



# Determinants of Smartphone Repeat Purchase Intention among Malaysians: A Moderation Role of Social Influence and a Mediating Effect of Consumer Satisfaction

See Kwong Goh<sup>1\*</sup>, Nan Jiang<sup>2</sup>, Muhamad Faiz Abdul Hak<sup>3</sup>, Pei Leng Tee<sup>4</sup>

<sup>1</sup>Taylor's University, Selangor, Malaysia, <sup>2</sup>Taylor's University, Selangor, Malaysia, <sup>3</sup>Taylor's University, Selangor, Malaysia, <sup>4</sup>Taylor's University, Selangor, Malaysia. \*Email: [seekwong.goh@taylors.edu.my](mailto:seekwong.goh@taylors.edu.my)

## ABSTRACT

The purpose of this research is to examine impact of consumer inertia and product attribute (PA) on consumer intention of repeat purchase. This paper also aims to assess the medication effect of satisfaction on relation between PA and repeat purchase intention (RPI). This research intends to valid a moderator role of social influence (SI) impacting the association between consumer inertia and RPI. This quantitative study proposed a conceptual framework and collected a total of 220 samples from Malaysian consumers to assess research hypothesis and construct associated relationships and impacts among several critical variables. Both measurement model and construct model were established and evaluated using AMOS 21. Results present that PA and consumer inertia significantly influence consumer intention of repeat purchase. Satisfaction partially mediates the relationship between PA and RPI. The moderator role of SI interacts with consumer inertia to have an impact on the level of the RPI.

**Keywords:** Repeat Purchase Intention, Consumer Inertia, Product Attribute, Satisfaction, Social Influence

**JEL Classification:** M1

## 1. INTRODUCTION AND BACKGROUND

The use of mobile phone has increased tremendously in the recent years. It will not be surprising if the usage of mobile phone has surpassed the usage of landline for a typical household, including Malaysia. A mobile phone no longer just limited to receiving calls and short messaging services but a mobile phone could perform multiple tasks through connection to the internet. The demand for smartphone has rapidly surged upward as it enables the consumers to utilize its function into accessing the Internet via the gadget. Mohd Hasan (2013) has found that the amount of people purchasing smartphones in Malaysia has increased to 7.7 million in 2013. With this rapid increase, every player in the smartphone industry is trying to secure their market share by focusing on repurchase behavior as a mean to strengthen its marketing position.

Marketers around the world have invested substantial amount of capital in R and D to determine what could keep consumers loyal to a brand. Sit et al., (2009) further stated that only those

companies that use consumer-oriented approach may stand for a chance to attain customer retention and gain competitive advantage. Balakrishnan and Raj (2012) investigated mobile phone usage behaviour among urbanised youth, and stressed that the top three reasons why Malaysian consumer purchase mobile phone include brand, trend and price. However, most studies conducted are highly emphasis on brand effect or usage of mobile phone towards loyalty (Bojei and Hoo, 2012), purchase intention (Su and Huang, 2010), or consumer retention (Dimitriades, 2006). It lacks of investigations of certain perception and behavioural components affecting consumer intention of repurchase Mobile phones, such as consumer inertia, perceived social influence (SI) and perceived luxury value (LV). In addition, customer satisfaction (CA) and product attribute (PA) are always highlighted as crucial determinants in previous studies (Kuo et al. 2013; Mittal et al., 1998), thus these two factors are retained in this study.

This research paper aims to answer three main research objectives:

- i. To examine the impacts of several key determinants on repeat purchase intention (RPI) of smartphones

- ii. To investigate to what extent does satisfaction mediate the relationship between PA and RPI
- iii. To examine whether SI moderates the association between consumer inertia and RPI.

## 2. LITERATURE REVIEW

### 2.1. Repeat Purchase Intention

Repeat purchase intention happened when consumers initiated the effort to purchase the same brand, product or services again. This serves as antecedents or predictor for actual purchase behavior (Fisk et al., 2011; Jones, 1996; Kuo et al., 2013; Seiders et al., 2005). A consumer who is willing to repurchase the same brand or product is because he or she had a good experience or the expectations level were met. In fact, repeat purchase is described as the most important element to drive profitability of a firm (Reichheld and Sasser, 1990). For example, research has shown that a 5% enhancement in customer's retention could translate an increment of ones profits by 25-85%. Moreover, the cost of attaining new customers is five times higher than the cost of retaining repeat-purchase customers, which is a different aspect why retaining them is highly beneficial (Kuo et al., 2013).

In addition, repeat purchasers are profitable to organizations as they will be loyal, willing to pay premium prices, able to comprehend information easily and act as agent to promote the product or services (Zeithaml et al. 1996). These characteristics are crucial to build a sustainable brand. Zboja and Voorhees (2006) said that the term of loyalty and RPIs are similar. Further, they argued that a repeat purchase is an outcome of action loyalty. For example, in the smartphone industry, consumers who bought an iPhone will also purchase Apple related products, such as MacBook, iPad, iWatch and etc. And often customers will queue up to purchase the latest products or gadgets. Such action or behavior for companies and it is therefore crucial to study the influences of repeat purchase behavior. The likelihood of a consumer to repeat purchase a particular products depends on the interaction of the consumers need for it, their judgment towards it and opinions of it and of the product or service providers. Competition in global market is getting fierce and the cost of acquiring new customers is substantially getting higher over the period (Kuo et al., 2013), therefore most product and service providers are concerned in determining the most effective ways to retain their customers.

### 2.2. Consumer Inertia

Consumer inertia has also garnered substantial interest from researchers in the context of consumer behavior. Prior research proposed that inertia could drive consumer to repeat purchase (Huang and Yu, 1999; Liu et al., 2007; White and Yanamandram, 2007). Consumers who are inertia driven are more reluctant to switch products although alternative options by different providers are at presence (Liu et al., 2007). This type of consumer are so used to the products they have less tendency to switch brands and make their repeat purchase behavior in less deliberate manner. Without inertia, consumers would shift to other brands that could offer better PAs. Hence, consumer inertia factor is

used to examine the degree of relevance with consumer repeat purchase behavior.

