



Brand Trust, Perceived Usefulness, Perceived Ease of Use towards Online Purchase Intention of Mobile Telecommunications Services among Smartphone Users in Malaysia

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Abstract

Purpose - Online purchasing has been a pertinent part of consumers' lifestyle, which has risen in the recent pandemic with a 40 per cent increase. The research aims to explore the Technology Acceptance Model (TAM) and an additional variable such as Brand Trust in determining the factors influencing Malaysia's online purchasing of mobile telecommunications services.

Design/Methodology/Approach - In this study, convenience sampling was used in a quantitative study approach. A total of 500 responses were received via online questionnaires in collaboration with the Malaysian DesaMall e-commerce portal, of which 400 were chosen based on specific prior online shopping experiences.

Findings - The results indicated that all respondents were involved in online purchases. Accordingly, brand trust, perceived usefulness, and perceived ease of use exhibited relationships towards online purchase intention of mobile telecommunications services via mobile operators' websites. The influencing factors' relationships and data reliability are significantly reliable, presenting profound relationships, justifying the study hypothesis.

Contribution/Implication - According to the study, perceived ease of use, perceived usefulness, and brand trust are the main determining factors. This study has impacts for regulators, policymakers, and telecommunications companies alike.

Originality/value - Due to the nature of online purchasing, a personalised activity involving monetary transactions, consumers are becoming more cautious. As a result, empirical evidence from Malaysian smartphone users added to the literature by providing insights into their specific online purchasing behaviour of mobile telecommunication services. From a theoretical standpoint, the research model in this study included TAM as well as Brand Trust as a new variable.

Keywords: Adoption, attitude, online purchasing, smartphone users, technology influencing factors of online purchasing.

DOI Number: 10.14704/Nq.2022.20.17.Nq88077

Neuroquantology 2022; 20(17):619-629

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1. INTRODUCTION

Online purchasing has been gaining a lot of popularity lately. According to MCMC Internet Users Survey Report (2019), Malaysia has 24.5 million internet users, or 97%, which is higher than the regional average. Additionally, 87.3% of internet users had smartphone access to the internet. There are currently 15 million people who shop online, and that number is predicted

to rise by 5 million by 2021. Additionally, by 2021, the average user will spend RM572 online, up from RM325 today. The total revenue from online sales across all product categories is currently RM5 billion and is projected to increase to RM11 billion by 2021.

The consumer's decision to buy a particular product following further consideration is known as their purchase intention (Annan

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Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



Bhatti, 2018). Intentions reveal specific behaviours and how diligently someone tries to engage in them. Online purchasing refers to the act of buying goods or services over the internet. However, there aren't enough studies on the variables affecting online purchasing in one study.

Moreover, studies on Brand Trust and Social Media Marketing for the telecommunication sector in Malaysia is unprecedented. The works are exclusively related to online purchasing household items, clothes, electronics, and books (Najwa Rashid et al., 2018; Maskaran, 2014, Lee Chai Wing et al., 2016; Cemberci et al., 2013, and Degemenci and Breitre, 2017). Consequently, these works inadequately described the entire concept of online purchasing intention. This situation has raised concerns on the impact of interpretations of these factors vis-à-vis telecommunication products.

Previous research concerning online shopping in Malaysia among university students revealed that risks, website designs, information accuracy are among the primary factors hindering the behavioural intention to purchase (Anushia Chelvarayan et al., 2021; Marziah Mokhtar et al., 2020; and Nurul Nadia et al., 2018). Despite the widespread availability of the Internet in Malaysia, there is a lack of focus on smartphone users and mobile telecommunications services. Understanding the factors that influence the online purchase of mobile telecommunications services among smart phone users is therefore essential for developing effective marketing strategies.

There are currently significant research gaps regarding the identification of the significant factors that motivate online purchasing behaviour among Malaysian consumers. In the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use have a substantial impact on business technology utilisation (Davis, 1989). In addition, consumer retention is becoming a crucial factor in protecting the consumer base (Rajeswari et al., 2015).

