technology Acceptance Model (TAM). Yet, the factors are not sufficient to determine the adoption of SNS (Jo, 2022). This paper attempts to apply external influential predictors, namely social influence in the acceptance of social media. Also, Rehman et al., (2019) highlighted that behavioral intention is not the unique factor that predicts the actual use behavior, there is a need to adopt a moderator between behavioral intention and actual usage. Similarly, as indicated by Fatima et al., (2019), despite past research found self-efficacy as an influential predictor of behavioral intention, however, the factors influencing behavioral intention and actual use are still unwell known. Thus, this paper examined self-efficacy as a moderating variable in the relationship between behavioral intention and actual use of Instagram.

This study was conducted in a UPM, as Instagram is widely accepted by Malaysian users (Howe, 2023). As reported by the Malaysian Communications and Multimedia Commission (MCMC) in 2020, Malaysian Instagram users have reached 63.1% of the total population, which indicates an increase of 6.1% compared with 2018.

This study is conducted based on the Technology Acceptance Model (TAM) which was proposed by Davis (1989) as it provides a systemic conceptual model for this research. Shown by TAM, perceived usefulness and perceived ease of use positively predict the adoption of technology. Past studies in social media adoption suggested that perceived usefulness and perceived ease of use positively impact users' social media acceptance (Owusu et al., 2019; Munir et al., 2021; Salloum et al., 2021). Based on the above discussion, the current research aims to examine the factors influencing Instagram usage among UPM students in a Malaysian context.

2. Literature Review

Technology Acceptance Model (TAM)

The technology acceptance model (TAM) explains the users' adoption of technology through two constructs which are perceived usefulness (PU) and perceived ease of use (PEOU) (Abu-Dalbouh, 2013). Davis (1989) suggested that PU and PEOU in TAM are two critical determinants influencing the adoption or utilization of information technology. Added by Karahanna and Straub (1999), TAM has been considered important in determining the effect of PU and PEOU on the acceptance process of information technology. PU and PEOU have been extensively adopted as predictors in considerable research for anticipating the usage of information systems (Doll et al., 2010). The model explains that the decisions of users are influenced by some factors when they encounter a new technology (Chen & Aklidikou, 2020). Numerous researchers have concluded the significant role of PU and PEOU towards the acceptance of technology (Susanto & Aljoza, 2015). In the present research, the TAM was applied as the underpinning theory. Considering the deficiency of the model, it has limitations in predicting the acceptance of Instagram among university students, and external constructs are needed to incorporate into the model (Chen & Aklidikou, 2020).

Perceived Usefulness and Behavioral Intention to Use Instagram

PU is one of the influential determinants towards acceptance of technology. PU is considered the level to which people believe that the utilization of specific technology promotes their performance (Al-Rahmi et al., 2021). As indicated by Davis (1989), specific technology with a higher level of PU enhances the performance of its users. Therefore, this research considered PU as the degree to which a student's use of Instagram would enrich their interaction. The association between PU and users' behavioral intentions has been discussed by several researchers. For instance, Davis (1989) and Adams et al., (1992) found perceived usefulness as an influential antecedent on the intention and behavior of users.

According to Almaiah and Alismaiel (2019), PU was found to be a strong influential factor related to the acceptance of mobile services. In examining the factors influencing acceptance of social media platforms, Owusu et al., (2019) revealed that PU was found as the key influential factor influencing users' intention to use Facebook. A similar viewpoint given by Al-Rahmi et al., (2021) showed that PU was considered the most influential determinant of mobile platform adoption. Users who apply social media services confirm the usefulness of possessing strong motivation to apply online services. Moreover, PU was found as one of the most predictive motivates for university educators to apply social media applications (Alamri et al., 2020; Thanomsing & Sharma, 2022). According to the statement described above, this research hypothesized that:

H1: Perceived usefulness positively affects the student's behavioral intention to use Instagram.