The previous study conducted by Jones et al. (2007) assert that high inertia customers are more prone to stick with the same service provider rather than respond to switching costs. Like any other factors such as satisfaction and alternative attraction, inertia also could be the main driver to influence the behavior of repeat purchase. A number of scholars suggest that there are various reasons buyers could develop inertia. First, familiarity: Where the more frequent a consumer re-patronize a product, the more familiar they familiar with it (Anderson and Srinivasan, 2003; Liu et al., 2007). This is to avoid uncertainty in terms of making sure if the new product's quality is assured. Second, time saving: Where consumers do not need to spend extra time to accustom themselves with the new product and comparing it with others (Oliver, 1999). Finally, the fact that there are only minimal difference between current product and the alternatives (Tsai and Huang, 2007). Hence, the above studies indicate that inertia may increase consumer's likelihood to repeat purchase certain products from same brand.

The perspective of consumer inertia is often used to examine the study of consumer behavior. Solomon (2007) asserts that inertia factor does influence repeat purchase decision. In inertia-driven consumer's perspective, they feel sticking to the same product is less time consuming and more assured. In relation to this study, consumers that developed inertia may choose to stay with the same smartphone brand due to factors like convenience, familiarity, and loyalty to their brand. Consequently, they make repurchase decisions without contemplation since they trust the judgment of past experience. Many studies have also concluded that consumer inertia could bring high significance to purchasing decision (Anderson and Srinivasan, 2003; Liu et al., 2007; Oliver, 1999; Solomon, 2007; Tsai and Huang, 2007). Thus, this study derives the following hypothesis.

H1: Consumer inertia positively affects RPI.

### 2.3. Customer Satisfaction

One of the factors that have been identified in the previous studies is customers' satisfaction. Lee et al. (2009) proposed that a satisfied customer has higher likelihood to return to the same brand that he or she purchased. Notably, some researchers expressed that consumers that have high satisfaction will repeatedly return to the same vendors in order to gain optimal outcome (Kuo et al., 2013). On similar studies by Engel et al. (1986) proposed that satisfaction that gained through post-purchase would enhance consumers' positive attitude towards the specified product or service, therefore increase their RPI.

According to Hansemark and Albinsson (2004), there are various benefits could be gained through CA. First, customers that are satisfied are less likely to be sensitive towards price. They are also having the tendencies to buy additional products of the same brand and lastly, they are less influenced by the competitors (Zineldin, 2000). Numerous studies have theorized that CA would positively associate with RPI, both directly and indirectly through its impact

on attitude (Brady et al., 2001; Cronin et al. 2000; Johnson and Fornell, 1991; Zeithaml et al., 1996). The same model was adapted to test online shopping supporting the past studies and the result was positive in correlation (Collier and Bienstock, 2006; Lee and Lin, 2005). In addition, numerous of other studies revealed that satisfaction is a contingency factor that influence consumers' RPI (Sánchez-García et al., 2012). Therefore, this study proposes H2 as follows.

H2: Customer satisfaction positively affects their RPI.

#### 2.4. PA

Costley and Brucks (1992) have defined PAs as a set of characteristics that define one particular product. Smith and Deppa (2009) described attributes as those elements of a product that define consumer's consumption experience. An information model carried by Engel et al. (1986) has highlighted that consumers will gather valuable information and conduct evaluation before making their final purchasing decisions. Throughout this process, PAs is served as an important element to form the base of evaluation (Zhang et al., 2002). This suggestion is further supported by other previous study specifying customer's perception determines how the product will be evaluated and whether it will be bought (Tom et al., 1987). Different characteristics of the product have different importance in consumer's mind, thus affecting the significant selection criteria in the purchasing decision.

PA is recognized to be an important indicator for consumer's purchasing decisions. Anderson and Mittal (2000) proposed that PAs are the center of quality improvement and CA. It is essential to present high quality PAs, as it would highly enhance consumer's experience and therefore, lead to repeat purchase decision. Information perceived by consumers on PAs is valuable since it could be associated with new product development. They are aimed to meet customer's need and preference to the highest level and if the needs are met, it would influence consumer's satisfaction and ultimately repeat purchase behavior. Therefore, this study proposed H3 and H4 as follows:

H3: PAs positively affect their RPI.

H4: Customer satisfaction mediates the relationship between PA and RPI.

#### 2.5. LV

LV could be divided into three segments (Pitt et al., 2009). The first world emphasize on the functional value of the product intended to buy. This perspective signifies the actual goods and service quality as perceived by the consumers. The type of consumers that relates to this classification place high importance on product quality as they look upon the perspective how well the product could perform and its ultimate efficiency (Pitt et al., 2009; Sweeney and Soutar, 2001). In the context of consumer behavior, quality is perceived to be an important element in the characteristics of products and services. Hung et al. (2011) identified that functional value has the ability to enhance repeat-purchase intention. Li et al. (2012) further support this statement by highlighting that consumers have the willingness to pay a premium if the products they buy have high functional value. The second world is an empirical significance involving the perception of consumers towards

the luxury brand as people often perceived luxury items has its uniqueness and preciousness value. Moreover, it also indicates the rare factor in people's perception. It shows when buyers are willing to pay a higher price to purchase expensive paintings drawn by prominence artists, as they perceived it is worth for its uniqueness (Li et al., 2013). Finally, the third world focuses on luxury brand's symbolic value, which symbolizes wealth, prestige, status and expensiveness. According to Belk (1988), customers who buy the luxury brand with the intention to possess the symbolic value, it provides signals to others as well as the user. The value signifies to provide the view of displaying the high standard of living and status of the consumers into chosen social settings (Tsai, 2005). For example, an individual who bought the luxurious Louis Vuitton handbag may feel her status are uplifted as the brand as perceived by others symbolize wealth and lavishness.

