

# The Influence of Perceived Ease of Use, Perceived Usefulness and Perceived Product Information on Consumers' Attitude toward Online Purchase Intention

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## Abstract

This study attempts to investigate whether perceived ease of use, perceived usefulness, perceived product information factors have influence on consumers' attitude toward online purchase intention of cosmetics products. The study also examines whether consumers' attitude would have an influence on their online purchase intention. To achieve the objectives, 120 twenty willing Malaysian consumers with past experience of purchasing cosmetics through online platform participated in a survey starting end of October until early December 2019. The relationships between factors were analysed using the structural equation modelling (SEM-PLS) version 2.0. Results show that only perceived usefulness was positively related to attitude, while perceived ease of use and product information were insignificant. In addition, attitude was shown to relate positively with consumers' online purchase intention. For cosmetic product e-retailers, the findings imply that they should focus on consumers with positive attitude as such attitude would affect their online purchase intention of cosmetics. The e-retailers should also focus on making sure that consumers have positive usefulness impression of the e-commerce platform used as this would have a direct positive impact on the consumers' attitude toward online purchase intention. This study contributes valuable insights to e-commerce industry, particularly the e-retailers, scholars, policy makers and firms on the role of consumers' attitude towards online purchase intention for cosmetic products in Malaysia.

**Keywords:** *Perceived ease of use, perceived usefulness, perceived product information, attitude, online purchase intention*

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## 1. Introduction

Online shopping is a form of e-commerce which allows consumers to purchase desired goods and products through internet. Businesses uses the Internet as the tool or medium to communicate with their consumers. Internet is useful in marketing and delivering of products or services as it provides a flexible, open, informal and interactive ways to interacting parties. As such, internet applications have been incorporated in many business operations to allow consumers to participate in their e-

commerce or online purchase. Today, the e-commerce is one the fastest growing retail market not only in Europe and South America but also in Asia. The Euromonitor (2015) Total Retail Survey shows 93% of all South East Asia consumers surveyed reported that they have had online purchase experience; and that most of them are regular online shoppers too. In Malaysia, online retailing grew from RM1.29 billion in 2012 to RM5.09 billion in 2017. Euromonitor forecasted online retailing to hit RM7.67 billion in 2019. Based on previous study done by

Mastercard in 2016, 89.4% of respondents in Malaysia making at least one purchase in the last three months (Surendran, 2018). As per June 2016, Internet World Stats shows a 68.1% internet penetration among Malaysians which online sales amounted to RM3.97 billion. In other words, Malaysia has 21,090,777 out of its 30,751,602 total population who are internet users (Internet Live Stats, 2020).

The country is observed to have high internet and smartphone penetration levels, heavy credit card usage, and is provided with a good transportation infrastructure; these factors have contributed towards making the online retail a viable sector. Unfortunately, the online retail segment in Malaysia has a relatively small footprint (less than 1% share) among ASEAN countries (Leopairote, 2015). Shopee's regional managing director, Ian Ho observed that Malaysia's online retail is still be at an infancy stage as survey shows many Malaysians reported that their online shopping experience started within the past three years (Tan, 2018). Cyber security issues, increase in prices and intangibility of products are the major challenges to the growth of Malaysia's e-commerce sector. The government for instance has introduced specific regulations in its new legislation in 2019 in attempt to reduce online fraud (Tan, 2018). Leopairote (2015) suggested that consumer protection by legislation and online retailer's effort to improve their consumer experiences (product photography, website usability, money-back guarantees, etc.) would help consumers to be familiar and adapt to online shopping. In general, Malaysia is an uncontested market with eager consumers and technology readily available for entrepreneurs or existing brands to start their e-shopping sites. As e-commerce platforms grow, Malaysia's cyberspace market is observed to start moving away from mainstream online purchase to wider range of categories like daily supplies (health & beauty, grocery, fast moving goods etc.), followed by home appliances (electronics equipment) and unique items (locally unavailable products) (Rao, 2019; Yuen, 2018).

