

# Determinants of Online Purchasing Intention of Household Appliance among Malaysians in Klang Valley

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## Summary

This study investigates the determinants of online purchasing intention towards household appliances among Malaysians in the Klang Valley. The study was piloted to test the proposed hypotheses and research question regarding how e-commerce should be developed. A total of 150 questionnaire and online survey responses were analysed for participants' personal views and online purchasing intention towards household appliances. The results show a positive correlation between social interaction, competition, economic rationale and purchasing intention towards household appliances. It was also found that the online shopping experience has a significant influence on purchasing intention. The study adds value to the existing body of knowledge on online purchasing intention factors towards household appliances.

## Key words:

*Online purchase intention, online shopping, e-commerce, household appliances*

## 1. Introduction

Online purchasing intention is one of the bases for the relationship between companies and their customers when customers seek to purchase products or services from companies or manufacturers (Whitney, 2015). Online purchasing intention is one of the main reasons for companies continue to sustain and grow in the marketplace; therefore, one of the objectives of companies is to move consumers from offline to an online purchasing environment as is the case with Amazon, Alibaba and JD.com. It has been found that shopping online is an enticing trend around the world; therefore, enhancing the online shopping relationship between customers and businesses is imperative (Rigby, 2018; Thamizhvanan & Xavier, 2013; Zendejdel & Paim, 2015). Purchasing intention in online shopping (e-commerce) is a relatively recent business concept as consumers and businesses shift their relationship to online platforms such as Amazon and Alibaba, which dominate the online retail market (Ahn, 2014). Consumers are adapting to the selling methods for products and services on e-commerce websites. However, purchasing intention on these websites has been found to be at average level (Adeline, Khatibi & Ismail, 2006).

This research was based on four independent variables. They are internet security, convenience, price sensitivity and product quality. The main problem for online purchasing intention is that counterfeits and fake products affect consumers' decisions to spend money online. The existence of counterfeit goods and the uncertainty of purchasing genuine goods are still the essential problems between consumers and e-commerce platforms (Soleimani, 2017). In a conservative estimate by the Department of Statistics, it is reported that Malaysia has a counterfeit market value of RM 378 million and household appliances consumption revenue of RM 7.92 (UK Essays, 2015). Selling counterfeit products not only damages consumers' vital interests gravely but also destroys the normal market order. Most consumers respond that online shopping has too many fakes and after-sales guarantees (changing and returning goods) cannot be warranted. If they order and receive the goods and subsequently find that the item was counterfeit, then it is often very difficult to deal with platforms or sellers; sometimes, it is difficult to make an effective complaint or resolve issues. Most often, online counterfeiting in Malaysia also seriously affects consumers' online purchasing intention, which drastically decreases the online purchasing intention. As a basis of purchase intention, consumers are generally price-oriented, seeking quality and genuine goods. However, the quality of goods which considered fake is very poor and damaging. For examples, counterfeit shoes are very easy to degum, fake cosmetics easily harm the skin and counterfeit mobile phones affect trust and confidence. Hence, eliminating counterfeits and fake products from the marketplace is important in reviving the online purchasing intention of consumers.

Online shopping has become a part of everyday life, especially for those with busy lifestyles and in countries such as the United States, United Kingdom and China, where the population is familiar with and accustomed to e-commerce. Nonetheless, research regarding e-commerce purchasing intention is limited for this emerging industry. Hence, this study analyses the determinants of online purchasing intention of household appliances among Malaysians in the Klang Valley. This research also examines the behavioural psychology related to these

factors. The findings from this research are intended to inform policy makers in regulating the e-commerce industry in Malaysia in order to improve the online shopping environment.

## 2. Literature Review

The literature review examines relevant theories for each of the variables being studied. This section presents past research and a theoretical framework to illustrate the relationship between the dependent variable—online purchasing intention among Malaysians—and the independent variables: internet security, convenience, price sensitivity and product quality.

### 2.1 Online Purchasing Intention in Malaysia

The online purchasing intention in Malaysia has been reported to be at an average level as some consumers remain sceptical regarding the e-commerce companies and platforms. E-commerce companies mainly focus on densely populated cities such as the Kuala Lumpur, Klang Valley area, where many people are familiar in using the technology in their daily lives and where the internet infrastructure is established. In addition, consumers in cities are more exposed to advertisements and marketing campaigns by e-commerce websites and social media platforms (Mayayise & Osunmakinde, 2014; Adeline, Khatibi & Ismail, 2006).