The perceptions on consumers towards LV such as quality and reputation signifies characteristics of emotional experiential and symbolic values, which consequently become the subject attracting and interest factors relating to consumer consumption (Pitt et al., 2009). In other words, consumer who seeks high quality and high reputation products will have higher benchmark of satisfaction. Symbolize value does play a significant role in influencing consumer's satisfaction (Bian and Forsythe, 2012; Tsai, 2005). As such, this study proposed H5 as follows.

H5: LV positively influences CA.

#### 2.6. SI

SI such as empathy, relationship, recommendation, approval and politeness positively associated to the positive outcome of the purchasing behavior (Butcher et al., 2002). Based on research by Bearden et al. (1989), they assert that there are two types of customer susceptibility to SI. It shows the factors for consumers to being perceived to SI. One of which is normative susceptibility, which indicates when customers making purchase decisions based on their expectation to be impressed by others (Ang et al., 2001; Penz and Stottinger, 2005; Wang et al. 2005). For example, an individual considers recognition as high value in terms of purchasing decision-making. He or she tends to buy a certain product or services in order to impress their social surroundings. Secondly, information susceptibility as indicated by Ang et al. (2001) is customers based their purchasing decision in accordance to the information or expert opinion of others. This perspective exemplifies that customers utilize the opinion and information by others as a subject of reference to place assurance when purchasing products or services they have little knowledge about.

Generally, customers may place their friends or family as reference group before placing final decision to their purchasing event. Another aspect of social factor is word-of-mouth. According to Kuo et al. (2013) word-of-mouth preserve as more reliable medium that convey trustworthy and legit information regarding the product itself in comparison to what the advertisers or marketers portray as in their marketing effort (Bansal and Voyer, 2000; Carl, 2006). In the current world of rapid increase in technology advancement, consumers have the tendency to utilize the Internet by trading comments and sharing thoughts regarding products and services

they use between one another (Kuo et al., 2013). Majority of these comments derived from post purchase knowledge and consumers view feedbacks and reviews by those whom experienced the products and determine whether they are positive or negative. Thus, consumers use this as noteworthy reference when making purchasing decision in comparison to placing full reliance on messages portrayed by the service providers and marketers. Hence, the positive effects of word-of-mouth increases the likelihood for customers to repeat purchase a brand as there is a trust component involved (Dellarocas, 2003; Park et al., 2007; Sen and Lerman, 2007; Sun et al., 2006). According to Kuo et al. (2013, p. 173), those with high repurchase intention as a result of inertia can be deduced to have stronger RPI if they have been influence by people close to him or her. Thus, this study proposes H6:

H6: SI moderates the relationship between consumer inertia and RPI.

Based on the above hypotheses, this study develops a conceptual framework (Figure 1).

### 3. METHODOLOGY

#### 3.1. Measurement and Data Collection

This quantitative study gathered empirical data using a self-designed questionnaire among 400 Malaysian consumers within a period of 2 months. A total of 267 surveys were returned with 220 valid questionnaires (response rate, 55%). Data analysis is conducted by using structural equation modeling (SEM AMOS 21), and guided by two-step analysis approach (Anderson and Gerbing, 1988). A 7-point Likert scale was adopted to measure a total of six constructs from “strongly disagree (1)” to “strongly agree (7).” A full questionnaire is presented in Appendix 1. Researchers first evaluate the measurement model before assessing the structural model as “it makes little sense to relate construct within an SEM model if the factors specified as part of the model are not worthy of further attention” (Thompson, 2004, p.110). The univariate normality is achieved in this study as kurtosis of each item is between -0.809 and 4.499 within acceptable range

(-7 and 7); skewness of each item is between -0.223 and -1.461 within the acceptable range (-2 and 2) as well (Curran et al. 1996; Muthen and Kaplan, 1992; Pallant, 2011). Multivariate critical ratio is 27.18, which indicates a slight violation of multivariate normality (MVN). However ML estimation is still robust with mild departures from multivariate normality (MVN) (Fan and Wang, 1998; Hu et al. 1992), thus research result of this study should be reliable with maximum likelihood (ML).

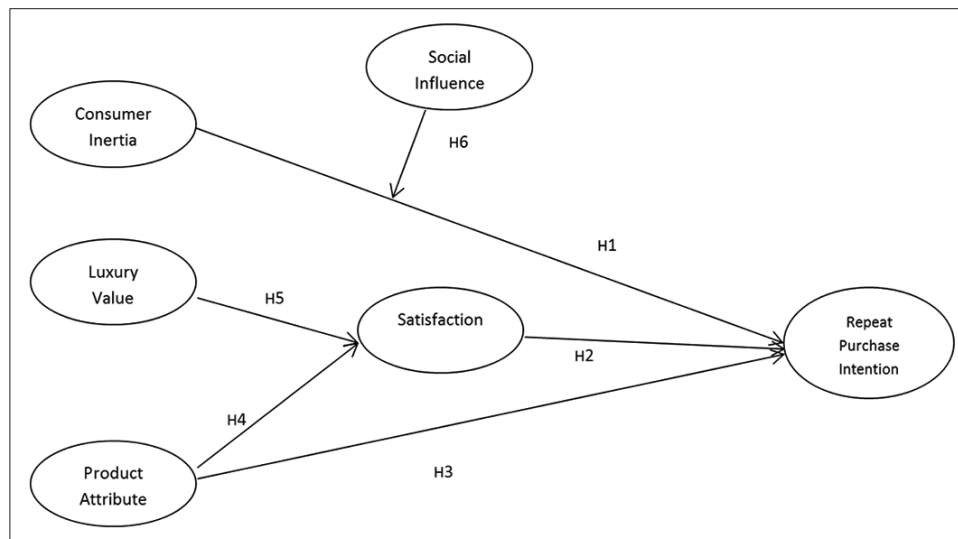
#### 3.2. Exploratory Factor Analysis (EFA): Unidiemsionality Analysis