### **Cosmetic Industry in Malaysia**

For the past 20 years, the cosmetic industry, or the beauty industry has been growing by 4.5% a year globally (Leopairote, 2015), mainly due to increasing consumer disposable incomes and their changing lifestyles. An increase in the emphasis on personal physical appearance has contributed to the rise of new ASEAN brands in beauty industry. In Malaysia, Silky Girl, Empro, VL skincare and Esmaria Organics are examples of the major competing brands. Recent years have seen Asian beauty standards to start influencing the Western markets; the repercussion is such that consumers in general now are focusing on buying Asian products especially those from Korea and Japan instead of leaning towards western cosmetics like previously practiced. According to Tey (2016), Malaysia shows a 4.4% growth in 2016 compared to 2015, implying the potential for the beauty industry as a driver of the economy.

The strong growth of the beauty industry in Malaysia has seen the emerging of online beauty stores like Hermo, Althea, Rakuten so that consumers can purchase cosmetics through internet without visiting the bricks and mortar store. Existing brands like Sephora, Kiehl's and The Body Shop have also developed their own e-shopping sites. The online beauty store is different from the normal online shopping sites, mainly because consumers' purchase intention for cosmetics is heavily relying on their personal experience(s), perceptions, impulse, marketing efforts and brand awareness. As such, cosmetic companies must have a deep understanding of their target market so that they can plan excellent strategies to draw customer's attention to their products and brands. The lack of touch and feel element (intangibility factor) is believed to be the root cause to the interruption of cosmetic e-commerce growth in cyberspace. As explained by Martin et al. (2017), generally, it is perceived that consumers who shop online would suffer from less available information as they are unable to touch retailer's offerings, making it difficult for them to discriminate among products of varying quality. However, they also reported of a survey results carried out in Spain that found a negative link between consumer's need for touch and perceived product quality, indicating that the need for touch or intangibility is not the determinant of product quality (Martin et al, 2017); meaning that intangibility is not the major disadvantage of online shopping. In Malaysia's case, the reasons for the remaining 9% that do not shop online (91% represent online users who shop online) are mainly due to trust issue on seller, product quality and security (Wong, 2014).

Therefore, this study extends the existing Technology Acceptance Model by adding perceived product information to the framework in order to achieve the objective of this study. This study will investigate whether perceived ease of use, perceived usefulness, perceived product information factors have influence on consumers' attitude toward online purchase intention of cosmetics products.

### **2. Literature Review**

The literature has acknowledged the Technology Acceptance Model (TAM) as one of the theories used by researchers in predicting users' acceptance of any information technology system and in diagnosing design problems that users may face before they actually use the system. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the main two variables proposed in TAM. PU refers to the degree to which a person believes that use of technology will produce better outcomes. In the context of this study, it indicates that if consumers perceive that online purchasing of cosmetics is efficient, then they will be more likely to purchase cosmetics online. As for PEOU, it explains the users' perception of the amount of effort required to utilize the system or the extent to which the use of this technology will be

effortless. Other factors such as internal beliefs, attitudes and purchase intention are also identified in the Technology Acceptance Model (TAM). For the purpose and context of this study, the focus will be only on selected variables, namely, PU, PEOU, attitude towards online purchase intention and online purchase intention.

### Attitude toward online purchase intention

The core idea of TAM is that the user's acceptance of technology is determined by consumer's behavioral intention. Behavioral Intention is used to express the extent to which a consumer formulates conscious plan to use or not to purchase cosmetics online. As actual human behavior, if a person intends to do a behavior then it is likely to be done. As TAM suggests that user formulate a positive attitude toward technology when they perceive it to be useful and easy to use, higher level of PU and PEOU predict favorable attitudes which in turn predict intentions to use (Lucas, 1997). While actual use of a technology system is influence directly or indirectly by the user's behavioral intentions. TAM was updated many times to empirically verify particular assumptions.