The current environment in Malaysia encourages people to utilise internet services. For example, the Prime Minister of Malaysia, Najib Razak, formed a partnership between Malaysia the owner and chairman of Alibaba Group, Jack Ma, to create a Digital Free Trade Zone in Malaysia, whereby the country would become the main hub to sell products and services to other countries in the region as well as in Malaysia. This had a direct impact in boosting and encouraging the population either directly or indirectly to be involved with Malaysia's e-commerce development as a company or consumer (Chen, Wu & Chang, 2013). The e-commerce usage rate in Malaysia has increased since the beginning of 2017, when the government initiative became one of the main contributors to its development. This situation has caused concerns among consumers that lack trust as a result of scammers and hackers that are target and defraud unsuspecting Malaysian consumers (Azam, 2015). The rules and regulations related to e-commerce transactions and cybercrime are not strictly enforced due to the e-commerce being a new industry in the Malaysian market. This, along with news reports of scam victims, has affected the trust of Malaysian consumers in adopting e-commerce (Azam, Qiang, Abbas & Abdullah, 2013).

### 2.2 Internet Security

Internet security is defined as the set of processes established based on rules and regulations with the intent to protect the internet user (Claypoole & Payton, 2014), from the threats that are using the online systems (Tan & Aguilar, 2012). Furthermore, Radu (2013) described internet security as the protection of users' online data and personal information against those who would defraud. Internet security not only has to guarantee the safety of particular transaction but also the speed of the transaction in order to provide an excellent environment for both parties, online seller and buyer. According to Li, Tryfonas and Li (2016), internet security is a global issue that affects online consumers' consumption behaviour. Singh, Kumar, Singla and Ketti (2017) stated that concerns over internet security influence consumers' level of trust with respect to their personal information being exposed or compromised by another party (Montesino, Fenz & Baluja, 2012). Ambritta, Railkar and Mahalle (2015) affirmed that internet security is one of the major concerns of consumers as well due to the possibility of their lives being affected by security breaches involving personal information transmitted during online transactions through e-commerce websites. In lieu of these concerns, internet security has been a lucrative spin-off of the e-commerce industry as more people seek expert help to avoid dangers on the internet. The demand for internet security around the world is high as there have been many cases where data is hacked and used for illegal purposes (Pham, El-Den & Richardson, 2016). Therefore, this internet security is worthy to be studied on the effects towards the online purchase intention.

### 2.3 Convenience

Convenience is defined as the act of being able to carry out or conduct an action without any restrictions or difficulty (Jiang, Yang & Jun, 2013). Convenience is referred to in situations where a person is able to save time and energy when performing something that had been intended. Convenience is also defined as the fitness or suitability to perform the action or requirement with ease or comfort; i.e. 'convenience' confers a lack of challenges or limitations, requiring little effort to complete the action (Nolin & Olson, 2016, based on ZenDesk, 2013; Reimers & Chao, 2014; Wahlen, Horst & Pothoff, 2016). After-sales service is also important for online purchasing, especially for electronics and household appliances, washing machine installation, air conditioner debugging, refrigerator installation etc. Hence, providing a considerate service is the key to ensuring customer consistent purchase intention and frequency. Olsen (2012) assured that the convenience offered by e-commerce websites and applications enhance consumer trust by familiarising them with established standards and these standard should easy to follow and

without much confusion and hassles. Thus, this convenience plays a vital role in this study towards online purchase intention.

## 2.4 Price Sensitivity

Price sensitivity is defined as the reaction and level of effect towards the price of a certain product or service (Ferreira, Vasconcelos & Proença, 2016). Price sensitivity is related to one of the four bases of marketing in which consumers are most affected by the price of the product or service being offered. Price sensitivity is defined as a response or result towards price differences in the market compared with substitutes (Lee, Bonn & Cho, 2015). According to Desmet (2016), there are many different prices regarding the same products across different e-commerce websites and traditional businesses, hence price sensitivity affects the purchasing intention and consumer trust. Jiang, Balasubramanian and Lambert (2015) found that price-sensitive consumers constantly compare the prices of the same or different products or services through many different channels. Furthermore, Bernard, Bertrandias and Gambier (2015) assured large variations in price raise consumer suspicion regarding sellers with very cheap or very expensive prices (Kärki, Shamsuzzoha & Helo, 2012). In the study of Rodiger, Plabmann and Hamm (2016), the consumers would constantly perceive whether a product or service is worth their value or if it is too expensive to purchase. Therefore, price sensitivity affects trust in online purchase intention among consumers in which the quality or quantity of the products and services being offered by the e-commerce companies would raise their scepticism.