EFA is a useful technique for reducing a large set of indicators into a more manageable subset. A typical use of EFA in the development of scales is to factor an overall set of items and then construct scales based on the result of factor loadings (Segars, 1997, p. 10). Researchers adopt EFA due to the two following reasons. The first reason is to refine and develop suitable scale (questionnaire) to precisely measure each construct. Thus, items which load lower than 0.6 was eliminated. The next reason of adopting EFA is to assess unidimensionality of each construct, in which a set of indicators share only a single underlying factor. Unidiemsnitonality rigorously address the measurement properties of new and well-established scales (Segars, 1997). Such properties reveal the accuracy (validity) and consistency (reliability) of construct measurement. Poor measurement properties may lead to erroneous conclusions regarding the existence, magnitude and director of association between constructs. Therefore, items whose cross loading higher than 0.4 were eliminated. The finalized items and related factor loadings are presented in Table 1. There is no violation of unidiemsional measurement of each construct in this study.

#### 3.3. Confirmatory Factor Analysis (CFA): Convergent and Discriminant Validities

As shown in Table 1, each construct is measured by multiple indicators. Although EFA can confirm that each indicator measures only a single construct, only CFA is able to provide more accurate assessment of unidimensionality and directly provide quantifiable evidence regarding the external and internal consistency among a

Figure 1: Conceptual framework (construct model)



set of construct indicators (Anderson and Gerbing, 1982; Segars, 1997). The aforementioned internal consistency is reflected by convergent validity (composite reliability and average variance extract); and the external consistency is reflected by discriminant validity. Since the social and behavioral sciences have learnt much more from CFA than from SEM (Kenny et al., 2006), this research adopted Anderson and Gerbing's (1988) two-step approach to conduct CFA and further confirm unidimensionality through convergent and discriminant validity tests.

According to Anderson and Gerbing (1988), two-step approach, a CFA is conducted first in order to establish confidence in the

**Table 1: EFA and unidimensionality**

Rotated component matrix <sup>a</sup>	Component					
	1	2	3	4	5	6
RPI4	0.837					
RPI6	0.815					
RPI5	0.811					
RPI3	0.796					
LV4		0.878				
LV3		0.858				
LV2		0.828				
LV7		0.786				
CS2			0.862			
CS1			0.834			
CS5			0.748			
SI4				0.861		
SI5				0.791		
SI3				0.790		
CI3					0.852	
CI2					0.840	
CI5					0.645	
PA3						0.854
PA5						0.726
PA2						0.675

Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser Normalization. \*Rotation converged in 6 iterations. EFA: Exploratory factor analysis

**Table 2: CFA and convergent validity (n=220)**

Items		UNSTD	SE	T-value	P	Label	STD	SMC	1-SMC	CR	AVE	
LV2	←	LV	1.000				0.820	0.672	0.328	0.882	0.653	
LV4	←	LV	1.031	0.074	13.942	***	par_1	0.850	0.723	0.278		
LV3	←	LV	1.037	0.078	13.305	***	par_2	0.816	0.666	0.334		
LV7	←	LV	0.932	0.079	11.783	***	par_10	0.741	0.549	0.451		
CI2	←	CI	1.000				0.762	0.581	0.419	0.798	0.569	
CI5	←	CI	0.832	0.089	9.302	***	par_3	0.697	0.486	0.514		
CI3	←	CI	1.166	0.115	10.135	***	par_4	0.800	0.640	0.360		
PA5	←	PA	1.000				0.662	0.438	0.562	0.789	0.559	
PA3	←	PA	1.594	0.169	9.445	***	par_5	0.874	0.764	0.236		
PA2	←	PA	1.283	0.150	8.557	***	par_6	0.689	0.475	0.525		
RPI3	←	RPI	1.000				0.769	0.591	0.409	0.910	0.717	
RPI4	←	RPI	1.047	0.076	13.753	***	par_7	0.867	0.752	0.248		
RPI5	←	RPI	0.962	0.070	13.668	***	par_8	0.862	0.743	0.257		
RPI6	←	RPI	0.980	0.070	14.053	***	par_9	0.883	0.780	0.220		
CS5	←	CS	1.000				0.726	0.527	0.473	0.859	0.672	
CS2	←	CS	1.204	0.101	11.885	***	par_11	0.879	0.773	0.227		
CS1	←	CS	1.288	0.110	11.681	***	par_12	0.847	0.717	0.283		
SI5	←	SI	1.000				0.737	0.543	0.457	0.846	0.652	
SI4	←	SI	1.390	0.116	11.993	***	par_13	0.957	0.916	0.084		
SI3	←	SI	1.126	0.108	10.406	***	par_14	0.704	0.496	0.504		

\*\*\*P<0.05. CFA: Confirmatory factor analysis

measurement model, which specifies the posited relation of the observed variables to the underlying constructs. One of the primary objectives of CFA/SEM is to assess the extent to which a set of measured items actually reflects the theoretical latent construct (Hair, 2010). Thus, this research assesses the adequacy of each multi-item scale in capturing constructs validity in measurement models (Table 2).

The standardized loading estimates of all items are significant (P < 0.001) and higher than 0.6 (Anderson and Gerbin, 1988; Hair, 2010). The average variance extracted (AVE) estimates are between 0.559 and 0.717 (above 0.5) (Bagozzi and Yi, 1988; Ping, 2004) and construct reliability of each construct is between 0.789 and 0.910 (above 0.7) (Fornell and Larcker, 1981), which reveals that the convergent validity was achieved.

