EXAMINING PRODUCT FACTORS AFFECTING THE SATISFACTION OF SMARTPHONE CONSUMERS

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Abstract

The smartphone is a fast-growing product in the modern day of electronic industry and has been considered one of the most important devices for most of the consumers due to its diversity of use. The purpose of this study is to identify the factors that affect the satisfaction of consumer after purchasing the product. This study employs a quantitative method by surveying 382 respondents among the Generation Y in the Northern region of Malaysia. The results of this study indicates that product judgment, product feature, and brand image are correlated significantly with consumer satisfaction. Meanwhile, the most influential element of consumer satisfaction is product judgment.

Keywords: Smartphone Industry, Generation Y, Product Judgment, Product Feature, Brand Image, Consumer Satisfaction

Introduction

Modern smartphone consumers have directed the attention of manufacturers to promote similar electronic devices into the market as a way to cope with the market trend as consumers are gradually switching from conventional mobile phones to the most advanced phones equipped with sophisticated software. This study is conducted with the aim to help local smartphone producers targeting Malaysian consumers by looking from the consumers' perspectives towards the offered products in order to stay competitive in this industry. The main purpose of this study is to gain a better understanding of the factors affecting consumer satisfaction and the current dynamics of the Malaysia market concerning smartphones, from the perspective of end consumers based on the Theory of Planned Behavior (TPB). The focus on smartphones product and other comparable products is gaining widespread interest from the public and those involved or affected by it for the past few years due to increasing popularity of smartphone usage throughout the country. In fact, the smartphone has now become an integral part of the daily lives of many people (Lee et al., 2014). Since the smartphone inception, communication across regions and

countries are crucially connected by it and the surrounding technology. Humans have been relying heavily on the use of smartphones for daily activities from personal purposes to business matters. The smartphone has replaced the conventional telephone functions with several added benefits that made lives easier and more enjoyable. For example, Short Message Services (SMS) and Multimedia Messaging Service (MMS) are basic means found in smartphones. Both SMS and MMS gradually taking over the standard means of communication due to its lower cost and ease of use with the presence of other advanced programs such as Skype and various software applications to improve the reliability and accessibility of communication for humans.

SMS trends might have been considered as one of the most effective ways of communication until the new era of smartphone takes place since it went on sale in Britain for the first time on November 9, 2007 (Richmond, 2012). Since then, the smartphone has changed the way people run their lives. In Malaysia, the advent of smartphone boosts the country's internet usage by 51 percent in 2013 (*The Malaysian Insider, 2014*), which recorded the highest increase ever since a decade ago. This statistic was published by The Malaysian Internet Exhange (MyIX) for the internet traffic consumption. The figure shows a total amount of 349,277 mbps in 2013 as compared to 230,631 mbps in 2012. These drastic changes are believed to be co-related with several synergistic trends amongst internet users in Malaysia, such as the spike in the number of smartphone users. Through this gadget, users get instant access to social networking sites and applications such as Facebook, Twitter, and Instagram. Other than these applications, WhatsApp, WeChat, Viber, Line, Bee Talk and some other data messaging applications help to contribute to the increase of internet usage in Malaysia. As of May 2013, there is about 45.5 percent of the total Malaysian population, or some 13.3 million are Facebook users. This puts Malaysia at the 8th spot in Asia and the 21st place in the world (Mahadi, 2013) in terms of the number of Facebook users. This prominent social networking site has managed to attract Malaysians aged from 18 to 24 to be the highest group users, contributing about 34.5 percent of users, while those aged from 25 to 34 years counted for 29.5 percent (Mahadi, 2013).

When it comes to the smartphone business, it is common to see giant companies like Samsung, Apple, Sony, BlackBerry and Nokia from various countries ranging from Korea, United States, Japan, Canada and Finland (Mobile Go Smart,

2014) to get involved in this lucrative industry. Not limited to those strong players who have been fiercely competing with dozens of new products introduction, plenty more startups and newcomers that operate mainly in Mainland China are becoming strong contenders in the smartphone market. Oppo, OnePlus, Coolpad, Xiaomi, Huawei Technologies, Lenovo, and ZTE are among those brands that are starting to gain popularity since 2013 as compared to the previous year (China Daily, 2014).

This study is focusing on the global business trend regarding specific products available in the market across the nation. With the recent advancing development in the telecommunication industry, the entrance of new smartphone makers is intensifying the competition in the smartphone industry. To ensure a sustainable profit and business, consumer retention is an important aspect for the survival of each player in the industry. The local smartphone producers, especially in Malaysia, are having problems to position their products and brand in the consumers' mind. The local smartphone brands are considered new in this industry compared to the established foreign brands. Unlike the mobile phone era where phones come with various design and functionality, smartphone products nowadays are almost similar in many product features, such as shape, wider square screen, equipped and running on almost similar operating system. The functionality offered by each smartphone is also similar, which is for browsing the internet, connecting with friends and relatives over social media applications, taking photos and videos, games, and many other functions which eventually are quite identical for smartphones that are produced by different producers. One of the problems faced by the manufacturers is to understand the factors that influence the consumers and the features that consumers look for when purchasing a particular product while considering the elements that can satisfy the consumers when using and owning the product.