## 2.5 Product Quality

The term 'product quality' was first used in a 1947 keynote address by C. R. Sheaffer at inaugural convention of the American Society for Quality Control, the predecessor to ASQ. Quality consciousness, according to Song (2014), is awareness of one's own thoughts, feelings and surroundings; the full activity and engagement of the senses and the thoughts and feelings of individuals and groups. Quality consciousness implies the awareness of customers and the environment around, including what constitutes quality and high performance for people, processes and products. It also suggests that companies must achieve alignment between customers' consciousness with the consciousness of the organisation, thereby allowing full activity and engagement of the senses. Attention must be selectively focused onto what the company can accomplish in the present moment according to that alignment. If the ability of consumers to assess quality prior to purchase is severely impaired, then they will fall back on extrinsic cues in the assessment of quality. The attributes that signal quality to consumers can be characterised as either intrinsic

or extrinsic. Extrinsic cues are lower-level cues that can be changed without changing the product, such as price, packaging, self-location and brand name, whereas intrinsic cues are higher-level cues that are directly related to the product, such as product perception, and are subject to perceptual bias (Akdeniz, 2013). Self-arranged buyer states of mind or psychographics, for example, price and quality awareness, have not been explored. Moreover, according to Ailawadi, Neslin and Gedenk (2001), quality consciousness is characterised as the degree to which a buyer inclines towards good quality products instead of bargaining on quality and purchasing at a low price (Winit, 2014). An assumed essential determinant of consumers' purchase behaviour is their conviction that an item offers higher and better quality (Saleem, 2015). These self-arranged advantages should make purchasing products especially engaging for quality-cognisant consumers. Quality-conscious consumers may concentrate less on price and, in this way, the negative impact of price premium might be weaker for quality-conscious consumers and they might be less influenced by price increases (Chan, 2016). In the study, the product quality is appropriate to be studied on the effects towards the online purchase intention.

## 2.6 Theoretical Approaches

Two approaches have been used in this research to facilitate this study.

### 2.6.1 Behavioural Approach

The behavioural approach states that human behaviour can be learned and unlearned at the desire of the person (Jagau & Vyrastekova, 2017). Human behaviour is related in this research as the variable of convenience and price sensitivity. The behavioural approach states that behaviour is developed in the best interest of the individual. Any undesired behaviour could be unlearned by the person where a more acceptable behaviour can take its place (Zakaria, Fernandez & Schneper, 2017). Online purchasing intention could be viewed through the behavioural approach, where the adoption of e-commerce consumption is a learned experience that the consumer would be able to gain through the usage of the e-commerce website. The behavioural approach is related to convenience based on the behaviour of most consumers who want to get the product or service with the least effort (Peon, Calvo & Antelo, 2015). The behavioural approach relates to price sensitivity as well because most consumers are sensitive towards price. Companies that offer cheaper prices gain immediate appeal from price-sensitive consumers.

### 2.6.2 Cognitive Approach

The cognitive approach refers to consumers' mental processes that stimulate purchase experiences (Ahmad,

Xavier & Bakar, 2014). These experiences are important in enticing consumers to make purchases. Cognitive theory is related to consumer trust on quality, internet security and online purchasing intention where enhanced trust and secured avenue affect consumers' online purchase intention (Snell, White & Dagger, 2014). Therefore, online purchasing intention is affected by the cognitive disposition of the consumers. Consumers believe that their invaluable experiences strengthen their trust towards the products they buy (Skavronskaya, Scott & Moyle, 2017).

### 3. Methodology

The survey items were extracted from previous studies with certain modifications due to the new context of household appliances.

#### 3.1 Population and Sampling

The target population for this research comprises residents of Klang Valley, Malaysia. Sampling process involves selecting appropriate respondents for this research (Sekaran, 2003). This study used a random selection of 150 respondents from Klang Valley. Four variables with a total of 21 measurement items were selected from previous studies (Lodorfos, Trosterud & Whitworth, 2006; Topaloğlu, 2012).