Discriminant validity assesses the extent to which a construct is truly distinct from other constructs (Hair, 2010). Although the correlation (Pearson's R) among constructs can be used to detect the issue of multicollinearity, there is no firm rule that a correlation with other measurements below absolute 0.85 is a cut point. With Anderson and Gerbin's first step approach (1988), the correlations among six latent variables (Customer inertia [CI], LV, PA, CA, SI, and RPI) are between 0.188 and 0.581. The AVE square root of each variable is larger than any correlation between that particular variable and any other variables, which reveals that the discriminant validity was achieved and Type II error rate was quite low. There is no issue of multicollinearity among constructs in this study. In addition to EFA (Table 1), unidimensionality was further confirmed through CFA (Table 3).

**3.4. Common Method Variance (CMV) and Harman's Single-Factor Test**

CMV is also called common variance bias that is a subset of method bias (Burton-Jones, 2009). It could inflate relationships between variables especially measured by self-reports. It normally

arises from having a common rater, a common measurement context, a common item context, or from the characteristics of the items themselves (Podsakoff et al., 2003. p. 885). In order to minimize the potential impact of common method variance on research findings, this project adopts the technique of Harman’s single-factor (Chang et al., 2010) examine the un-rotated factor solution to determine the number of factors that are necessary to account for the variance in all variables. The purpose of Harman’s single factor method is to identify the amount of reliable error variance that is correlated between items (Ylitalo, 2009), thus this research adopts the method of principal axis factoring. As presented in Table 4, the first factor explains a total of 31.67% of the variance, which is less than half of the variance. Therefore, common method variance does not exist in this study.

### 3.5. Analysis Result and Discussion

Following the proposed measurement model, an empirical structural equation model is established in order to test the

hypothesized construct model. The construct model includes three exogenous latent variables (CI, LV and PA) and two endogenous variables (CA and RPI). The goodness-of-fit indices of this model are within an acceptable range (Chi-square = 212.192,  $df = 111$ ,  $P < 0.001$ , Chi-square/ $df = 1.912$ , goodness of fit index (GFI) = 0.902, adjusted GFI = 0.865, root mean square error of approximation = 0.065, Tucker-Lewis fit index (TLI) = 0.939, incremental fit index = 0.951, comparative fit index (CFI) = 0.951, normed fit index = 0.903). As a result, there is no negative error variance of variables or “Heywood case” (Kolenikov and Bollen, 2012; Rindskopf, 1984). The standard errors of variance are relatively small between 0.050 and 0.1574.

Research results indicate that all hypotheses tests are statistically significant among latent variables in structural model and also consistent with the proposed direction (Table 5). All the path coefficients from PA to consumer satisfaction (H4,  $P < 0.001$ ) and RPI (H3,  $P = 0.005$ ) are significant. The parameter estimates for the relationship of RPI with CI (H1,  $P = 0.003$ ) and consumer satisfaction (H2,  $P < 0.001$ ) are also statistical significant and consistent with the proposed hypotheses. Comparing the effect of both exogenous latent variables: CI (H1) and PA (H3), PA (coefficient = 0.375,  $t = 2.837$ ,  $P = 0.005$ ) has larger impact on RPI than impact of consumer inertia does (coefficient = 0.270,  $t = 2.992$ ,  $P = 0.003$ ). When PA goes up by 1 unit, RPI goes up by 0.375 units, while when consumer inertia goes up by 1 unit, RPI just goes up by 0.270 unit.

**Table 3: Discriminant validity**

Construct	SI	CS	RPI	PA	CI	LV
SI	0.807					
CS	0.378	0.820				
RPI	0.374	0.581	0.847			
PA	0.478	0.348	0.522	0.748		
CI	0.407	0.292	0.502	0.558	0.754	
LV	0.289	0.321	0.303	0.287	0.188	0.808

**Table 4: Harman’s single-factor analysis**

Total variance explained						
Factor	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	6.980	34.899	34.899	6.335	31.673	31.673
2	2.436	12.180	47.078			
3	1.948	9.740	56.818			
4	1.616	8.081	64.900			
5	1.168	5.841	70.741			
6	1.027	5.136	75.877			
7	0.668	3.342	79.219			
8	0.546	2.732	81.951			
9	0.514	2.569	84.520			
10	0.444	2.218	86.738			
11	0.387	1.934	88.672			
12	0.364	1.821	90.493			
13	0.330	1.652	92.145			
14	0.305	1.527	93.672			
15	0.249	1.244	94.916			
16	0.232	1.160	96.076			
17	0.229	1.145	97.221			
18	0.202	1.012	98.233			
19	0.185	0.927	99.160			
20	0.168	0.840	100.000			

Extraction method: Principal axis factoring

**Table 5: Structural regression weight (n=220)**

Variable		UNSTD	SE	T-value	P	Label	STD	SMC	Hypotheses
CS	← LV	0.153	0.050	3.094	0.002	par_19	0.241	0.182	H5 supported
CS	← PA	0.266	0.077	3.458	***	par_20	0.288		H4 supported
RPI	← CS	0.716	0.122	5.868	***	par_11	0.433	0.494	H2 supported
RPI	← PA	0.375	0.132	2.837	0.005	par_12	0.246		H3 supported
RPI	← CI	0.270	0.090	2.992	0.003	par_13	0.244		H1 supported