Perceived Ease of Use and Behavioral Intention to Use Instagram

In TAM, PEOU is another main predictor affecting behavioral intention and the use of technology (Alamri et al., 2020). PEOU is defined as the extent to which individuals perceive the use of specific technology requires less mental and psychical effort (Davis, 1989). In the present research, PEOU is defined as the extent to which students perceive that the use of Instagram requires less effort. Davis (1989) pointed out that PEOU has a significant influence on the acceptance of technology. In addition, as found by Alenazy et al., (2019), the continuous intention to use social media was intensively

affected by PEOU. This finding was in line with the viewpoint of Coa and Setiawan (2017) that PEOU positively impacts the attitude of users in terms of technology. Al-Qaysiet al., (2021) and Owusu et al., (2019) suggested that PEOU positively influences users' intention toward the use of technology. In conclusion, once users perceive the ease of use of specific social media platforms, their intention to use the services would be promoted (Hwang & Cho, 2018). According to prior research conducted by researchers, the study postulated:

H2: Perceived ease of use positively influences the student's behavioral intention to use Instagram.

Social Influence and Behavioral Intention to Use Instagram

Social influence (SI) is considered the viewpoint of individuals about technology within a social context (Venkatesh et al., 2003). Açıkgül and Şad (2021) mentioned that SI has a significant role in predicting the adoption of mobile technology because the technology in the educational environment was significantly impacted by social factors. This argument was supported by Omotayo and Salami (2018) and Puriwat and Tripopsakul (2021) who reported that SI has a positive effect on individuals' willingness to use social media for knowledge sharing and business.

Chua et al., (2018) mentioned that SI is the extent to which individuals perceive that significant people around them (peers and family) trust that they should adopt the system. Liu et al., (2018) also proved that perceived social influence is the stimulator that influences students' opinions and intentions to accept social network sites. SI was revealed to affect the acceptance of social networks among students (Salloum et al., 2021). Additionally, while conducting research among 400 consumers, Gharaibeh et al., (2020) concluded there is a significant association between SI and behavioral intention to adopt mobile commerce.

Owusu et al., (2019) pointed out that SI has a significant effect on students' behavioral intention to adopt social networking sites for educational purposes. This finding is consistent with the study by Chua et al., (2018), who asserted that the actual use of social networking applications is determined by SI. Furthermore, SI significantly affects users' behavioral intention toward social media applications (Kucukemiroglu & Kara, 2015). Consequently, there is a need for a current study to determine the association between SI and students' behavioral intention to use Instagram. This leads to the development of the research hypothesis as below:

H3: Social influence positively impacts the student's behavioral intention to use Instagram.

Behavioral Intention and Actual Use of Instagram

According to Ain et al., (2016), behavioral intention (BI) refers to the willingness of individuals to accept technology. Thus, the influential predictors that lead to the BI indicate the level of the intention of people to participate. BI is defined as the intention of a person to perform a specific behavior (Hwang et al., 2019). The actual use (AU) is defined as the extent of users utilizing a system (Awwad & Al-Majali, 2015). As indicated by Venkatesh et al., (2003), BI can significantly predict the use behavior and actual use of the technology. Hence, to investigate whether students use Instagram as a platform for interaction, the BI of students towards AU should be determined.

Numerous past research (Alshurideh et al., 2019; Kong et al., 2021; Al-Sabaawi et al., 2021) on social media use have revealed a significant correlation between BI and AU. Al-Rahmi et al., (2021) also considered BI as a significant determinant of students' use behavior of social media in the higher education context. Besides, BI was confirmed to be a significant indicator of consumers' actual use of mobile payment systems (Gupta & Arora, 2020). Al-Rahmi et al., (2021) suggested students' BI in terms of mobile learning acceptance is positively associated with students' AU of mobile learning. In the same vein, the study carried out by Win et al., (2021) also confirmed that BI performs a positive impact on the use behavior of students on mobile banking. Based on the revealed of past studies, the below hypothesis was proposed:

H4: Behavioral intention positively affects the students' actual use of Instagram.

The moderating role of Self-Efficacy on Behavioral Intention to use Instagram and Actual Use of Instagram

In general, self-efficacy (SE) refers to an individual's belief in his or her ability to perform a particular behavior (Bandura, 1997). As pointed out by Venkatesh and Davis (2000), SE is an influential factor impacting the utilization of specific technology. The SE brings a significant effect on the behavioral intention of students. The SE has been investigated in various literature on information and communication technology, for instance, Khan et al., (2021) highlighted that SE was found as a significant factor leading to the actual use of social media among students. In addition, Ho et al., (2020) noted that SE is associated with the usage behavior of students in Taiwan and Vietnam. Moreover, a study conducted by Joo et al., (2018) on the relationship between teachers' SE and the usage of technology in the classroom confirmed a significant relationship between them. Another research was carried out by Adhikari and Panda (2018), revealing the positive association between SE and the use of social networks among students.