#### 3.2 Measurement of Variables

The concept of variables is based on the past studies and those adopted in this study which is made available in Table 1 as below:

Table 1 Measurement of Variable

Variables	Items	Source
Internet security	I am concerned about e-security when purchasing online. I am concerned about online fraud when I carry out transactions online. I am concerned about private information and credit card security online. I have security concerns when purchasing from a new e-retailer.	Li, Tryfonas and Li (2016)
Convenience	It is easier to compare products online. To be able to purchase commodities at any time on any day is important to me. The greater choice of commodities online is important to me. I buy commodities online because it is less time-consuming than offline.	Lodorfos, Trosterud and Whitworth (2006)
Price sensitivity	If my previous experience with an e-retailer has been good, then I will visit this site first when I want to buy within the same product category. I am prepared to pay more to purchase a commodity from an e-retailer that I trust. I will search for the cheapest e-retailer. I expect commodities online to be cheaper than offline.	Lodorfos, Trosterud and Whitworth (2006)
Product quality	The ingredient used in the products is good in quality. The products have good performance as intended. The products that are from foreign brands have higher quality. The products are secure in usage. I am fully confident about the quality of the product that I am using.	Lodorfos, Trosterud and Whitworth (2006)
Online purchasing intention	Using the internet for online shopping is easy. When I make a purchase, my friends' and family's opinions are important to me. I will have no problem in shopping online if I get to know that my friends and relatives are doing it without any problems. I would not shop online if the webpage download time is slow.	Topaloğlu (2012)

### 4. Data Analysis

Prior to testing the hypothetical representations, measurement models of each construct were inspected for reliability, validity of convergence and discrimination

validity. Table 2 shows the analysed results obtained from the survey data and using an approach proposed by Hair, Hult, Ringle and Sarstedt (2013)—it seems that every burden is greater than 0.70. The Average Variance Extracted (AVE) of all constructs is above 0.5 (Bagozzi & Yi, 1988) while the Composite Reliability (CR) score is higher than 0.7 (Hair et al., 2013). Therefore, convergent conclusions are achieved.

Table 2: Convergent Validity

Construct	Items	Loadings	Cron. Alpha	rho A	CR	AVE	VIF
OPI	A1	0.861	0.851	0.855	0.9	0.692	2.272
	A2	0.872					2.358
	A3	0.818					1.911
	A4	0.772					1.634
Internet security	B2	0.836	0.831	0.833	0.888	0.664	1.951
	B3	0.849					2.08
	B4	0.811					1.745
	B5	0.762					1.555
	C2	0.796					0.813
Product quality	C3	0.835					2.052
	C4	0.8					1.708
	C5	0.771					1.655
	D2	0.837	0.851	0.854	0.9	0.691	1.942
	D3	0.853					2.132
D4	0.812	1.834					
D5	0.824	1.962					
E2	0.8	0.802					0.804
E3	0.834		1.817				
E4	0.79		1.686				
E5	0.742		1.382				

Variation Inflation Factor (VIF) has also been tested for potential problems of multicollinearity (Table 2). A range of below 3.3 of the VIF valid for all constructs confirms sufficient construct validity by a lack of multicollinearity. This is happening because these values drop remarkably below the least threshold of nine (Yong & Pearce, 2013).

Table 3: Fornell and Lackers

	C	IS	OPI	PQ	PS
Convenience	<b>0.792</b>				
Internet security	0.534	<b>0.815</b>			
Online purchase	0.397	0.742	<b>0.832</b>		
Product quality	0.432	0.59	0.661	<b>0.801</b>	
Price sensitivity	0.479	0.637	0.588	0.551	<b>0.831</b>

Table 3 shows the outcomes for the validity test of discrimination. According to Fornell, Larcker and Cha (1994) and Fornell and Larcker (1981), for each and every development, Average Variance Extracted (AVE) should have a higher correlation between them and anything else construction model. From Table 4 it can be seen that all constructs have met these criteria, indicating there is validity of the changes in the construct. Hair et al. (2013) showed that the regular variable load of items should be greater than the cross-loading by at least 0.1 to indicate the legality of discrimination to be sufficient. Table 4 shows all

constructs to meet this criterion. Hence, we can come to a conclusion of that the validity of discrimination is achieved.