### 3.6. Effect Size and Predictive Power

This study evaluates the effect size of the predictor construct using Cohen's  $f^2$  (Cohen, 1988). The effect size is computed as the increase in  $R^2$  relative to the proportion of variance that remains unexplained in the endogenous latent variable (Peng and Lai, 2012, p. 473). To evaluate the effect size, the researchers examine the explained variance ( $R^2$ ) of the endogenous constructs: CA and RPI. Cohen (1988) and Chin (1998) suggest that  $R^2$  values of 0.67, 0.33, and 0.19 are substantial, moderate, and weak respectively. As shown in Table 5, the exogenous variables of PA and LV can explain 18.2% of the variation in CA (endogenous construct), which do not appear to be very strong. For RPI, this construct model can explain 49.4% of the variation with PA, CA, and consumer inertia, indicating moderate predictive relevance. Because RPI has more than one exogenous variables: Consumer inertia and PA, the relative effect size ( $f^2$ ) of the exogenous constructs are calculated using the equation  $f^2 = (R^2 \text{ included} - R^2 \text{ excluded}) / (1 - R^2 \text{ excluded})$  (Peng and Lai, 2012, p. 475). The  $f^2$  of consumer inertia and PA are 0.0593 and 0.1206. According to Cohen (1988),  $f^2$  value of 0.35, 0.15, and 0.02 are considered large, medium, and small respectively. Thus, the  $f^2$  of consumer inertia (0.0593) is considered small, while the  $f^2$  of PA (0.1206) is considered as medium. The small effect size of exogenous variable is used to compute the predictive power of the constructed model. This study uses G-power, *post-hoc*: Compute achieved power (effect size  $f^2 = 0.0593$ ,  $\sigma = 0.05$ ,  $n = 220$ , number of predictors = 3) to compute the predictive power of the constructed model, indicating power ( $1 - \beta$  error prob) = 0.8654 (above 0.8) (MacCallum et al., 2012). Therefore, it is safe to state that research findings are able to generate strong prediction of RPI; and the construct model is reliable and valid.

### 3.7. Mediation Analysis

Results of this research also present that partial influence of PA on RPI is distributed through CA (mediator) as both H2 (coefficient = 0.716,  $P < 0.001$ ) and H4 (coefficient = 0.266,  $P < 0.001$ ) are statistically significant (Table 5). Based on Baron and Kenny's (1986) causal steps approach, the intervening variable effect (CA) exists between PA and RPI. However, Baron and Kenny's causal steps approach is among the lowest in power (Fritz and MacKinnon, 2007; MacKinnon et al., 2002). It is not based on a quantification to test the mediation effect. Although Sobel test (Sobel, 1982, 1986) can overcome the above weakness and is often used as a supplement to Baron and Kenny's approach, Sobel test assumes the normality of sampling distribution of indirect effect is met. Actually, it is less possible to get a normal distributed indirect effect sampling distribution (Bollen and Stine, 1990; Stone and Sobel, 1990). Bootstrap uses computer intensive resampling to make inferences rather than making assumptions about the population (Lockwood and MacKinnon, 1998). The standard error based on the bootstrap distribution of the mediation effect can be reduced. Therefore, bootstrap (5000 samples with 95% confident interval) is adopted in this research to test the intervening effect of consumer satisfaction between PA and RPI Table 6).

The indirect (mediated) effect of CA on RPI is 0.190 ( $t = 2.603$ ,  $P < 0.01$ ). Both bias-corrected 95% confidence interval (CI) and percentile 95% CI do not include zero, which indicate the

intervening effect of CA between PA and RPI is significantly different from zero; so do the total effect (0.566,  $t = 2.948$ ,  $P < 0.01$ ) and direct effect (0.375,  $t = 2.107$ ,  $P < 0.05$ ). Both total effect and direct effect are statistically significant. It implies that there is a partial mediation effect exists, which occupies 33.57% of total effect. Customer satisfaction partially intervenes the relation between PA and RPI.

### 3.8. Moderation Analysis

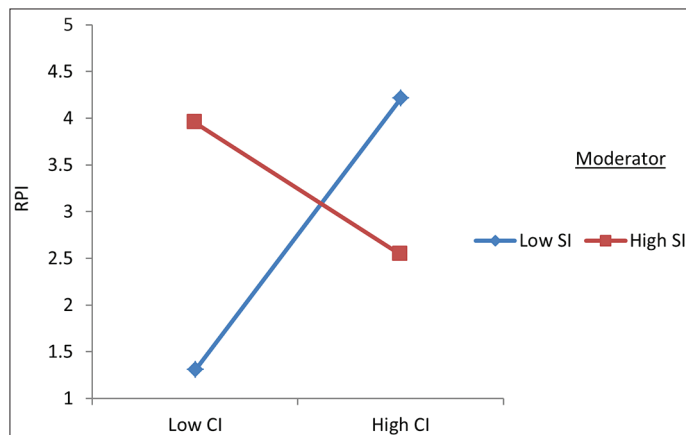
A moderator specified the conditions under which a given effect occurs, as well as the condition under which the direction (nature) or strength of an effect vary (Baron and Kenny, 1986, p. 1174). In this study, the hypothesis (H6, one-tailed) assumes that SI can be presented as an interaction between consumer inertia and the SI (moderator) that specified certain condition for its operation. As a quantitative variable, SI is measured by a total of three items with a 7-likert scale. Based on the median of sum of SI (median = 15), researchers categorized this variable (moderator) into two groups: Group of perceived high SI ( $n = 120$ ) and group of perceived low SI ( $n = 100$ ). H6 emphasizes on the moderator impact on the relation between consumer inertia and RPI. The researchers expect that the moderator interacts with the consumer inertia in such a way as to have an impact on the level of the RPI: The relation between consumer inertia and RPI will be stronger when perceived SI is low (one-tailed hypothesis). In other words, a weaker association between consumer inertia and RPI is expected when perceived SI is high.

