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Article

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MARKETING | RESEARCH ARTICLE

Factors affecting Malaysian university students' purchase intention in social networking sites

Saeideh Sharifi fard^{1*}, Ezhar Tamam¹, Md Salleh Hj Hassan¹, Moniza Waheed¹ and Zeinab Zaremohzzabieh^{2*}

Abstract: This study applied the unified theory of acceptance and use of technology 2 to examine acceptance and use of social networking sites in a marketing setting. This study uses 370 regular higher education students in Malaysia as respondents. Quantitative method is used. The findings revealed that performance expectancy (PE) and hedonic motivation were the main factors that influence users' online purchase intention (PI) through social networking sites (SNSs) in Malaysia. As for moderating influences of gender and age, the results showed that gender significantly moderated purposed association between these four elements and the online PI, while the moderating effect of age was only recognized in PE. Findings of this research offer practitioners with better insights that would aid them in developing effective online marketing strategies to attract online purchasing users through SNSs.

Subjects: ICT; Management of Technology & Innovation; Marketing

Keywords: the UTAUT2 Model; social networking sites; online purchasing behavior; Malaysia

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PUBLIC INTEREST STATEMENT

This study was carried out to provide higher consciousness to marketers on the status of the social network marketing notion. The research specifically looks into students' market segment's favorites towards the employment of social networks in gaining marketing information. The current research can also help researchers to gain a better understanding of unified theory of acceptance and use of technology 2 (UTAUT2) model as the confirmed and appropriate model to measure the acceptance and use of social networks sites by the students for online purchase intention. This research found that the UTAUT2 can be generalized to other e-commerce and social media contexts. At the end of this study, we expect to find several benefits for marketers and also student clienteles that can be succeeded with the use of social network marketing. The public and administration segments would both profit from this study so as to greater understand the purchase choice-making behavior of university students in Malaysia.

1. Introduction

Social networking sites (SNSs) are now a developing phenomenon in marketing. Traders are increasingly utilizing social media to target teenagers and youths, and SNSs are a main place in that trend (Dervan, 2015). Dealers are starting to appreciate the usage of SNSs as a part of their selling tactics to reach clients (Tanuri, 2010). With the change of consumer, purchase performance and acceptance of social network commerce are appearing. Currently, many e-commerce sites are using SNSs as marketing tools to maintain customers in an effective sympathy of their online purchase intentions (PIs) and to create more up-to-date and precise purchase choices. They utilize SNSs as useful tools for consumers to exchange shopping information and experiences. SNSs are a web-based individual centered service, platform, or sites that offer an occasion for dealings to involve and interrelate with possible clients, inspire an enlarged feeling of friendliness with clients, and shape all vital dealings with potential clients (Davis Mersey, Malthouse, & Calder, 2010).

There are numerous SNSs accessible in the market like Facebook, Twitter, MySpace, and Google Plus. Persons and trades are acquiring benefits from these mediums which act as a platform to offer goods and services or being in contact with their acquaintances or clients. For example, Facebook is a novel shape of e-commerce in the twenty-first century as it delivers novel worth of facilities to web operators to express themselves and network with others (Laudon & Traver, 2015). By employing Facebook, enterprises and persons can upload the picture of their goods or amenities with a full account of it, and customers can buy the goods that they want by only commenting on the comment inbox. This is the way where buyer and sellers use Facebook to lead their e-commerce. Twitter is a different SNS employed by most individuals at present. It created a space where enterprises do direct e-commerce, share and send information to clients and offer services and goods for clients (McIntyre, 2009). It comprises comments, remarks, views of the spectators, and a search engine that mines those tweet outlines. Through Twitter, dealers can rapidly respond to the clients' demands.

The e-commerce change via SNSs has also caused countless chances for Malaysians. The average age for Malaysians is about 25–26 years old, which shows that Malaysia has youth who may simply adopt information technology in doing small business (Zaremohzzabieh et al., 2016). Furthermore, the majority of Malaysian people are “techno savvy” and depend intensely on social media for different reasons comprising online shopping (Valentine & Powers, 2013). Previous study has confirmed that SNSs in purchasing goods online play the most significant role on the purchasing preferences for the Malaysian young Muslim consumers (Haque, Sarwar, Yasmin, Tarofder, & Hossain, 2015). This indicates that the Malaysian youth has the ability to accept e-commerce in the framework of SNSs. Hence, it is necessary for consumer behavior investigators and e-retailers to have a greater identification on the issues that influence the online PI of the Malaysian youths, mainly students.