Although the current research agrees with the effect of SE on the usage of technology, researchers suggest that SE has a significant moderating effect on the relationship between behavioral intention and actual use. To determine the

moderating impact of SE, the present research hypothesis was proposed:

H5: Self-efficacy significantly moderates the relationship between behavioral intention and actual use of Instagram, where the higher the self-efficacy of the users, the higher the tendency of actual use of the technology.

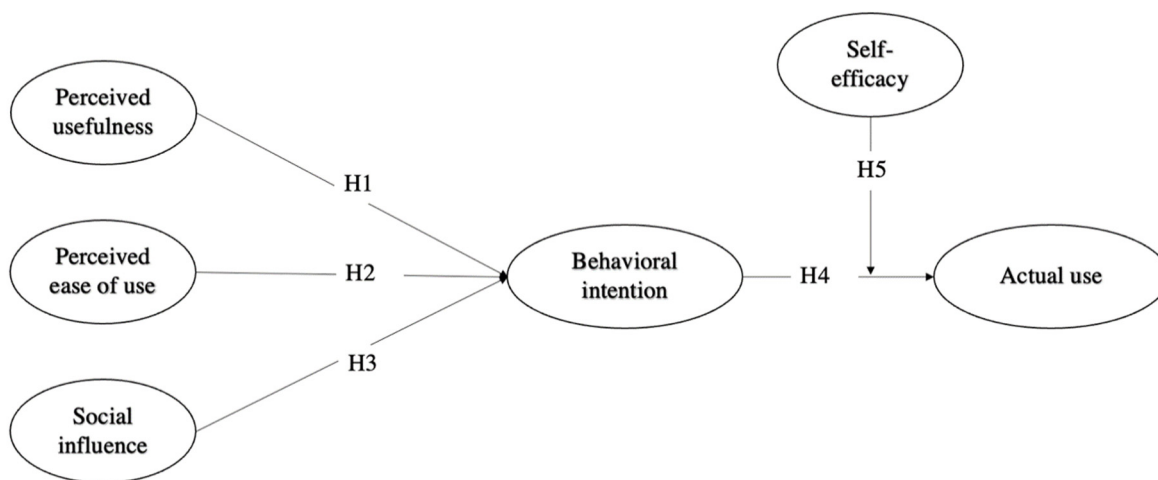


Figure 1. Conceptual model

3. Research Methodology

Research Design

The quantitative survey method was applied in this study, obtaining responses from students who are Instagram users at UPM. Based on Apuke (2017), quantitative research refers to a systematic exploration of a phenomenon through the collection of measurable data and the application of statistical, mathematical, or algorithmic methods. In terms of the survey method in the research, it plays a vital role in enabling the researcher to measure the notion and conception of participants towards the usage of Instagram (Babbie, 2015).

Sampling Technique

This study applied purposive sampling for acquiring responses from students who are Instagram users at UPM. Purposive sampling, considered by Tongco (2007), was a non-random sampling technique relying on the judgment of researchers. Hence, the respondents of the study must be Instagram users, this is because they have relevant experience using Instagram. Hence, researchers have included a screening question “Do you use Instagram?” to assist in filtering the actual responses.

Measurements

The survey questionnaire in the research comprised demographic variables and six variables in the research model. The sections consist of Section A: demographic profile of participants; Section B: perceived usefulness; Section C: perceived ease of use; Section D: social influence; Section E: behavioral intention; Section F: self-efficacy; and Section G: actual use.