LITERATURE REVIEW

The Telecommunication Landscape in Malaysia

In 2019, Malaysia's population reached 32.25 million. The country was operated by key

players in telecommunications, Celcom, Maxis, Digi, and U-Mobile. This situation has led to stiff competition and a significant price war among the telcos. The MCMC Industry report (2019) suggested that increasing the mobile penetration growth by 150 per cent ensures competitiveness and stimulate innovation. Nevertheless, the report recorded a decrease in the operating margin of the telecommunication sector. In 2018, MCMC received 49,065 complaints from the public related to telecommunication, postal, and courier services quality in the country. As a consequence of this, the vast majority of service providers did not comply with the requirement to resolve ninety percent of the complaints within fifteen working days (retrieved from <http://thestar.com.my>). The National Consumer Action Council of Malaysia (2020) reports that consumers lost RM30 million in online purchases during the Covid-19's Movement Control Order.

Malaysia's mobile operators have been experiencing significant challenges to successfully benefit from its online sales portal. One of the leading mobile operators reported that in 2017, less than five per cent of the products were sold via its online portals. Due to low take-up rates and operational issues, companies have ceased various online sales portals, leading to poor performances. The MCMC Report (2018) indicated that most mobile operators' three-year (2014 – 2018) operating profit margin experience critical challenges. This situation has brought down the operating profit margin from 53 per cent to 37 per cent. Ultimately, this decrease suggests a more innovative approach to boost sales.

Online Purchasing in Malaysia

According to the results of a survey conducted by MCMC Internet Users in 2018, it was found that 90.7% of respondents accessed the internet using their smartphones. In addition to this, 20.9 million people have smartphones, and 22 million of those people access social media on their mobile devices (MCMC Report, 2018). Therefore, more than half (51%) of Malaysians who have access to the internet have made their most recent online purchase using their mobile device. The e-commerce experience is gaining the customers' trust, which is a significant



development (retrieved from www.tnsglobal.com, 2017).

The monthly traffic ranked by Marketing Signal Lab (2020) indicates Malaysia's top five online shopping sites. These sites include Lazada (31.3m), Mudah. My (12.37m), Shopee (10.88m), Presto Mall (8.4m), and PGMall. My (3.2m). Incidentally, Rakuten made its debut in 2011 and ceased business in 2015. Meanwhile, 11street.my was launched in Malaysia in January 2015, and was purchased by SK T in June 2019, rebranded as Presto Mall (retrieved from <http://www.ecommercemilo.com>, n.d.)

According to Global data (2020), the preferred devices for accessing e-commerce in Malaysia are smartphones (52 percent), desktops (42 percent), and tablets (6 percent).

Online purchasing adoption in Malaysia is still relatively low at 53.3 per cent, despite the increase from 48.8 per cent the year before (MCMC Industry Report, 2018). This result is supported by Guled Aden Faran et al. (2018), which reported that the confidence level of Malaysian towards online is at a marginal level. In addition, the percentage of people who intend to make a purchase online in Malaysia is found to be lower than in other Southeast Asian countries. Therefore, in order to play a more significant role and compete effectively in the market, online retailers need to have a comprehensive understanding of the requirements posed by customers (Chen et al., 2009).

Online Purchase Intention

Consumers who intend to buy online have online purchase intent (Pavlou, 2003). The term comes from purchase intention, according to Shaheen Mansori et al. (2012). (Close and Kukar-Kinney, 2010). This cognitive state reflects a consumer's plan to buy products and services soon (Howard and Sheth, 1969). This refers to consumers' willingness to shop online. Buying products, services, and information online is internet purchasing behaviour (George, 2004; Khalifa and Limayem, 2003). E-commerce pre-purchase satisfaction drives purchase intention (Bai et al., 2008). Online shopping uses virtual carts (Close and Kukar-Kinney, 2010). These carts hold items

temporarily before purchase. This behaviour is a key predictor of actual purchasing (Chen et al., 2010). It also shows that online shoppers prefer virtual stores or websites.

Another study denoted online purchase intention as the intention to frequently purchase products, utilise the internet whenever appropriate, and continuous purchase future items (Moon and Kim, 2001). Studies found discrepancies in consumer behaviours, including impulsive purchasing inside a store (Girard et al., 2003). Meanwhile, other consumers exhibit impulsive purchasing during grocery shopping, where their lists are often left unfulfilled (Ramus and Nielsen, 2005). This behaviour is more frequented for inexpensive items in stores (Girard et al., 2003). According to a report published by ecinsider.my (2016), Malaysia's online purchasing behaviour are skewed towards daily supplies, which top the respondents list at 39%. These items include health and beauty, fast-moving consumer goods, groceries, and kitchenware.