Until now, there are numerous technology acceptance models that have been established to investigate factors that affect consumers' online PI via social media (Escobar-Rodríguez, Carvajal-Trujillo, & Monge-Lozano, 2014; Nunkoo, Juwaheer, & Rambhunjun, 2013; San Martín & Herrero, 2012; Sin, Nor, & Al-Agaga, 2012). In consumer context, the unified theory of acceptance and use of technology 2 (UTAUT2), which was advanced by Venkatesh, Thong, and Xu (2012), is usually applied to incorporate several advances from the original UTAUT model to explain the preparation of online PIs and actual online purchases. This research applies UTAUT2 model as there have been no previous researches that apply the UTAUT2 model in SNSs related studies, especially in developing countries like Malaysia. Therefore, this study puts forward the UTAUT2 model to explain online PI by means of SNSs that includes the four confirmatory factors of the UTAUT2 model (i.e. performance expectancy (PE), effort expectancy (EE), social influence (SI), and hedonic motivation (HM)) and the other two moderator factors (i.e. age and experience).

2. Theoretical background and hypotheses testing

Originally, UTAUT2 was derived from UTAUT model, which was suggested by Venkatesh and Davis (2000). The UTAUT2 offers a description for the acceptance and use of information communication

technologies (ICTs) by clients (Venkatesh et al., 2012) since the UTAUT was originally devised to clarify the causes that affect the acceptance and adoption of ICTs by workforces. In numerous studies, it has been applied in a consumer context. Examples of applications of the UTAUT2 in consumer contexts include the consumer adoption of low-cost carrier web pages (Escobar-Rodríguez & Carvajal-Trujillo, 2014) and social commerce technologies (Abed, Dwivedi, & Williams, 2015). Compared to the initial UTAUT model, which the results of some earlier studies clearly show the model accounts for nearly 25% of the variance in behavioral intention (BI; Zaremozhzabieh, Samah, Omar, Bolong, & Shaffril, 2014), the expansions suggested in UTAUT2 made a large development in the variance described in BI (56–74%) and information technology use (Venkatesh et al., 2012).

The UTAUT2 model integrates three new constructs and fresh associations (Venkatesh et al., 2012) and redefines the seven variables from the perspective of the consumer instead of defining them from the perspective of the employees of an organization (Venkatesh et al., 2012). It considers that the discrete consumer's intention to use ICTs is influenced by PE, EE, SI and facilitating conditions (FC), HM, price value (PV), and habit (H). Furthermore, PE, EE, SI, and PV constructs affect PI in adopting and using a technology, while FC and H constructs are antecedents of actual technology use. The UTAUT2 model posits individual difference variables, such as age, gender, and experience (exclude voluntariness, which is part of the initial UTAUT) to moderate several UTAUT2 associations.

According to the last paragraph, the research pattern of this paper is advanced in which PI to use SNSs as a dependent variable. It is defined as customer's motivation with intention to purchase through SNSs. PE, EE, SI, and HM, which are four constructs of the UTAUT2 model, are independent variables of this research model. In this study, H and FC constructs are not theorized to influence PI in our model while these two constructs only determine technology use. Furthermore, SNSs are introduced as an affluent-learning curve, unrestricted-to-use form regardless of through PC or cell phones, and needing less non-stop time and energy (Xu, 2014). These structures permit the SNS users to have extra support for erudition, device, setting, and time to endure purchasing via SNSs. For this reason, this study assumes the impact of FC can be low in the recent research perspectives and we exclude this variable from our research model. In contrast, the existing practical fact on the effect of FC on the acceptance of ICTs is contradictory. The construct PV also has not been adapted to the research model as marketers can get to their intended consumers at a cheaper price, occasionally even with zero cost through SNSs, and online purchasing through SNSs does not represent a monetary cost for the consumer. However, the role of age and gender of participants as moderator variables are included in our model, we have not considered experience as a moderator variable given that our analysis is carried out on participants' own experience in online purchasing.