Literature Review

Advancement in technology and engineering products have prompted producers to expand their production capacity while increasing the products' variety capture the market better. Trends toward smartphone usage are increasing since the devices are multipurpose and equipped with camera, radio, voice recorder, games, calculator, maps, clock, video and music player, notes, internet browser, social media applications and plenty more, which are of tremendous convenience to users. These new generations of mobile devices have gained popularity in global society

since 2007 when it reached from 122.32 million to 1,244.89 million users in 2014 (Statista, 2015). Since smartphone comes with preference languages to fit each specific country, it is made possible for consumers in various countries to acquire and use the devices at ease.

Malaysia consists of 28.3 million of residents in the year of 2010, with 10 million increases of residents since 1991 (Department of Statistics Malaysia, 2015). This indicates an average annual growth rate of 2.0 percent from 2000 to 2010 period and is considered lower compared to that of 2.6 percent from 1991 to 2010. Putrajaya and Selangor are on top of the list while Perlis, W.P. Labuan, Perak and Terengganu are the lowest with 1.2, 1.3, 1.4 and 1.4 percent respectively. Three states with the most populous states are Selangor, Johor and Sabah with a total share of 42.4 percent of total Malaysia population.

Consumer Satisfaction

Consumer satisfaction can be defined as a feeling a purchaser experienced after the service used fulfilled an individual's expectation (Kotler et. al. 2000). In a service sector, consumer expectation and service delivered are compared to measure their experiences for customer satisfaction (Kusnierz and Gajewska, 2014). Past studies are focusing on both brands and product in relation to consumer satisfaction followed by customer loyalty. Moraga and Paraga (2008) focus on products in the first place and later followed by intangible benefit, which is a brand name. The sample analyzes two different categories of products, with electronic products representing as innovative products, while wine represents traditional products category. The conclusion is made where customer satisfaction and loyalty can be achieved differently depending on the different stages of product development in the market starting from the introduction to the mature stage. Consumers' satisfaction varies due to product categories as the innovative products involved compete intensely in technology development matched by consumer's high participation, unlike traditional products which have lower consumer participation.

A similar study has focused on understanding consumer satisfaction across different product groups of three brands with slight differences in questioning whether the products meet the expectation of consumers and whether the consumers' affective feeling state are unique, which are the constructs that have been put into use in the research. Both "meet expectation" and "affective feeling

state" are two typical perspectives of consumers' satisfaction discussed under this study (Broyles et al., 2009). Meeting expectation measures consumers' evaluations of the product after usage while affective feeling state measures consumer satisfaction. The finding indicated that the two perspectives are two distinct constructs with each having a significant influence on future repurchase behavior for all brand proposed in the study.

Product Feature and Consumer Satisfaction

Product features are considered as one of the most important aspects in building a competitive advantage (Al-kwifi and McNaughton, 2011). Al-kwifi et al. (2014) reveals that product features can be identified as a critical factor for consumers in the decision to switch between technologies offered as this factor reflects product capabilities and competitive advantage it has. Adding features to products can enhance the appeal of a product and increase its competitive advantage (Glasscock and Wogalter, 2006). In electronic commerce, product features such as price, quality, reliability and consistency are noted, while website quality such as ease of use, navigation, accessibility are important elements in determining consumer satisfaction with future purchase decision (Tabaei et al. 2011). The overall performance of the system and ease of use tailored to each individual needs increase performance and satisfaction in using mobile phones and eventually led to improving communication skills, self-confidence and engagement in social activities for disabilities (Nguyen et al. 2008).

Ling et al. (2007) propose different aspects of mobile phone features that can satisfy consumers. Rather than having a technology-driven design full of features but with difficulty to use, consumers deem physical appearances, sizes and menu organizations to be the most important design features of all which contribute to 425 of total variance satisfaction. Other factors that receive less satisfaction rating from consumers are games, battery duration, keypad design and many others. However, this study is conducted for the non-smartphone device and involves the more conventional mobile phone before smartphone was introduced and widely accepted in the society. These observations led to the first hypothesis:

H1: Product feature is positively affecting the satisfaction of Malaysian smartphone consumers.

Brand Image and Consumer Satisfaction

Brand image has been defined as quality perception made by consumers with association to the brand name (Aaker and Keller, 1990), while Wood (2000) defines brands as an image in consumers' mind. Brand image is important in a way that the image of brand is built by consumers through fleeting moments over time and linked to both everyday moment and special occasions in their lives (Rindell and Iglesias, 2014). Consumer's memory holds brand associations which reflect consumers' perception about a brand.