Attitude towards a particular act represents a person's overall positive and negative beliefs and evaluation of the behavior. In turn, attitude is derived from behavioral beliefs of particular and evaluation of those outcomes. TAM is an influential research model in information systems field. This model is specifically tailored to understand the adoption of computer based technologies on the job or in the workplace. The increasing popularity and proliferation of online shopping has stimulated widespread research aimed at understanding what influence consumer's online shopping behavior.

According to Chen and Tung (2014), consumers' attitude toward online shopping effect their online buying intentions. When the consumers are familiar and have knowledge of e-commerce there is more chance that the consumer purchase products through online sites. Ansari and Mohammed (2015) also stated that attitude is one of the predictors of consumer purchase intention toward cosmetics products. It can be concluded that consumer with positive attitude toward online purchase will have positive online purchase intention (Kaur et al., 2014; Rahman et al., 2015). In order to relate previous literature on attitude with intention of consumers to purchase cosmetics online, hypothesis 4 is proposed as below:

*Hypothesis 4 (H4): Attitude has a significant and positive effect on online purchase intention towards cosmetics.*

### Perceived Ease of Use

Perceived ease of use (PEU) is defined as when the person believes that using the new technology will be free of effort (Gong, 2013). In online shopping context, it includes purchase process flow, site navigation and site design. Ease of use in the perception of consumer is regarding the online purchase process leading to the final outcome. According to Monsuwé (2016) study done in Europe, perceived ease of use was one of the factors that

drive consumer purchase intention to shop on the internet. Another research in determining Malaysian consumer to make online purchase concludes that among perceived usefulness, ease of use and enjoyment; perceived ease of use was the dominant factor that encourage consumer online shopping behaviour.

Previous studies have found that perceived ease of use has positively related with online purchase intention (Rahmiati, 2017; KUSDANI, 2014). Oentario et al. (2017) found that perceived ease of use has a positive and significant effect on consumers' attitude toward online purchase intention. Consumers' positive attitude later influence consumers' online purchase intention. Based on previous research, hypothesis 1 is formed as below:

*Hypothesis 1 (H1): Perceived ease of use has a significant positive effect on attitude toward purchase cosmetics online.*

### Perceived Usefulness

Perceived Usefulness (PU) as the degree to which a person believes that using a particular system would enhance job performance. In online shopping context, it includes payment security and trust on the e-commerce service provider. Previous studies done on consumer online intention (include m-commerce and e-commerce intention) vastly apply TAM theories, generally perceived usefulness are dominant factor for consumers in Malaysia, US and Europe (Ramlan and Omar, 2011; Monsuwé et al, 2016). With strong suggestion from previous related literature that perceived usefulness are determinant of consumer adoption of online shopping behaviour in Malaysia.

Moslehpour et al. (2018) found that perceived usefulness has a significant impact on e-purchase intention. The study found that Taiwanese consumers' perceived ease of use of an online store positively influences their buying intention and repurchase intention in the future. Customers who perceive technology as a useful too for online shopping tend to buy more from online sites. Previous studies also found that perceived usefulness influence online purchase intention (Aldas-Manzano et al., 2009; Yoon & Steege, 2013). Based on previous studies, hypothesis 2 is formed as below:

*Hypothesis 2 (H2): Perceived usefulness has a significant positive effect on attitude toward purchase cosmetics online.*

### Perceived Product Information

Perceived Product Information (PPI) in this study refers to the product ingredients that are listed on shopping sites. With growing needs in beauty market, cosmetics provide a competitive advantage by using new, value-added active ingredient in product formulations. It was believed that consumers put more attention on product effects rather than product ingredient according to study done by Mansor et al. (2010). Another supporting study on skin care product ingredients implies that consumers in Madhya Pradesh have conscious on product quality and ingredients, especially working women (Faisal Khan,

2013). In addition, study done in Zoomerang on young female consumer's interest and desire to try cosmeceuticals shown that perceived information utility is the most significant factor in boosting consumer confidence on particular cosmeceutical product (Meng & Pan, 2018).