2.1. Performance expectancy (PE)

PE is pronounced as the level to which a singular considers that the services which online purchase via SNSs provide will satisfy his or her needs. In UTAUT, PE shares similar definition with perceived usefulness (PU) in the model of Technology acceptance model (TAM; Davis, 1989). It is the greatest influencing factor of intention in customer context as stated by Venkatesh et al. (2012). In addition, PE has been empirically validated in online consumer behavior. Through using structural equation modeling (SEM), Sun, Cao, and You (2010) in China established that PU (or PE) has a positive correlation to BI to use e-commerce. This statement was supported by Amaro and Duarte (2013), claiming PE as an influential element in predicting online-travel purchasing activities. In other study, San Martín and Herrero (2012) also employed UTAUT as a research framework and illustrated that PE has a significant correlation to the adoption of online-travel purchasing. Moreover, Nawi, Nasir, and Al Mamun (2016) studied the relationships of UTAUT constructs and how they were affected by social media as a small business platform among students. The country of the study was Malaysia. They confirmed that the students with high PE have high BIs to use social media in their small business. Based on earlier research results, there is a significant correlation among PE and BI in Malaysian context (Amin, 2007). Thus, this study suggests the first hypothesis:

H1: PE has a significant positive correlation with the university students' PIs through SNSs.

2.2. Effort expectancy (EE)

EE is identified as the level of affluence linked to the usage of the online purchase services via SNSs. Due to the simplicity of SNSs, EE was likely to perform a noteworthy role leading to immediate use of SNSs by young consumers. Venkatesh, Morris, Davis, and Davis (2003) took perceived ease of use (PEU) construct to describe and define EE construct as the degree of ease related with technology use. Earlier empirical study (Amaro & Duarte, 2013) supported PEU (EE) is vital to have positive correlation towards online-travel PIs. Based on UTAUT model, Mandal and McQueen (2012) claimed that EE could impose a significant correlation on BI to adopt social media among microbusiness owners. Furthermore, Hong, Sin, Lun, and Zhou (2015) carried out a survey among Malaysian university students and recognized that EE significantly influence university students' PIs to adopt Facebook-Commerce, using Statistical Analysis System (SAS) approach. As previous findings, rooted in UTAUT/ UTAUT/2 model, this study states second hypothesis:

H2: EE has a significant positive correlation with the university students' PIs through SNSs.

2.3. Social influence (SI)

SI is described as the level that a human is affected by other people (e.g. family and friends) around him or her to decide whether or not to accept and use online purchase amenities via SNSs. The study attempts to improve understanding of SI on PI within the context of SNSs. SNSs can be a significant source of SI on PI. SI is another construct that has been appeared in numerous procedures in TAM model. According to Venkatesh et al. (2003), a subject norm (SN) in TAM model is comparable construct which summarizes similar concept with SI. Furthermore, Cheung and Lee (2010) found that SN is an important factor in determining BI to use SNSs for social connections and relations. Brocke, Richter, and Riemer (2009) claimed that social reason for students to connect with their friends and peers is certainly a tendency in verifying the SNSs acceptance. Besides, Litvin, Goldsmith, and Pan (2008) claimed that social media are deliberated as vital information source when customers are making purchasing choices. Lee, Qu, and Kim (2007) in Korea discovered that SN (SI) had a significant influence on customer's intentions to purchase online tickets. In Malaysia, Hong et al. (2015) indicated SI is significant to have a significant correlation with the university students' PI to accept Facebook-Commerce. Accordingly, the hypothesis is suggested:

H3: SI has a significant correlation with the university students' PIs through SNSs.

2.4. Hedonic motivation (HM)

HM is identified as the desire developed from using the online purchase services via SNSs.

With the incorporation into the UTAUT2 model of HM (intrinsic motivation) construct, Venkatesh et al. (2012) claimed that the purpose is to complete the model of UTAUT, which takes into account just the extrinsic motivation value, via the PE. In the consumer use of information technology context, they also stated both PE and HM constructs are considered crucial factors of information technology use. According to Brown and Venkatesh (2005), HM has been included as an important factor in many consumer behavior studies and previous IS research. In earlier study, HM construct has also been realized to be an important factor of the information technology use in the context of consumer behavior (Childers, Carr, Peck, & Carson, 2002). Furthermore, To, Liao, and Lin (2007) emphasize that HM construct is gradually significant due to the recognizable motivations attracting customers to visit a sellers' online websites. In Taiwan, Liao, Fei, and Chen (2007) uncovered those online shopping motives of adults from HM not only affect the search intention, but indirectly affect the PI. Chiu, Wang, Fang, and Huang (2014) demonstrated that HM is positively correlated to consumer's PIs in online shopping.