Demographic questions were designed for acquiring demographic information about students, consisting of gender, age, race, and educational background. However, to identify students who are Instagram users, a screening question (Do you use Instagram?) was developed and incorporated into demographic questions. The five-point Likert-type scale was adopted for items, where 1 indicates strongly disagree, 2 indicates disagree, 3 indicates neutral, 4 indicates agree, and 5 indicates strongly agree. The perceived usefulness was measured by 4 items, and perceived ease of use (3 items) which were adopted from Owusu et al., (2019). Social influence, measured by six items were adapted from (Liao & Hsieh, 2011; Owusu et al., 2019). The behavioral intention was measured by 4 items, which were adopted (Chao, 2019; Yuan et al., 2021). Self-efficacy (4 items) was adopted from (Kiili et al., 2016; Chao, 2019). Lastly, the actual use of Instagram, which was measured by 5 items, was adapted from Ali et al., (2020).

Data Collection Procedures

After the instrument had been developed, the researchers carried out a pre-test for testifying the quality of the instrument, afterwards, the following distribution of the online survey was started. The survey questions were in Google Forms. Relied on social media platforms such as WeChat, Facebook, and WhatsApp, the online survey was spread among

respondents who are Instagram users in UPM. Thus, data collection through online surveys relying on social media can be convenient (Ibrahim et al., 2019). The interval for collecting data was approximately a month, from June to July 2022. The reason for confirming the invalid responses was that the 7 respondents answered they do not use Instagram. Finally, after filtering, the researchers received 373 valid responses.

Data Analysis and Statistical Significance

The prime purpose of the paper is to investigate influential determinants affecting the use of Instagram for interaction among students of UPM. Data collected from respondents were preceded by applying Structural Equation Modeling (SEM) as a statistical technique with the utilization of SPSS version 26 and SmartPLS 3.3.9. This is because PLS-SEM is considered an appropriate platform for coping with complex research models with a larger number of latent variables. As for the present research, the research model consisted of 26 latent variables, which can be regarded as complex.

4. Results

The result for the demographic profile of respondents was shown in Table 1. The result demonstrated that the proportion of male participants is higher than female participants, with 58.4% male and 41.6 % female students. For the age classification of Instagram users, more than half of the respondents aged 22 to 25 years old, represented 58.4% in the research. As for the ethnicity distribution of participants, more than half of them are Malay, which represents 56.6% in the study. In terms of the educational level of respondents, the majority of respondents have accomplished a bachelor level, while the minority of them have a doctoral degree.

Table 1. Demographic information of the respondents (n=373)

Variables	Category	Frequency	Percentage
Gender	Male	218	58.4
	Female	155	41.6
Age	18-21	92	24.7
	22-25	218	58.4
	26-29	38	10.2
	30-33	15	4.0
	34-39	10	2.7
	Race	Chinese	91
	Malay	211	56.6
	Indian	39	10.5
	Others	32	8.6
Educational level	Diploma	41	11.0
	Bachelor	189	50.7
	Master	116	31.1
	Ph.D	27	7.2

Common Method Variance (CMV)

Common Method Variance (CMV), occurring when a self-reported and cross-sectional questionnaire was used for data collection, is considered an issue in social sciences studies (Chan et al., 2021; Mohammed et al., 2021). In this research, Harman's single-factor analysis was implemented as a statistical and procedural remedy, assessing the influence of CMV on research constructs (Podsakoff et al., 2003). As a result of Harman's single-factor analysis, the first factor accounts for a variance of 28.245%, which is lower than the recommended threshold of 50% (Hair et al., 2014). In summary, the statistical approach confirmed that CMV is not a crucial concern in the current study.

Measurement Model Assessment

To access the measurement model, the Confirmatory Factor Analysis (CFA) was developed based on structural equation modeling (SEM). The reliability of constructs, PU, PEOU, SI, BI SE, and AU, were tested according to the criteria of Cronbach Alpha and item loading. As indicated by Hair et al., (2013), the value of Cronbach Alpha and item loading for assessing the constructs' reliability should exceed 0.70 to be regarded as acceptable. As shown in Table 2, the Cronbach Alpha value and the item loading value for all constructs are higher than 0.70. Hence, the result of the reliability test in the study is considered acceptable.