Generally, studies pointed out those product ingredients are one of the important factors in determining intention to purchase cosmetic or skincare as described above. Compared to other variables for extension of TAM on online shopping behaviour, the role of product ingredients in consumer beauty care decision making are consider understudied among Malaysian. Hence, this study has extended TAM model with perceived product information in order to test its significant, whether it improves consumer intention to purchase cosmetics online.

Previous studies have stated that the accuracy of product information positively impact consumers' attitude toward the sites (Hausman & Siekpe, 2009; Yoon, 2002). Integrity and accuracy of information is an important factor affecting consumers' online purchase intention. Meng and Pan (2018) found a significant and positive impact between perceive information and attitude toward cosmetics products. Consumer may have a positive attitude toward website that provides them more detailed and comprehensive information about the products. Based on previous research, hypothesis 3 is formed as below:

Hypothesis 3 (H3): Perceived product information has a significant positive effect on attitude toward purchase cosmetics online.

### 3. Methodology

The study was designed to be quantitative in nature. A total of 120 survey questionnaires were distributed to willing consumers who have experienced buying cosmetics through online platform over a period of two months. Items for the questionnaire, namely, "I will prefer purchase from online site that has detailed information of ingredients on their selling products", "I am more confident with online site maintains a toll-free phone number staffed by technical person who can answer questions quickly and accurately", "I am more likely to purchase from online site with site navigation that is user friendly (Example: comparison, filter features etc.)", "I am pleased to purchase cosmetics online", "I intend to purchase cosmetics online in future", were adopted/adapted from previous studies (Xiao, 2010; Mansor & Yacoob, 2010; Chang et al., 2012). A 5-point Likert scale (1=strongly disagree to 5=strongly agree) was used to measure the five item statements for each of the perceived ease of use, perceived usefulness, perceived product information, attitude and online purchase intention variables. The data were analysed using the Science (SPSS) and Partial Least Squares Structural Equation Modelling (PLS-SEM).

### 4. Results

Of 120 returned questionnaires, only 100 (85%) were usable for further data analysis. Respondents' profile reveals that majority of them were female (77%), from the age category of 31 – 40 years old (40%), possess Malaysian Certificate of Education (MCE) and above (96%). Convergent validity is a degree to which items from the same construct should share a high proportion of variance in common; factor loadings that exceed 0.50, composite reliability (CR) greater than 0.7 and average extracted variance (AVE) of more than 0.50 can be concluded acceptable (Hair et al., 2010). Results in Table 1 show that the loadings for all items are above the recommended value; and the CR values that ranged from 0.831-0.949; and AVE (0.50 to 0.788) are above the cutoff values. Based on these results, the measurement model is concluded to have adequate convergent validity; with all three constructs considered valid measures according to their parameter estimates and statistical significance (Chow & Chan, 2008).

Table 1: Convergent Validity Test

Item	Item Code	Factor Loading	CR	AVE	Cronbach's Alpha
ATT	ATT1	0.825	0.943	0.769	0.924
	ATT2	0.842			
	ATT3	0.864			
	ATT4	0.916			
	ATT5	0.931			



INT	INT1	0.852	0.949	0.788	0.932
	INT2	0.871			
	INT3	0.943			
	INT4	0.918			
	INT5	0.851			
PEU	PEU1	0.805	0.900	0.645	0.863
	PEU2	0.833			
	PEU3	0.729			
	PEU4	0.871			
	PEU5	0.771			
PPI	PPI1	0.586	0.886	0.614	0.847
	PPI2	0.910			
	PPI3	0.774			
	PPI4	0.885			
	PPI5	0.718			
PU	PU1	0.700	0.831	0.500	0.744
	PU2	0.660			
	PU3	0.823			
	PU4	0.569			
	PU5	0.756			

Table 2 presents the discriminant validity of constructs for this study on which the measurement model had demonstrated adequate convergent validity and discriminant validity. Discriminant validity is the extent to which a construct is different to other constructs (Hair et al., 2010). The square root of AVE for each construct should be higher than the correlation for each construct (Compeau et al., 1999).