Technology Acceptance Model

Empirical studies presented prevalent explanations for online shopping behaviour (Mady, 2018; Thoradeniya *et al.*, 2015; Tong, 2010). Examples include the Theories of Reasoned Action (TRA) (Fishbein and Ajzen, 1977), the Theory of Planned Behavior (TPB) (Ajzen, 1991), and the Technology Acceptance Model (TAM) (Davis, 1989). According to the Theories of Planned Behaviour and Reasoned Action, an individual's attitude is a direct determinant of his or her intention to perform a behaviour (Ajzen and Fishbein, 1980; Seock and Norton, 2007). In the meantime, it was discovered that consumers' attitudes toward online shopping have a positive effect on their online purchasing and information search intentions (Cheah et al., 2015; Chiu *et al.*, 2018).

Actual system usage, according to TAM, is determined by users' behavioural intention to use, which is influenced by their attitude toward usage.

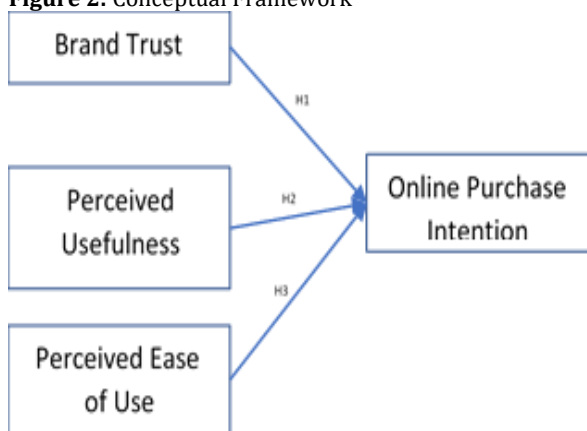
Users' perceptions of a system's usefulness and usability have a direct impact on their attitudes toward it (Tong, 2010; Delafrooz *et al.*, 2009). This theory is supported by Taylor and Todd



(1995), who found that a person's propensity to engage in online shopping will increase if they display a favourable attitude toward it. In contrast, consumers with a negative outlook are less likely to make a purchase via the website (Limbu, Wolf & Lunsford, 2012).

These behaviours are proven empirically in previous studies which deployed the TRA, TAM, and TPB (Yong Jeong Yi, 2021; Soeun You and Beom Jun Bae, 2016; Aries Susanto, et al., 2016; Xiao Juan Zhang et al., 2017; Shah Pintu and Anuja Agarwal, 2020; Sultan Muhaya Al-Daihani, 2018; Mokh Suef, Suparno Suparno and Moses Laksono Singgih, 2017; Mohammed Alharbi, Peter John Dowling and M. Ishaq Bhatti, 2019; Jian Wei Cheong, Siva Muthaly, Mudiarasan Kuppusamy and Cheng Han, 2020). However, most researchers did not specifically address the factors influencing attitude and technology adoption for online purchase of telecommunication products. Subsequently, these concerns are put into a conceptual framework in Figure 2, derived from literature support and related evidence.

Figure 2: Conceptual Framework



Based on the findings of the literature review, the study has come up with three hypotheses, which are as follows:

H1. There is a relationship between Brand Trust and online purchase intention of mobile telecommunications services among smartphone users in Malaysia.

H2. There is a relationship between Perceived Usefulness and online purchase intention of mobile telecommunications services among smartphone users in Malaysia.

H3. There is a relationship between Perceived Ease of Use and online purchase intention of mobile telecommunications services among smartphone users in Malaysia.

RESEARCH METHOD

The survey method has been employed to collect data for this study because it is the most appropriate approach (Sekaran and Boogie, 2016). The questionnaires for this study were developed using a 5-point Likert scale. A quantitative survey using a convenience sampling technique was conducted via online questionnaires which were placed in DesaMall's e-commerce portal and individuals with past online purchase experiences as part of the qualifying criteria (Uma Sekaran and Boogies, 2016). A total of 500 online responses obtained and the final sample size of 400 was selected in this study based on the respondents' past experiences in performing online purchasing (Morgan and Cohen, 1990).

This study developed its questionnaire using a five-point Likert scale by aligning item preferences with previous research. Notably, this scale requires respondents to evaluate multiple questionnaire statements on a continuum from "strongly disagree" to "strongly agree" in order to collect primary data (Ward et al., 1998).

The gathered samples were analysed using SPSS version 24 and AMOS version 20 software for analysis, and testing. Frequency, descriptive, exploratory factor, measurement, structural equation model, and constraint and unconstrained model analyses and reliability tests were also employed as part of detailed analysis and testing.