Table 2. Reliability and validity

Construct	Items	Loadings	CR	AVE	Cronbach's Alpha
Perceived usefulness (PU)	PU1	0.865	0.921	0.745	0.886
	PU2	0.848			
	PU3	0.868			
	PU4	0.873			
Perceived ease of use (PEOU)	PEOU1	0.950	0.940	0.840	0.905
	PEOU2	0.901			
	PEOU3	0.898			
Social influence (SI)	SI1	0.810	0.910	0.628	0.882
	SI2	0.799			
	SI3	0.747			
	SI4	0.815			
	SI5	0.799			
	SI6	0.784			
Behavioral intention (BI)	BI1	0.773	0.868	0.622	0.797
	BI2	0.767			
	BI3	0.837			
	BI4	0.775			
Self-efficacy (SE)	SE1	0.796	0.914	0.726	0.876
	SE2	0.852			
	SE3	0.874			
	SE4	0.885			
Actual use (UB)	UB1	0.860	0.936	0.746	0.915
	UB2	0.866			
	UB3	0.873			
	UB4	0.861			
	UB5	0.859			

In terms of the validity test, the researchers adopted convergent validity and discriminant validity as criteria for assessing the validity of constructs and measurements. In determining the convergent validity, the index of composite reliability (CR) should be greater than 0.7 and the value of average variance extracted (AVE) should be above 0.5 (Hair et al., 2013). As demonstrated in Table 2, the result indicated that the CR and AVE values of all constructs are all greater than 0.7 and 0.5 respectively. Therefore, the convergent validity of constructs in the research can be considered acceptable. In addition, in assessing the discriminant validity, the HTMT was applied as criterion in the study. Based on Gold et al., (2001), the value of HTMT should not be higher than 0.9 whereas Kline (2015) suggested that the value of HTMT between two constructs should not be greater than the threshold of 0.85. The outcome for HTMT was shown in Table 3, indicating that the HTMT values were all not higher than 0.85, which means that the discriminant validity was met.

Table 3. HTMT Ratio

	PU	PEOU	SI	BI	SE	UB
PU						
PEOU	0.444					
SI	0.356	0.440				
BI	0.495	0.471	0.489			
SE	0.118	0.058	0.043	0.059		
UB	0.436	0.428	0.385	0.558	0.050	

Structural Model Assessment

The assessment for the structural model was conducted for testifying the influential determinants, PU, PEOU, SI, BI, and SE, predicting the use of Instagram among students in a Malaysian higher education institution. By adopting bootstrapping with 5000 resamples, the proposed relationships were examined on SmartPLS (Andrews & Buchinsky, 2002). The outcome of hypothesis testing was shown in Table 4. In the present research, the H1 supposed that perceived usefulness positively affects the behavioral intention of students to use Instagram. The hypothesis was supported (Beta = 0.257, $t = 5.230$, $f^2 = 0.076$). The H2 proposed that perceived ease of use positively affects the students’ behavioral intention to use Instagram. As indicated by the research outcome, the H2 was validated (Beta = 0.200, $t = 3.852$, $f^2 = 0.043$). The H3 hypothesized that social influence significantly influences students’ behavioral intention to use Instagram. As demonstrated by the outcome of the study, H3 was confirmed (Beta = 0.256, $t = 5.424$, $f^2 = 0.076$). In terms of H4, which assumed that behavioral intention has a positive effect on the actual use of Instagram was considered valid (Beta = 0.476, $t = 12.080$, $f^2 = 0.295$). Thus, it was confirmed that behavioral intention, as a predictive antecedent, significantly predicts the students’ actual use of Instagram.

Table 4. Outcome summary for hypothesis testing

Hypotheses	Std Beta	Std errors	T values	LLCI	ULCL	VIF	R ²	Q ²	f ²
H1: PU-> BI	0.257	0.049	5.230	0.173	0.335	1.233	0.224	0.177	0.076
H2: PEOU-> BI	0.200	0.052	3.852	0.112	0.282	1.317			0.043
H3: SI-> BI	0.256	0.047	5.424	0.173	0.328	1.227			0.076
H4: BI-> UB	0.476	0.039	12.080	0.404	0.536	1.001	0.288	0.168	0.295

Note: 1-tailed test, LLCI is for Lower Limit Confidence Interval, ULCI is for Upper Limit Confidence Interval

Moderation Testing

Table 5. Outcome summary for moderation test

Hypotheses	Std. Beta	T values	P values	LLCI	ULCI
H5: SE*BI -> UB	-0.038	0.752	0.226	-0.118	0.050

Note: 1-tailed test, LLCI is for Lower Limit Confidence Interval, ULCI is for Upper Limit Confidence Interval

In the research, self-efficacy was proposed as a moderating factor. To assess the role of self-efficacy in the relationship between behavioral intention and actual use of Instagram, the moderation test was carried out on SmartPLS. The outcome of the moderation test was demonstrated in Table 5. Revealed by the moderation test, self-efficacy was found to have an insignificant moderating effect on behavioral intention and actual use (Beta = -0.038; $t = 0.752$; $p > 0.05$; LLCI = -0.118, ULCI = 0.050). As mentioned in the statement above, H5 was rejected.