Table 4: Cross Loadings

Construct		C	IS	OPI	PQ	PS
OPI	A1	0.347	0.644	<b>0.861</b>	0.587	0.557
	A2	0.349	0.657	<b>0.872</b>	0.57	0.478
	A3	0.322	0.594	<b>0.818</b>	0.519	0.423
	A4	0.301	0.571	<b>0.772</b>	0.519	0.492
Internet security	B2	0.409	<b>0.836</b>	0.631	0.486	0.557
	B3	0.421	<b>0.849</b>	0.601	0.505	0.491
	B4	0.52	<b>0.811</b>	0.613	0.497	0.523
	B5	0.388	<b>0.762</b>	0.572	0.433	0.506
	C2	0.381	0.471	0.515	<b>0.796</b>	0.444
Product quality	C3	0.289	0.426	0.536	<b>0.835</b>	0.37
	C4	0.36	0.497	0.538	<b>0.8</b>	0.482
	C5	0.356	0.496	0.529	<b>0.771</b>	0.47
	D2	0.375	0.583	0.533	0.483	<b>0.837</b>
	D3	0.413	0.569	0.488	0.502	<b>0.853</b>
Price sensitivity	D4	0.381	0.483	0.486	0.375	<b>0.812</b>
	D5	0.429	0.475	0.439	0.473	<b>0.824</b>
	E2	<b>0.8</b>	0.439	0.282	0.343	0.45
	E3	<b>0.834</b>	0.381	0.338	0.428	0.333
	E4	<b>0.79</b>	0.505	0.302	0.297	0.413
Convenience	E5	<b>0.742</b>	0.375	0.329	0.294	0.335

Henseler, Ringle and Sarstedt (2015) also demonstrated the super performance by means of a Monte Carlo simulation study; as such, we also have tested the discriminant validity using this new suggested method and the results are shown in Table 5. Using HTMT, there are two ways to assess discriminant validity: (1) as a criterion or (2) as a statistical test. In the first type, there is a problem if the HTMT value is higher than the HTMT.85 value of 0.85 (Kline, 2015) or the HTMT.90 value of 0.90 (Gold & Malhotra, 2001).

Table 5: HTMT

	C	IS	OPI	PQ	PS	Saturated Model
Convenience						SRMR 0.065
Internet security	0.657					d_UIS 0.89
Online purchase	0.478	0.882				d_G1 0.509
Product quality	0.533	0.718	0.794			d_G2 0.425
Price sensitivity	0.587	0.754	0.686	0.662		

This study follows Henseler, Hubona and Ray (2016) to evaluate the measurement model fitness. According to the recommendations of the authors, we examined the saturated model and Standardized Root Mean Square Residual (SRMR) at a 95% bootstrap quantile. Furthermore, they recommended that the SRMR is the only approximate model fit criterion applied for PLS path modelling. In addition, the dG and dULS (Dijkstra & Henseler, 2015), which are distance measures that relate more than one way to quantify the discrepancy between two matrices, have also been accentuated to contribute to the model fitness index in PLS (Henseler et al., 2016). Table 5 shows that the dG and dULS are 0.89 and 0.509, respectively. This reflects a perfectly matched measurement model (Dijkstra & Henseler, 2015). In addition, the SRMR is 0.065, which is

lower than the cut-off of 0.08 (Hu & Bentler, 1999), implying that the measurement model fits this study.

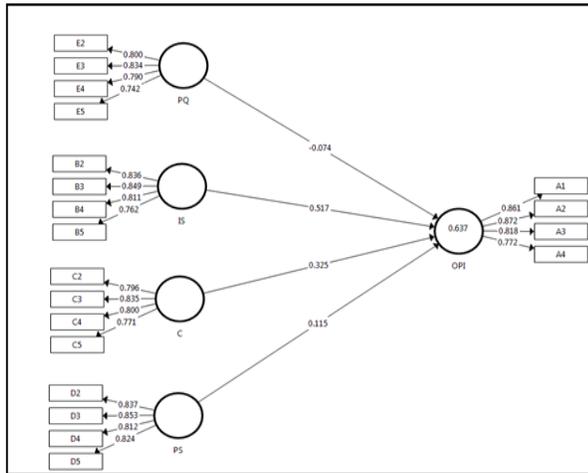


Fig. 1 Measurement Model

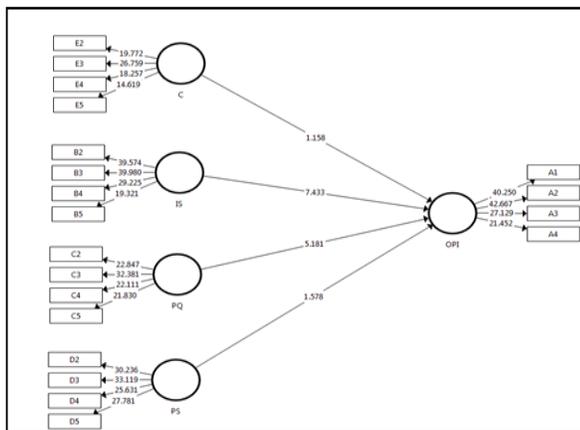


Fig. 2 Structural Equation Model

IS–internet security; C –convenience; PS–price sensitivity; PQ–product quality; OP–online purchase intention