Table 2: Heterotrait-monotrait ratio (HTMT)

	ATT	INT	PEU	PPI	PU
ATT					
INT	0.802				
PEU	0.315	0.248			
PPI	0.398	0.382	0.461		
PU	0.486	0.299	0.579	0.703	

Table 3 shows the results of the modelling used for hypothesis testing. The results show that H1 and H3 are found to be insignificant, while H2 and H4 are supported. The  $R^2$  for main model was 0.620, meaning that 62% of the variance in the online purchase intention toward cosmetics can be explained by perceived ease of use,

perceived usefulness, attitude and perceived product information.

Table 3: Path Coefficient and Hypotheses Testing

	Relationship	Path Coefficient	SE	T value	P value	Supported
H1	PEU → ATT	-0.069	0.087	0.797	0.213	No
H2	PU → ATT	0.188	0.102	1.847	0.032	Yes
H3	PPI → ATT	0.072	0.110	0.654	0.257	No
H4	ATT → INT	0.589	0.077	7.663	0.000	Yes

Predictive relevance ( $Q^2$ ) measures of how well the observed value are reconstructed by the model and its parameters estimates which can be tested by using blindfolding procedure (Hair et al., 2010). Predictive relevance for the model tested is concluded when  $Q^2 > 0$  which is true for this study's model as the  $Q^2$  is 0.454 that is higher than the cutoff value required. Cross-validated redundancy measures show that the structural model has predictive relevance.

## 5. Discussion and Conclusion

Four hypotheses were developed to achieve the research objectives of this study, which were to firstly, examine the relationships of consumers' perceived ease of use, perceived usefulness, and perceived product information to their attitude toward online purchase intention; and secondly, to examine the relationship between consumers' attitude toward online purchase intention and online purchase intention. This study has found that only perceived usefulness has a positive relationship with consumers' attitude toward online purchase intention; and that consumers' attitude has a positive relationship with their online purchase intention of cosmetics. Perceived ease of use and perceived product information were found to have insignificant effect on consumers' attitude toward online purchase intention. Reason for the insignificant result for PEOU may be due to the use of respondents who are experienced online shoppers. The respondents may have gained self-efficacy in performing the same behavior which means that they would not be strongly impacted by the site's supposedly ease of use (PEOU) when compared to novice users. As for the insignificant result for PPI, it may be due to Malaysian respondents' consciousness and behavioral knowledge to check on the product's ingredient before intending on making a purchase. Apparently, the online site provided with detailed information on cosmetics seems to be of no significance in encouraging consumers' online purchase intention of cosmetics.

For cosmetic product e-retailers, the findings imply that they should focus on consumers with positive attitude as such attitude would affect their online purchase intention of cosmetics. The e-retailers should also focus on making sure that consumers have positive usefulness impression of the e-commerce platform used as this would have a direct positive impact on the consumers' attitude toward online purchase intention. This study contributes valuable insights to e-commerce industry, particularly the e-retailers, scholars, policy makers and firms on the role of consumers' attitude towards online purchase intention for cosmetic products in Malaysia.

The results of statistical analyses provided by this study contributed towards fulfilling cosmetics e-retailers' interest to understand how consumers behave when shopping for cosmetics online. The insights would help them to attract and create what their customers value most, which is essential for them to stay competitive in the industry. Marketing efforts can bring huge impact on company's profit. A reliable, valid and up to date research is useful for a company to develop a workable marketing mix for example social media marketing development team in order to produce a desired demand from their target market and through a well-planned marketing strategy, with the right price, product, promotion and place that met customer's expectation. In a hindsight, there is still many things to explore and investigate to instill our understandings on Malaysian's cosmetic adoption in cyberspace.

## 6. Limitations and Suggestions for Future Research

Limitations of this study have been identified for future research improvements. Firstly, the research was conducted via convenience sampling where most of the survey was filled up by working adults with Malaysian Certificate of Education and above level of education. They may not be representing the true online users in Malaysia and that they should also be evenly distributed with better clustering technique. Secondly, the study was carried out using a cross sectional data. A longitudinal timeline data may be a better option for future research as researchers could observe any change in respondent's behavior over time.

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