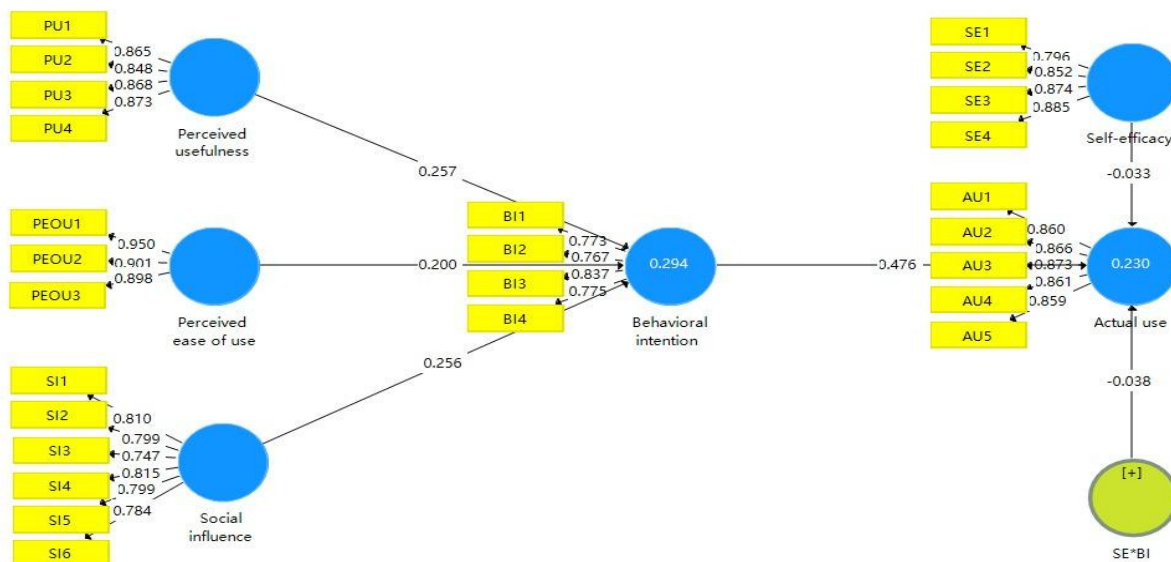


Figure 2. Assessment of structural model

5. Discussion

The current study aims to determine the factors anticipating the student's intention toward the use of Instagram. TAM was adopted as a theoretical framework for investigating the students' intention to use Instagram for their interaction and was further extended in the present study. A total of four exogenous constructs (perceived usefulness, perceived ease of use, social influence, and self-efficacy) and two endogenous variables (behavioral intention and actual use) were introduced in the research model. As shown by data analysis, structural equation modeling (SEM), perceived usefulness, perceived ease of use, and social influence were found to be significant predictors of anticipating behavioral intention and actual use. However, self-efficacy was not able to strengthen the relationship between behavioral intention and the actual use of social media. This result contradicted the prior research of Duong et al., (2021); Niu et al., (2021) who found self-efficacy positively linked with behavioral intention. Therefore, in this study, an inconsistent result was shown, which indicated that the association between behavioral intention and actual use would not be affected by the intervention of the moderator, self-efficacy. The potential reason leading to outcomes could be due to the demographic of the current study where the majority of the respondents are young adults and technology savvy, they believe their ability and high capabilities to operate Instagram confidently lead them to the actual use.

Perceived usefulness was validated as an influential antecedent predicting the behavioral intention of Instagram use. This confirmed that students are willing to use Instagram as the platform for their interaction. They believe that they would benefit from the use of the platform. The result was consistent with the former research of Al-Marouf et al., (2021) in terms of social media usage among users. It was suggested that the use of Instagram by students could boost their interactions in their social activities.