RESULTS AND DISCUSSIONS

The questionnaires were placed in Desamall's e-commerce portal in which 500 respondents have responded. From the survey, 400 (80%) were selected as they had prior experience in doing online purchases. These responses were analysed using the Likert scale, where the statements were numerically coded between one and five. Meanwhile, the research variables comprise three exogenous and single endogenous latent constructs. The validation and reliability tests were performed before



distributing the questionnaires to 60 eligible respondents.

The respondents' data were validated using several tests, including reliability (Cronbach's alpha), linearity and homoscedasticity, and multicollinearity. From these tests, it was found that the data from the questionnaires were valid and reliable to pursue the research.

The Skewness and Kurtosis values are between ± 1 and ± 3 , according to the normality test, proving that the data is distributed normal. The results summary based on the tests are presented in Table 1, Table 2, and Table 3 below.

Table 1: The Demographic Statistics of the Respondents

Demographic Variable	Frequency	Percentage
Mobile Operator		
Celcom	149	37.3
Maxis	44	11.0
Digi	65	16.3
U Mobile	95	23.8
Altel	47	11.8
Total	400	100.0
Age		
17 Years and Below	1	0.3
18 to 29	239	59.8
30 to 39	74	18.5
40 to 49	41	10.3
50 to 59	41	10.3
60 Years and Above	4	1.0
Total	400	100.0
Gender		
Male	179	44.8
Female	221	55.2
Total	400	100.0
Ethnicity		
Malay	349	87.3
Chinese	24	6.0
Indian	15	3.8
Others	12	3.0
Total	400	100.0

Table 2: KMO, Cronbach α Coefficient of Reliability and Factor Loading

Variable	KMO Value	Cronbach α coefficient for each variable	Aggregated Cronbach α coefficient	Factor Loading
Brand Trust	.834	0.843	0.883	.749 - .819
Perceived Usefulness	.702	0.880		.648 - .833
Perceived Ease of Use	.874	0.888		.766 - .857
Online Purchase Intention	.848	0.908		.782 - .856

The inter-item correlation matrix shows that most values are .3 and above, indicating that the items are correlated (Pallant, 2016). Meanwhile, the Multi-collinearity revealed that the VIF and Tolerance values are < 10 and $> .10$, suggesting no multicollinearity symptoms (Sekaran and Boogie, 2016).

**Inferential Analysis
 Measurement Model**

The Confirmatory Factor Analysis (CFA) procedures were executed, and the results are summarised in Figure 3 below.

Figure 3: The Measurement Model

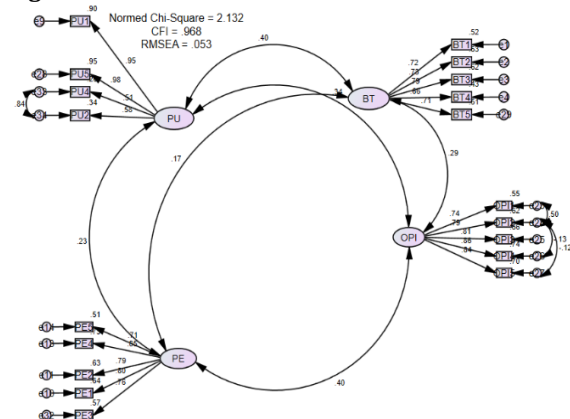


Table 3: CFA Results for the Measurement Model

Factor	Item	Factor Loading Standardised	AVE	CR	Cronbach's Alpha
BT	BT1	.72	.511	.839	.843
	BT2	.73			
	BT3	.75			
	BT4	.66			
	BT5	.71			
PU	PU1	.95	.615	.855	.880
	PU2	.58			
	PU4	.51			
	PU5	.98			
	PE				
PE	PE1	.80	.614	.888	.888
	PE2	.79			
	PE3	.76			
	PE4	.85			
	PE5	.71			
OPI	OPI1	.74	.655	.904	.908
	OPI2	.79			
	OPI3	.81			
	OPI4	.86			
	OPI5	.84			
Total of 19 items		Factor loading $\geq .50$			Overall Cronbach's alpha is .883



Note. Factor loading > .50 indicates Uni-dimensionality is achieved.