From these past findings, the below hypothesis is proposed:

H4: HM has a significant correlation with the university students' PI through SNSs.

2.5. Moderator effects–gender and age

Venkatesh et al. (2012) suggested that PE, EE, and SI on the information technology use can differ because of age and gender in UTAUT and UTAUT2 models. In Taiwan, Liu, Chang, Huang, and Chang (2016) conducted an investigation to identify the moderating effects of gender and age on the UTAUT model. The results showed there is important correlation between gender and age and the model. Concerning gender, Cha (2011) found in their studies that the attitudes of females to SNSs and toward shopping activities on SNSs are more positive than males’.

Using gender and age as moderating variables in an adapted UTAUT model, Rahman, Jamaludin, and Mahmud (2011) found that the correlation between EE and the usage of digital library was moderated by gender and age. Moreover, a study conducted by Lee and Kim (2013) suggest that age moderates the effects of EE and SL on PI of the App-Book. Meanwhile, a study by Tai and Ku (2013) specified that gender was a moderator between SL and BI in the context of m-stock trading. More precisely, the moderating role of age and gender provide important novelty for the current study. Thus, the last hypothesis is suggested:

H5: Gender differences and age are able to moderate the correlation between independent variables and the university students’ PI through SNSs.

3. Methodology

3.1. Participants

Four hundred and thirty-four university students from four Malaysian higher institutions joined in the research. From 380 questionnaires returned, only 370 of them were completely answered and could be used for the analysis. Among the participants, 39.2% were male and 60.8% were female. In terms of age categories, the data showed the majority of respondents were between 18 and 24 years old (55.7%) while 44.3% of them aged above 24. Matched with conventional innovation diffusion analyses (Rogers, 2003) that uncover early users of technological novelties as characteristically younger in age, research results in the context of consumer are consistent. With regard to ethnicity, respondents were Malay (54.3%, $n = 201$), Chinese (29.2%, $n = 108$), Indian (7.0%, $n = 26$), and others (9.5%, $n = 35$). Of the 370 participants, 49.5% ($n = 183$) hold a bachelor’s degree, 34.3% ($n = 127$) have a master’s degree, and 3.2% ($n = 12$) hold PhD degree.

According to the level of income, the respondents with the monthly income higher than 4000 MYR per month comprised one-half of the income group (50.0%), followed by those with monthly income within the range lower than 1000 MYR per month (17.6%). The results of the study also showed the most prevalent SNS among the respondents is Facebook where 89.2% are using it, followed by Twitter (25.1%), LinkedIn (5.1%), Instagram (2.4%), and others (27%). Almost, majority of the respondents (60.3%) use SNSs less than 3 h a day. Only 1.6% does over 16 h.

In addition, all respondents have at least purchased online once (during the last six months at the time of the survey), however, it appears as most of them have experience shopping online as respondents purchased variety of products online in which purchasing cloths was more prevalent (56.2%) category from the seven products researched. The online purchase of flight ticket was the second prevalent kind of products (39.7%) followed by movie ticket (35.9%), respectively. The respondents’ favorite buying was contrast with the account from Marketing Interative.com (2014) which stated that the most often bought item by online purchasing in Asia-Pacific, included airline tickets and reservations 59%, clothing 57%, tours and hotel reservations 53%, and event tickets 50%. Other than the items listed above, the participants also bought accessories, cosmetics goods, electronic gadgets, and books using SNSs. The results of the study confirm the earlier research conducted by Sin et al. (2012) in Malaysia which included clothing and accessories 52.5%, travels/hotel arrangement 37.7%, books, magazine, newspapers 27.6%, concert or movie tickets 25.6%, computer software and hardware 20.2%. The findings of this study revealed that clothes and e-tickets have been marked as a needed product or service and movie ticket revealed as an interesting service.