As presented in Table 7, SI does have an impact on the relation between consumer inertia and RPI ( $P = 0.019$ , H6 supported). The Pearson's R (0.429) in low SI group is much higher than the Pearson's R (-0.016) in high SI group. With the moderation effect of SI, not only the strength level varies, but also the direction is different as well (Figure 2: Moderation plot). R-square increase 0.010 ( $P = 0.042$ ) due to interaction is statistically significant ( $P < 0.05$ ).

### 3.9. Cross-validation

As the last procedure of data analysis, cross-validation is employed to examine the predictive validity of model. Its objective is to identify the model from a set of competing alternative that replicates best across different population. A random sample

Figure 2: Moderation plot



can be assumed by splitting the data samples randomly into two subsamples (50:50): Calibration sample and validation sample (Cudeck and Browne, 1983). The former is used to develop the model, while the latter is used to test the derived model. Cross-validation examines the stability and generalizability of proposed model, and also enhances research validity and generalizability of findings. As presented in Table 8, this research has a good model stability ( $\Delta TLI < 0.01$ ,  $\Delta CFI < 0.05$ ,  $P > 0.05$ ). It indicates that the prediction validity of this model can be generalized to other distribution samples.

#### 4. CONCLUSION AND IMPLICATION

This research aims to examine key determinants that attribute consumer intention of repeat purchase. Researchers investigate various associations and hypotheses, and confirm the effect, direction or strength of each path. A conceptual model was established to predict consumer RPI. Customer satisfaction partially mediates the relation between PA and RPI. SI moderates the effect of consumer inertia towards RPI, indicating that the direction and strength of associated relation vary between groups of high perceived SI and low perceived SI respectively. The strength of relation between consumer inertia and RPI is greater when perceived SI is low; whereas a weaker relation occurs when the perceived SI is high.

Several theoretical and practical implications are provided based on research findings. Firstly, the theoretical implication

demonstrates that the structural model with an acceptable model fit and all the proposed hypotheses are supported (H1-H6). Approximately 49.40% variance of RPI can be explained by independent predictors. The confirmed measurement model and examined reliability and validity indicators attest that the proposed instrument validly and reliably measure the constructs in this model. Acceptable discriminant validity proves that the constructs are truly distinct from each other. The cross-validation further examines satiability and predictive validity of the construct model, thus enhances the generalizability and managerial implications in practice.

Next, research results confirm that there is a partial influence effect between PA and RPI, thus CA is not a “standalone” concept, but should be understood as a mediator. The estimate of indirect effect is 0.190 ( $P < 0.01$ , Table 6), occupying 33.57% of total effect from PA to RPI. While, the estimate of direct effect is 0.375 ( $P < 0.05$ ) employing 66.25% of total effect. Compared with indirect effect, the direct effect has greater impact on RPI, thus PA is considered as a primary prediction index. Repeat purchase intention mainly stems from objective entities of the smartphone, rather than consumer satisfaction (subjective perception). This finding is distinct from previous literatures stating that consumers normally have high intention to repurchase products with satisfied product features and pleased post-purchase experience. In this study, CA partially corroborates with previous studies (Kuo et al., 2013; Ranaweera and Prabhu, 2003; Seiders et al., 2005), but confirmed that the main drive was PA. Therefore, smartphone

**Table 6: Bootstrap mediation effect**

Dependent variable	Estimate	Product of coefficients		Bias-corrected 95% CI			Percentile 95% CI		
		SE	T-value	Lower	Upper	P (2-tailed)	Lower	Upper	P (2-tailed)
RPI ← PA	0.566	0.192	2.948	0.225	0.986	0.003	0.201	0.961	0.004
			Total effect						
RPI ← PA	0.190	0.073	2.603	0.078	0.370	0.001	0.068	0.348	0.001
			Indirect effect						
RPI ← PA	0.375	0.178	2.107	0.052	0.765	0.028	0.034	0.747	0.035
			Direct effect						

CI: Confidence interval

**Table 7: Moderation analysis**

Model	DF	CMIN	P	NFI	IFI	RFI	TLI
				Delta-1	Delta-2	rho-1	rho2
Moderator model	1	5.508	0.019	0.003	0.003	0.002	0.003
			UNSTD	SE	T-value	P	Label
RPI	←	CI	0.429	0.118	3.623	***	SI_Low
RPI	←	CI	-0.016	0.134	-0.118	0.906	SI_High
	R <sup>2</sup> change	F	df1	df2	P (two-tailed)		P (1 tailed)
Int_1	0.01	3.019	1	216	0.084		0.042

NFI: Normed fit index, IFI: Incremental fit index, CI: Confidence interval

**Table 8: Cross-validation**

Model	NPAR	CMIN	DF	ΔDF	ΔCMIN	P	ΔTLI	ΔCFI
Unconstrained	84	346.899	222					
Measurement weights	72	363.158	234	12	16.259	0.180	-0.001	-0.002
Structural weights	67	366.725	239	5	3.567	0.613	-0.002	0.001
Structural covariances	61	371.013	245	6	4.288	0.638	-0.003	0.001
Structural residuals	59	380.759	247	2	9.746	0.008	0.004	-0.004
Measurement residuals	42	401.34	264	17	20.581	0.246	-0.003	-0.002



manufacturers should focus more on product innovation, and allocate more efforts and resource to R and D, aiming to retain consumers. In addition, repeat purchase does not only mean to repurchase the same products, but also imply repeat purchase new/updated model from same organizations or brands. Although consumer inertia influences consumer intention of repeat purchase (estimate = 0.270,  $t = 2.837$ ,  $P = 0.003$ ), there is not much room left for marketer to address consumer inertia as inertia is primarily a kind of personal attitude or subjective manner, which may not be directly addressed by external forces.