Table 4: Construct Validity – Model Fitness Index

Validity Type	Criteria	Value	Description	Result
Absolute Fit	RMSEA	.053	Cut-off > .08 is good fit	Achieved
Incremental Fit	CFI	.968	Cut-off > .90 is good fit	Achieved
Parsimonious Fit	Chi-Square/df	2.132	Cut-off < 5 is good fit	Achieved

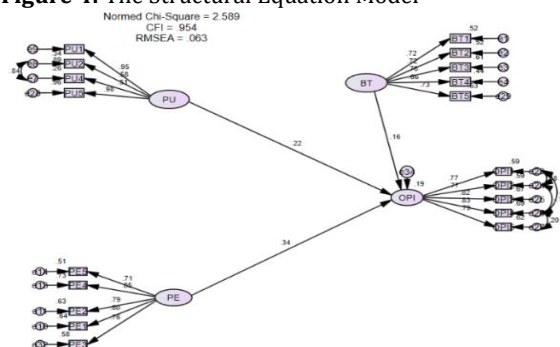
Table 5: Discriminant Validity – Latent Constructs Correlation < .85

			Estimate
PU	<-->	PE	0.229
OPI	<-->	PU	0.339
BT	<-->	PU	0.402
OPI	<-->	PE	0.396
BT	<-->	PE	0.174
OPI	<-->	BT	0.292

Upon completing the CFA, the data was again checked on normality using Skewness and Kurtosis, and the values were between ± 1 and ± 3, which indicated the data is distributed normally.

Structural Equation Model

Figure 4: The Structural Equation Model



Note. Chi-Square/df = 2.589, CFI = 0.954, RMSEA = 0.063, indicating model fit.

Table 5: Squared Multiple Correlations

Construct	Estimate
OPI	0.191

Table 6: Summary of Hypotheses Testing

No	Hypothesis Statement	Covariance Analysis	Regression Weight Analysis	Result
H1	Brand Trust exhibit a positive relationship towards online purchase intention of telecommunication products.	$\beta = 0.116; p < 0.001$	$\beta = 0.172; p < 0.05^*$	Supported
H2	Perceived Usefulness exhibit a positive relationship towards online purchase intention of telecommunication products.	$\beta = 0.159; p < 0.001$	$\beta = 0.202; p < 0.001$	Supported
H3	Perceived Ease of Use exhibit a positive relationship towards online purchase intention of telecommunication products.	$\beta = 0.192; p < 0.001$	$\beta = 0.116; p < 0.307$	Supported

* $p < 0.05$

Model Analysis

Figure 4 above indicates the result of the model analysis. Brand Trust is measured using five items, in which all items show significant contributions in building brand trust. The most significant contributor is the respondent's feeling of having their privacy protected, specifically when purchasing services from mobile operators' websites. Meanwhile, the minor contributor is friends and relative's

recommendations in purchasing from these websites.

Trust increases competitiveness reduces searching and transaction costs while mitigating opportunism in uncertain contexts. Accordingly, trustworthy brands will benefit more than less trusted competitors (Syed Shah Alam and Norjaya Mohd Yasin, 2010). The findings of the section show that Brand Trust is a crucial factor. Notably, the consumer's attitude towards online purchasing of mobile



telecommunications services can be further enhanced by addressing several factors. These factors include experiences, recommendations from friends and relatives, and the expectation of service performance.

Perceived Usefulness was measured using four items. The most significant contributor is the respondent's increased ability to purchase the products using mobile operator's websites. Contrastingly, the least significant contributor is how the mobile operator's website (e.g., most viewed deals and booking availability) support the respondent's purchase decision. This result indicates that respondents perceive effectiveness, better performance, and productivity if they purchase telecommunication products online (Davis, 1989). In this section, the findings suggested Perceived Usefulness as a crucial factor. Furthermore, the consumer attitude towards online purchasing of mobile telecommunications services can be further enhanced by addressing several factors. These factors include convenience and website usefulness in enhancing purchasing decisions, which ultimately increases the respondent's purchase of their desired products.

Perceived Ease of Use is measured using five items, where the most notable contributor is online purchasing via mobile operator's websites. Specifically, the site entails a seamless experience across multiple devices and channels. The most insignificant contributor is the ease of navigation or information search in online purchasing through mobile operator's websites. In this case, the Perceived Ease of Use is related to the internal belief on the respondent's mental effort assessment while using the mobile operator's websites (Davis, 1989).