Furthermore, perceived ease of use, as another predictor, was also found to anticipate the behavioral intention of Instagram use. This highlighted that students in a Malaysian higher education institution intend to use Instagram once they believe Instagram is an easy-to-use platform. Based on the result in terms of the relationship between perceived ease of use and behavioral intention (Davis, 1989), the extent to which users believe the utilization of technology requires slight effort contributes to the users' acceptance and actual use. This finding was congruent with past research of Hoi and Hang (2021) on the adoption of social media platforms. Consequently, the service providers of social networking platforms are suggested to develop the platforms to be user-friendly and understandable to users.

Regarding social influence, it is a positive factor leading to the behavioral intention of students to use Instagram, reflecting that students are more likely to use it for their interaction. This is owing to the impact of perceived influence in the social context on their intention to use Instagram. This outcome was in line with Chua et al., (2018) who claimed that there is a significant association between social influence and users' behavioral intention.

6. Conclusion

The present research seeks to investigate the influential antecedents on the intention of students to use Instagram for interaction. The TAM was applied as the theoretical ground for proposing a research model. The outcome suggested that the behavioral intention and actual use of students are significantly anticipated by perceived usefulness, perceived ease of use, and social influence.

Academic implication

Firstly, the current research provides a theoretical overview in analyzing the antecedents and their effect on student's intention to use Instagram in a Malaysian context. Therefore, by adopting additional predictors and moderators (social influence and self-efficacy), the study contributes to the extension of TAM. Based on the result of PLS-SEM, all hypotheses were validated except the moderating effect of self-efficacy, showing that the proposed model in the present research is considered sufficient in predicting the students' adoption of Instagram.

In addition, the researchers conducted a systemic analysis by proposing a comprehensive theoretical model for the associations among perceived usefulness, perceived ease of use, social influence, behavioral intention, self-efficacy, and actual use. As former research is limitedly focused on the use of social media in the educational context. The current study has testified to the acceptance and use of Instagram among students in a Malaysian public university context. Consequently, this paper would contribute to communication technology scholarship by developing the research model in an educational setting.

Furthermore, the study has examined the moderating role of self-efficacy despite it performing an insignificant moderating effect on the association between behavioral intention and actual use. Based on prior research, some literature analyzed the linear relationships between predictors and the actual use of social media. However, limited research estimated the moderating impact of self-efficacy on the relationship between behavioral intention and actual use in terms of Instagram. Thus, the present study may extend the understanding of the intention to use Instagram.

Practical implication

For the practical implications, the antecedents developed in the research model are important in promoting the acceptance and usage of Instagram. As for Instagram developers, the research outcome can be as guidelines for achieving maximum service acceptance among students. This is because the research findings can reinforce in terms of key motives influencing the intention to use Instagram, helping Instagram and other social network site providers retain loyal users and further improve their systems. More specifically, the system providers should formulate innovative strategies to inform users that the system is useful and user-friendly. Owing to the positive effect of social influence on students' behavioral intention, the service developers can promote the users' degree of trust, which is associated with the enhancement in their task performance brought about by certain systems.

Limitations and suggestions for future research

The research has shown some insightful empirical outcomes. Yet, the existing drawbacks are needed to explicate. The first limitation is that the study sample was based in one of the public universities in Malaysia, which is UPM and the outcomes were not able to be generalized to the other universities as the perceptions of students from other contexts are undiscovered. Therefore, the subject in future research can be selected from other public or private universities in Malaysian or other regions.

In terms of methodology, this study only utilized the quantitative method via survey to obtain primary data from students who are Instagram users. Future researchers are suggested to apply other methods such as qualitative or mixed methods (pragmatics) to achieve a deeper understanding of the phenomenon.

Other than that, the preliminary focus of the research is on one of the prominent social media platforms - Instagram. The recommendation for future studies is to investigate other platforms, such as Facebook, WeChat, and Twitter. Last but not least, extensive empirical research carried out examined the adoption and use of information technology, especially social network services, future research can extend the research phenomenon to post-adoption of users, and researchers are suggested to examine the continuance intention and usage of SNS in the future, to contribute to the media technology and information scholarship.

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