3.2. Procedure

A quantitative study was employed to collect information precisely from students in academies placed in the Selangor, Klang Valley. According to previous studies, university students account for a major part of the population of social network users (Smith & Caruso, 2010) which implies they can understand the content in SNSs well and its capacities. Besides that, several researchers have suggested that student samples are a major target market for online marketers (e.g. Ha & Stoel, 2009). In other words, the likelihood of students being significant online consumers is high indicating the selected sample will provide sufficient information about how online consumers behave in SNSs. Additionally, along with the growth of educational services in Malaysia, it is noteworthy for traders and consumer behavior investigator to distinguish Malaysian students' populace viewpoint toward online marketing because of their function in online trading activities in Malaysia (Sabri et al., 2008). As a result, choosing students as our sample was suitable. A multistage cluster sampling technique was utilized for this study with the information obtained from four selected universities located in Klang Valley in Malaysia. All together, the four universities that were sampled in this study are: Universiti of Malaya, Universiti Putra Malaysia, Universiti Multimedia, and Sunway University. The sample was filtered through a qualifying question at the beginning of the survey, asking whether the respondent has purchased a product using the SNSs, as these study targets respondents who have experience in online purchasing. Accordingly, if respondents have experience in purchasing products using the SNSs, they were directed to move to the next sections. Instead, the response of having no prior online product purchase experience was coded with the number two. The data-set with the responses of the number two on the qualifying question was eliminated. As such, the data from 370 respondents who have purchased products online were kept for further analysis. Furthermore, the sample size of the main study was 434, as a minimum sample size of 200 has been suggested as a goal for SEM research to prevent frequent convergence failure and inappropriate solution glitches (Kline, 2011). As such, the use of respondent-driven sampling method provided acceptable access to an appropriate sample size given the purpose of the study.

3.3. Measures

This study adopted a set of measurement items according to the original UTAUT model, the modified UTAUT model (UTAUT2), other researches related to e-commerce, ICT acceptance and the consumer literature (Herrero & San Martín, 2012; Kim, Chung, & Lee, 2011; Venkatesh et al., 2003, 2012; Wen, 2012). Following the procedure explained, the questionnaire consists of 37 items that were rated on 7-point Likert scale varying from strongly agree to strongly disagree. The inquiries in the questionnaire were authenticated and confirmed based on the ideas of a team of scholars, whose opinions were solicited, whether the queries were proper for analyzing consumers' approval and usage of SNSs to purchase goods and services. Consistent with the panel's opinions, some modifications were made to the items to construct the statements more meaningful. A pilot study was then performed on a selection of 50 university students who had previous experience in online purchasing via SNSs, while subjects who had not formerly purchased anything online were removed. Built on the findings of this pilot study, only small alterations were made to the phrasing of some items to enhance additional simplicity and easiness.

3.4. Data analysis

We applied the SEM analysis in this study. The benefits of using this method are to correct statistical estimation by selecting the measurement error in the estimation procedure. It allows the checking of several associations concurrently. SEM also examines far additional complicated models like examining mediation and moderation. Lastly, it confirms high validity and credibility for the constructs by applying the average variance extracted (AVE) and construct reliability (CR).

3.5. Data preparation

The data were distributed normally, which is proven by the skewness values from -1.418 to 0.189, and the kurtosis values from -1.116 to 3.027 for entire constructs. Byrne (2010) asserted that if the skewness value is among -2 and +2, and the kurtosis value is between -7 and +7, data were suitable to assume multivariate normality. For model fit, Kline (2010) recommended applying model fit

indices, counting the chi square/degree of freedom ratio (CMIN/DF), the comparative fit index (CFI), the goodness-of-fit index (GFI), and the Tucker–Lewis index (TLI). A rule of thumb for the fit indices is that values equal to or bigger than 0.90 show adequate fit (Kline, 2010). Also, the model may be categorized as satisfactory if the root mean squared error of approximation (RMSEA) is between 0.03 and 0.08. This model presented good fit indices: CMIN/DF = 1.775, $p < 0.01$, CFI = 0.914, GFI = 0.914, TLI = 0.944, RMSEA = 0.046. As stated by Kline (2010), the model offers a suitable fit for the model. AMOS 22 software was employed to examine the data. In the part of reliability analysis, the factor loadings of all questionnaires are higher than general standard 0.50 and composite reliability ranges from 0.802 to 0.867; so, all factors in the measurement model had adequate reliability. In the part of validity analysis, all constructs display sufficient convergent validity and discriminant validity, while all AVE value in each construct ranged from 0.50 to 0.608 and the value of square root of AVE of each dimension was bigger than the correlation coefficients of the pairwise dimension.