Thirdly, consumer inertia positively influences RPI. This tendency properly attributes to consumer perception of least efforts required for consumption. For example, an Apple fan may always prefers new models of iPhone instead of other competing products (e.g. Samsung, HTC, and Blackberry) as less effort and time are expected from clients to get familiar with the feature of new device. This implies that manufacturers may emphasis on product characteristics and shorten the effort required for consumers to familiarize themselves with new smartphone. In addition, physiological techniques and communication initiatives may also help to retain consumers through interactions and emotional connection between consumers and products.

Lastly, SI moderates the relationship between consumer inertia and RPI. Certain group of consumers may be more easily affected by social environment (e.g., word of mouth, reviewer comments, media remarks or advertisement) compared to other group of consumers who perceived less affected by social environment. Consumers perceived low SI are with high intention of repeat purchase; while consumers perceived high SI may prefer different alternatives. SI affects frequent consumers whose RPI is primarily built on their own inertias. Consumers may feel confident and intend to re-purchase when they heard positive comments of particular products from others, and vice versa. In order to limit the bias of social impact, marketers should provide consumers with transparent channels and consistent information or reliable feedback of their products and service.

## 5. LIMITATION AND FURTHER RESEARCH

Firstly, researchers only explored subsets of factors involved, which were accounted for 49.40% variance of repeat purchase. Other predictors, such as brand loyalty (He and Mukherjee, 2007; Kressmann et al., 2006), self-congruence (Sirgy and Su, 2000; Todd, 2001); and attitudes (Ibrahim and Najjar, 2008) may also have impacts on consumer intention of repeat purchase.

Next, the scope of this research was in Malaysia and the respondents were majority Malaysian. Thus, caution might be advised when generalizing the research finding to different countries or regions. Although research finding pass the test of cross-validation, there is still lack of evidence that similar research results can be discerned in other contexts or different industries, such as service or manufacturing sectors. Therefore, further research aims to generalize the conceptual model and compare the results in relatively broader scopes. Finally, the speed of change in the study context as consumers' increasing experience

or expectation and various personalities may certainly affect their decision making and purchase intention.

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## APPENDIX

### Appendix Tables

#### Appendix 1: Questionnaire and factor loadings

Questionnaires	Items	EFA factor loading
Repeat purchase intention	RPI	
I will not consider other brand besides X smartphone	PRI4	0.837
When I think about Smartphone brand, X comes into my mind first	RPI6	0.815
If I had to do it all over again, I will still choose X brand	RPI5	0.811
X smartphone is my first choice for Smartphone brand	RPI3	0.796
Luxury value	LV	
I chose X smartphone because it gives me status/reputation	LV4	0.878
I chose X smartphone because I feel unique owning it	LV3	0.858
I chose X smartphone because I feel exclusive owning it	LV2	0.828
I chose X smartphone because it gives me character	LV7	0.786
Customer Satisfaction	CS	
I chose X smartphone because it has exceptionally good functions	CS2	0.862
I chose X smartphone because it offers cool features	CS1	0.834
I chose X smartphone brand because it has good quality	CS5	0.748
Social Influence	SI	
I chose X smartphone because it is highly recognized	SI4	0.861
I chose X smartphone because it has good reviews	SI5	0.791
I chose X smartphone because it is the current trend	SI3	0.790
Consumer Inertia	CI	
I chose X smartphone because I don't want to waste time learning about the functionality of other brands	CI3	0.852
I chose X smartphone because I am only familiar with the brand	CI2	0.840
I chose X smartphone because it is time saving for me	CI5	0.645
Product attributes	PA	
I chose X smartphone because the brand offers different line of other products e.g., Laptop, Tablet, Camera, Music Player	PA3	0.854
I chose X because it provides excellent customer service experience	PA5	0.726
I chose X smartphone because the brand constantly update its model e.g., iPhone 3, 3 gs, 4 s, etc.	PA2	0.675

EFA: Exploratory factor analysis

#### Appendix 2: Covariance matrix

Rowtype_	Varname_	CS5	LV7	RPI6	RPI5	RPI4	RPI3	PA2	PA3	PA5	CI2	CI3	CI5	CS1	CS2	LV2	LV3	LV4
cov	CS5	1.085																
cov	LV7	0.286	2.241															
cov	RPI6	0.654	0.536	1.944														
cov	RPI5	0.678	0.482	1.521	1.964													
cov	RPI4	0.644	0.585	1.583	1.591	2.304												
cov	RPI3	0.665	0.613	1.534	1.429	1.755	2.667											
cov	PA2	0.359	0.765	0.712	0.753	0.953	0.893	2.309										
cov	PA3	0.339	0.531	0.688	0.664	0.835	0.841	1.392	2.221									
cov	PA5	0.358	0.408	0.602	0.700	0.820	0.742	0.679	1.100	1.521								
cov	CI2	0.170	0.269	0.618	0.656	0.732	0.690	0.754	0.718	0.358	2.251							
cov	CI3	0.084	0.349	0.688	0.648	0.796	0.933	0.647	0.967	0.557	1.621	2.779						
cov	CI5	0.393	0.401	0.755	0.825	0.841	0.717	0.790	0.841	0.522	0.996	1.235	1.860					
cov	CS1	0.711	0.385	0.767	0.673	0.643	0.599	0.449	0.447	0.289	0.445	0.244	0.476	1.322				
cov	CS2	0.688	0.329	0.679	0.630	0.588	0.609	0.324	0.312	0.364	0.335	0.171	0.422	0.898	1.073			
cov	LV2	0.353	1.297	0.480	0.461	0.495	0.421	0.626	0.356	0.407	0.288	0.371	0.425	0.492	0.420	2.107		
cov	LV3	0.378	1.260	0.402	0.257	0.396	0.313	0.536	0.185	0.323	0.132	0.235	0.136	0.406	0.432	1.533	2.285	
cov	LV4	0.180	1.447	0.461	0.413	0.564	0.444	0.585	0.312	0.336	0.133	0.237	0.278	0.237	0.250	1.403	1.530	2.081
N		220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220