### 5. Results and Findings

Survey data collected from 150 respondents were analysed using Smart PLS 3.2.7. To examine the statistical significance of path coefficients, Hair, Ringle and Sarstedt (2011) suggested a minimum threshold of 1.65 t-statistics values at the  $p \leq 0.1$  confidence interval. In the same way, Lowry and Gaskin (2014) claimed that effect sizes of 0.35, 0.15 and 0.02 indicate a large, medium and small effect, respectively. Sarstedt, Ringle, Smith, Reams and Hair (2014) highlighted that R2 values of 0.75, 0.50 and 0.25 reflect substantial, moderate and weak values, respectively.

R-squared is used to identify the coefficient to calculate the dependent constructs. According to Chin (1998), a strong R-squared needs 0.67, moderate needs 0.33 and a weak R-squared needs 0.19. In addition, as Hair et al. (2016) have stated, the R-squared of 0.75 is strong, 0.5 is moderate and 0.25 is weak. Next, Falk and Miller (1992) recommended that R-squared should be equal to or bigger than 0.10 in order for the variance explained of a particular endogenous construct to be deemed adequate.

To attain the specified significance levels, the consistent PLS bootstrapping option was initiated using 5,000 subsamples (Hair et al., 2014). Therefore, according to these studies, the R-squared for the researcher’s study is good enough (0.637) as deduced from Table 6.

Table 6 Hypothesis Testing

No.	Hypothesis	Beta	St. error	T-value	P-Value	LL	UL	R2	F2	Q <sup>2</sup>
1	IS->OPI	0.517	0.07	7.433	0	0.385	0.658	0.637	0.347	0.406
2	C->OPI	-0.074	0.064	1.158	0.247	-0.212	0.045		0.01	
3	PS->OPI	0.115	0.073	1.578	0.115	-0.033	0.256		0.019	
4	PQ->OPI	0.325	0.063	5.181	0	0.198	0.443		0.172	

The researchers also used F-square in order to know about the power of this model. The reason for the effect size (f2) is to help the researchers find a good model. Table 6 shows the results of hypothesis testing for Hypotheses H1–H4 and a nearly large effect size. It also contains the t-statistics value for each hypothesis. When the hypothesis is significant, the t-value is (1) more than 1.645 ( $p < 0.05$ ); (2) more than 2:33 ( $p < 0.01$ ) for a 1-tailed test; (3) more than 1.96 ( $p < 0.05$ ); or (4) more than 2:58 ( $p < 0.01$ ). From Table 6 it can be seen that two hypotheses, H1 and H4, are significant because their lower and upper limits for these hypotheses are positive values and  $p = 0.00$ . At the same time, the remaining hypotheses H2 and H3 are not supported.

### 6. Discussion and Conclusion

The findings showed two out of four hypotheses were supported. The connection between purchasing intention and online internet security showed the strongest relationship ( $\beta = 0.517, p < 0.05$ ). The high effect of purchasing intention towards online shopping behaviour was consistent with previous studies (Kanimozhi et al., 2016) where the intention was a salient predictor of actual behaviour to shop online. The second highest was between product quality and purchase intention, with positive and significant results. The results imply that that the purchasing intention of Malaysians is influenced by rational and reliable consumption as influenced by reference group. This was especially true when applied to

Malaysians that were culture-bound and averse to change (Harn et al., 2006; Jamil & Mat, 2011). Hypothesis 2 was not supported and in contrast with the findings from ZenDesk (2013), Reimers and Chao (2014) and Reimers and Clulow (2014). Hypothesis 3 was not supported and was showed to be opposite the findings from Huang and Ferreira, Vasconcelos and Proença (2016), Lee, Bonn and Cho (2015) and Cho and Desmet (2016). Malaysians' actual online purchasing tends to be more driven by other variables. This research has shown an increased explanatory power of purchasing intention and online shopping behaviour compared with previous research and provides a guideline for future research to concentrate on the strengths and terminate the weaknesses in e-commerce.

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