4. Results and discussion

4.1. Structural model

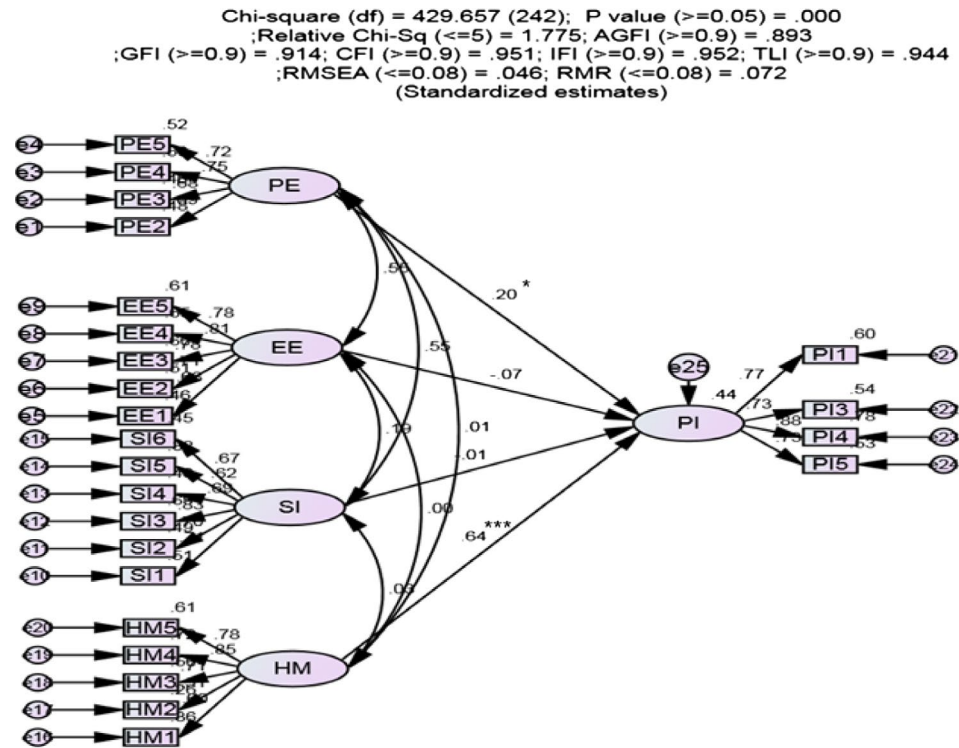
This model comprises PE, EE, SI, and HM as exogenous variables, and PI acts as an endogenous variable. As seen in Figure 1, PE is significant in explaining the proportion of PI through SNSs ($\beta = 0.20$; p -value = 0.019). Thus, H1 is supported. This result is consistent with previous studies (Escobar-Rodríguez & Carvajal-Trujillo, 2013, 2014; Pascual-Miguel, Agudo-Peregrina, & Chaparro-Peláez, 2015; Venkatesh et al., 2012), in which PE was discovered to have a significant impact on the intention to use the technology. Accordingly, this result could imply that consumers who expect to gain benefits from using SNSs as marketing tool are more possible to have intention to use SNSs, which provides benefit to them in the purchasing process. The findings of this study also indicate that PI among university students in Malaysia is significantly influenced by HM ($\beta = 0.644$, p -value = 0.000). Hence, H4 is supported. Above all, the results of this research propose that online purchasing is more influenced by an intrinsic or hedonic purpose rather than an extrinsic or utilitarian motivation (Escobar-Rodríguez & Carvajal-Trujillo, 2014; Pascual-Miguel et al., 2015; Venkatesh et al., 2012). Given that the nature of online consumption of SNSs is hedonic, consumers may be more entertainment-oriented when searching for and purchasing products using SNSs. Furthermore, the findings support the motivational theory (Deci & Ryan, 1975). According to the theory of motivation, user acceptance is determined by two factors, extrinsic motivation and intrinsic motivation. When extrinsically driven, benefits associated with using a product external to a system motivate use. Intrinsically driven use of a system is likely when enjoyment is attained. The motivational theory marries the constructs PE and HM of the UTAUT2, since the extrinsic motivational factor closely emulates that of PE while the intrinsic driver compliments HM (Slade, Williams, Dwivedi, & Piercy, 2015; Venkatesh et al., 2012). For this reason, it was expected that consumers who viewed SNSs as beneficial and perceived it as pleasurable would be more likely to use it in their personal life.