Significantly, Perceived Ease of Use is a vital factor in consumers' attitudes towards online purchasing of mobile telecommunications services can be further enhanced. This idea can be achieved by enhancing learning access and reducing consumers' purchasing efforts. Others include seamless experience across multiple devices and channels, enhanced navigation, and information. Similarly, Online Purchase Intention is measured using five items. Based on these items, the most profound contributor is the respondent's consideration in purchasing the

mobile operator's services upon reading online reviews or comments and vice versa.

Brand Trust and Online Purchase Intention have a direct relationship, as shown in Table 6, with a regression coefficient of 0.172. Perceived Usefulness and Online Purchase Intention have a similar relationship, with a 0.202 regression coefficient. Perceived Ease of Use and Online Purchase Intention also exhibit a regression coefficient of 0.307, which is similar to the relationship seen between those two variables. Therefore, the three factors must be taken into account by product managers and marketers.

The OPI predictors are expected to account for 19.1% of the variance. According to Cohen (1988), endogenous latent variables should have R^2 values of 0.26 (substantial), 0.13 (moderate), and 0.02 (weak). The R^2 value may vary from one field of study to another, according to other studies. Notably, the outcomes are in line with earlier TAM research. Consumers can increase their performance or productivity with new technology without exerting a lot of effort (Davis, 1989; Seyal & Rahman, 2003; Peter Halim et al., 2014). Additionally, this concept demonstrated perceived usefulness and perceived ease of use (Koufaris & Sosa, 2004; Chen & Barnes, 2007).

Perceived Ease of Use, which has a 0.307 regression coefficient, is the factor that significantly influenced online purchase intention. This finding suggests that consumers thought using mobile operators' websites to buy mobile telecommunications services required less mental effort. The outcome is consistent with earlier research, including that of Seyal and Rahman (2003). Interestingly, in e-commerce, brand trust is regarded as a crucial element in the buyer-seller relationship and online purchase intention (Jarvenpaa et al., 1998; Zhou et al., 2007; Naveed and Eddaoudi 2009; Yulihhasri et al. 2011; Swidi et al., 2012). Trust includes expectations of qualities from both the online seller and the online consumer (McKnight et al., 2002; Kraeuter, 2002). In short, perceived usefulness is the internet's ability to effectively support consumers' purchasing and accomplishing their tasks (Monsuwe, Dellaert, and Ruyter, 2004). A previous study in Malaysia found that a specific



system's perceived usefulness directly impacts its information system usage (Ndubisi & Jantan, 2003; Kim & song, 2010; Enrique et al., 2008; Xie et al., 2011). Meanwhile, the perceived ease of use is the internet accessibility as a purchasing medium (Monuwe, Dellaert, and Ruyter, 2004). According to the TAM, perceived ease of use exhibit direct and indirect effect on consumers' intention to purchase online. The indirect effect on intention occurs through perceived usefulness. In this context, technology is perceived to be more useful if its utilisation is uncomplicated (Venkatesh, 2000; Dabholkar, 1996; Davis, Bagozzi, and Warshaw, 1989).

5.0 DISCUSSION AND CONCLUSIONS

The purpose of this study was to investigate the relationships between a consumer's intention to make an online purchase of mobile telecommunications services in Malaysia and factors such as trust in the brand, perceived usefulness, and perceived ease of use. According to the results of the tests that are outlined in Table 6, all of the predictors exhibited significant relationships with regard to the dependent variable. The findings were consistent with those of earlier research, which found that a consumer's intention to make an online purchase is positively influenced by factors including brand trust, perceived usefulness, and perceived ease of use. Notably, the perceived ease of use displayed the most significant effect on the intention to make an online purchase, followed by the perceived usefulness and the trust in the brand. However, the three variables explain 19 per cent of Online Purchase Intention variance. According to Cohen (1988), the R^2 value of 0.19 represented moderate to the substantial assessment of the endogenous variable. In this case, 81 per cent of its variance were not assessed. The mobile operator's website is always the respondents' preferred brand based on the study. Accordingly, the websites protect their privacy, ensure security, and assure the respondents of fewer service failures.

Notably, the Perceived Ease of Use showed a significant relationship towards attitude. The study discovered that the websites are easy to learn and navigate and provide seamless purchasing experiences across multiple devices. However, Perceived Usefulness displayed the weakest link towards attitude. Hence, mobile

operators must focus on providing helpful information in helping purchase decisions. Moreover, they must offer convenient purchasing methods for respondents and increase their ability to purchase their desired products. Significantly, consumers continuously seek mobile operators that can provide excellent consumer value. Therefore, products and services of outstanding value attract users to purchase via online sites.

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