The data in Figure 1 show that EE ($\beta = -0.071$; p -value = 0.278) and SI ($\beta = -0.012$; p -value = 0.849) are negatively associated with PI. Therefore, these results do not support H2 and H3. This result is consistent with earlier study (Yang, 2010), in which EE insignificantly influences attitude of US consumer toward using m-shopping services, based on an online survey collected from the purchased consumer panel validated using SEM. Due to the simplicity of SNSs tools, EE was likely to play no significant role leading to the immediate use of SNSs by university students in Malaysia. In addition, many Malaysians are technologically savvy and are able to speak in more than one language. These skills permit them to communicate with many people in the world with ease. All these show that Malaysians have the potential to embrace e-commerce easily in the context of SNSs.

Results in this study also show that SI does not influence the PI which is supported by Pascual-Miguel et al. (2015) and contrast with the findings obtained from previous researches that support the significance of IS in influencing consumers' online PI (Escobar-Rodríguez & Carvajal-Trujillo, 2014; Herrero & San Martín, 2012; Venkatesh et al., 2012). The fact that the generality of SNSs apply as a basis of information about goods and services may decrease the common anxiety of the

Figure 1. Path analysis of every research constructs.

Notes: Performance expectancy (PE), effort expectancy (EE), social influence (SI), hedonic motivation (HM), and online purchase intention (PI). For all estimates, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.



communal setting (either optimistically or pessimistically) with respect to the acceptance of novel tools in the purchase behavior. Furthermore, the instrumental character of the online purchase of goods and services can initiate utility factors such as performance to take precedence over social influences on the development of the online PI.

PE, EE, SI, and HM variables explained 44.0% of the variance in PI through SNSs in university students in Malaysia. According to Venkatesh et al. (2012), it has been confirmed that the UTAUT2 model increases the percentage of variance explained in the intention to use ICTs by 18%, and in the actual use of ICTs by 12%.

4.2. Moderation test of gender

An assessment between “the unconstrained model” and “the measurement residuals model” revealed that the unconstrained model ($\Delta\chi^2 = 886.695$, $df = 484$, $p = 0.000$) and the measurement residuals model ($\Delta\chi^2 = 924.569$, $df = 542$, $p = 0.000$) were significant; conversely, the unconstrained model was better than the measurement residuals model because the chi-square was smaller (Hair, Black, Babin, Anderson, & Tatham, 2010). Along with the measurement residual’s model ($\chi^2 = 37.874$, $df = 58$, $p < 0.05$) in “assuming that the unconstrained model is correct,” the results exhibited that the impact of possible differences across gender was significant. The results supported with previous findings show that SNSs is typified by female dominantly and gender difference in SNSs use is rapidly increasing (Comscore, 2010). Dittmar, Long, and Meek (2004) believed males and females have been presented to vary in their attitudes toward online buying. In other research, Cha (2011) stated that purchasing activities via SNSs can be different among women and men, because different gender has different motivations in purchasing. In this regard, female highlights emotional attachment in the buying activity. Females consider that shopping is an exciting activity, thus they have a trend to enjoy it. Females also search for a relationship when shopping online. SNSs enable female users to interact with their families and friends. For example, Facebook shopping application assists female users. With this application, female users can discuss goods and products they want to buy with

their family and friends. In contrast, male are relatively more inspired by functional factors such as convenience and suitability regarding making purchases. So, the gender of the customers is real in determining attitudes toward purchasing with SNSs.

The findings also showed that there was a significant relationship between PE and PI for male students ($\beta = 0.197$; Table 1) and female students ($\beta = 0.170$; Table 1). Thus, the moderating impact of gender on the path relationship between PE and PI was not supported. As portrayed in Table 1, the moderating effect of gender on the path relationship between EE and SI and PI were not supported. Moreover, the findings showed that there was a significant association between HM for female students ($\beta = 0.652$; Table 1), and the path hypothesis for male students was significant ($\beta = 0.644$; Table 1). Consequently, the moderating effect of gender on the path relationship between HM and PI was not supported, while there were differences in the value of standard regression weight for male and female students.

4.3. Moderation test of age

Venkatesh et al. (2003, 2012) formulated age into to the model and it was hypothesized to moderate the effect of four constructs (PE, EE, SI, and HM). The respondents of the survey were categorized into two groups: the first group ranged in age from 18 to 24 years, which is considered as young students, and the second group ranged in age from 25 to above 40, which is considered as young adult. Results indicated that the differences were significant ($p < 0.05$) and the unconstrained model was better than the measurement residuals model ($\Delta\chi^2 = 121.293$ (862.4–741.107); $df = 58$ (542–484); $p = 0.00$), then we can conclude that this is some form of moderation effect of age on the overall model. The results of Table 2 indicated that age significantly moderates only the path relation between PE and PI through SNSs. These findings are consistent with an earlier study (Zaremohzzabieh et al., 2014).

Table 1. Standardized regression weights (gender variant model)

Hypotheses		SE	CR	Standard estimate
PI ←	Performance expectancy (PE)	0.113 (0.078)	−0.671	0.197* (0.170*)
PI ←	Effort expectancy (EE)	0.076 (0.050)	0.308	−0.071 (−0.058)
PI ←	Social influence (SI)	0.076 (0.054)	−0.112	−0.012 (−0.015)
PI ←	Hedonic motivation (HM)	0.099 (0.083)	0.252	0.644*** (0.652***)

Notes: PI = online purchase intention; SE = standard error; CR = critical ratio. Results from male are presented first, and the results for females are presented in parentheses.

* $p < 0.05$.

*** $p < 0.001$.

Table 2. Standardized regression weights (age variant model)

Hypotheses		SE	CR	Standard estimate
PI ←	Performance expectancy (PE)	0.163 (0.151)	2.32	0.039 (0.387***)
PI ←	Effort expectancy (EE)	0.096 (0.120)	−0.321	−0.019 (−0.135)
PI ←	Social influence (SI)	0.108 (0.105)	0.158	0.118 (−0.176)
PI ←	Hedonic motivation (HM)	0.158 (0.116)	0.21	0.622*** (0.660***)

Notes: PI = online purchase intention; SE = standard error; CR = critical ratio. Results from age between 18 and 24 years old are presented first, and the results for age above 24 are exhibited in brackets.

*** $p < 0.001$.

5. Conclusion

Drawing upon the UTAUT2, this study looks into the nature of social networking sites (SNSs) in online PI of university students in Malaysia by proposing a set of four factors: PE, effort expectancy, social influence, and HM, respectively. Afterwards, separate dissimilarities, namely, age and gender, are posited to moderate the influences of these elements on the online PI. The results from this study point to four main conclusions. First, our findings indicate that online PI to use SNSs is influenced by HM and PE, in the domain of social media. These findings support hypotheses one and four of this study. Secondly, contrary to hypotheses two and three, EE and SI do not have an effect on online PI through SNSs. Thirdly, these four factors of the UTAUT2 explained about 44 percent of the variance obtained in the data. Fourthly, this study found that gender moderates the effect of SNSs on influencing the online PI. Specifically, age just moderates the association among PE and the online PI through SNSs.

The results of this study showed that UTAUT2 is a robust tool that predicts user acceptance of technology across different cultures. From a practical standpoint, the results also provide important insights and implication for researchers, advertisers, and marketers in the context of social network. In accordance with our findings, they can initiate particular factors like PE and HM to support consumers' intentions to purchase online because this will lead to more actual usage of SNSs to make purchases. Furthermore, this study only concentrated on four constructs of the UTAUT2 model. Therefore, it is suggested that future investigations add other constructs of the UTAUT2 model (i.e. FCs, PV, and the moderating influence of experience) on BI and use behavior in different countries and different technologies. Finally, since the empirical research underlying the UTAUT2 model and the investigation social media adoption and usage are relatively new in a wide range of consumer technology use contexts, conducting meta-analysis studies on social media adoption is necessary in order to compare the findings with other UTAUT2 findings.

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