According to Brunner et al. (2008), the importance of both brand image and consumer satisfaction can be differentiated according to different level of consumer experiences with the product or services. Brand image has become a strong predictor for loyalty for experienced consumers, while new consumers' satisfaction is crucial for their initial experiences with the service or product while considering image being a smaller role in terms of loyalty. Loyal consumers are less sensitive to the current services and its satisfaction and thus will give the company another chance.

A study conducted in China focusing on brand image and consumer satisfaction indicates that a good brand image within Chinese mobile phone market enhances consumer satisfaction and experiences for a long term and eventually leads to loyalty and commitment of market offering (Ogba and Tan, 2009). Other study linked brands, retailers, and consumers in electronic and computer products in a way that retailers can benefit from the brand sold or brand produced by the manufacturers through consumers purchase intention. In the study, brand trust and satisfaction have an impact on retailer purchase intention but still this impact is mediated through consumers' trust towards retailers and consumer satisfaction. It can be concluded from the study that both manufacturers and retailers can benefit from powerful brands and manufacturer's name when consumers are satisfied with the brand sold. For instance, consumers would likely refer their computer as Compact brand rather than specific model of the product itself (Zboja and Voorhees, 2006). Following this line of reasoning, the following hypothesis is proposed:

H2: There is a positive relationship between brand image and the satisfaction of Malaysian smartphone consumers.

Product Judgment and Consumer Satisfaction

Judgment or brand judgment is a personal opinion or evaluation made by consumers in regards to the brand or product (Keller, 2001). Kabecha (1997) proposes that judgment made by consumers toward a product is based on price and quality. However, the result reveals that quality judgment made towards informal sector products leads to product purchase. The informal sector product is not satisfied in respect to products appearances, finish, and workmanship. This falls under product quality category with different levels of technology used in the making of the product involved. Klein et al (1998) also measures product judgment made by consumers based on the quality of product. For example, the Chinese consumers judge the quality of Japanese products before making any purchases.

Ozcan and Sheinin (2012) have studies about how consumers judge and understand products based on multi-attributes and complete features. Products categorized under competitive product assortment with more extensive multi-attributes such as the Colgate Total are preferred over products with less-attribute that are customized to certain group of consumers. However, dissatisfaction may follow post-purchase for products with too many features that lead to frustration. Based on this argument, the following hypothesis is advanced:

H3: Product judgment is positively associated with the satisfaction of Malaysian smartphone consumers.

Figure 1 illustrates the conceptual framework and locations of the hypotheses regarding those elements that affect tacit knowledge acquisition and its impact on the supplier's capability enhancement and opportunity recognition.
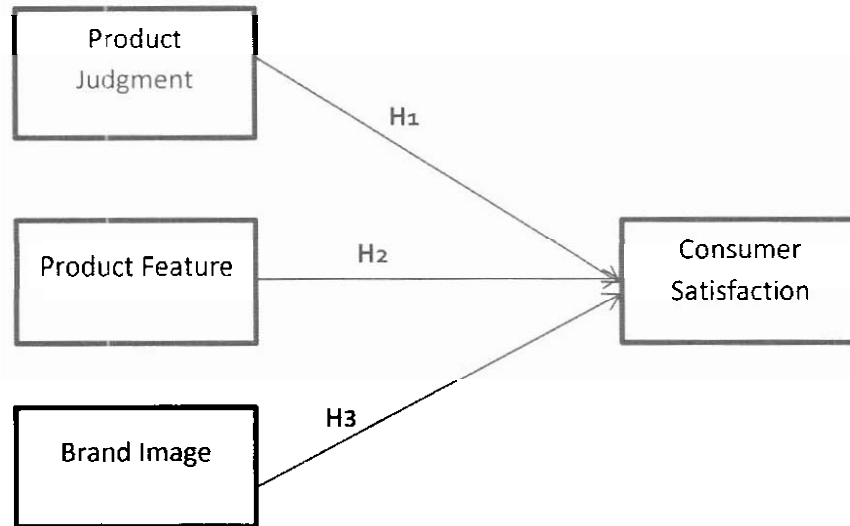
Figure 1: Research Framework

Methodology

The sampling process involves identifying and determining the population for this study. The target population of this study is the students who live in the Northern Malaysia such as Perlis and Kedah states. This sample includes all students and workers in those areas. Generation Y is chosen based on their highest level of involvement in accepting smartphone compared to other younger or older groups in Malaysia. Research from Morris and Venkatesh (2000) suggest that age difference is one of the factors that affects the intention to use information system and adopting new technology.

Convenience sampling method is used since all respondents are easy to reach. Sample size is determined based on the table provided by Sekaran (2013) according to the target population. According to the Department of Statistics Malaysia (2010), the total number of urban population in Perlis and Kedah for Generation Y aged from 20 to 38 years old is 38,255 and 125,034 people respectively. Therefore, the total number of target population for this study is 163,289 people. These urban areas cover main cities in both states which are Kangar, Sungai Petani and Alor Setar. Based on the table of sample size by Sekaran (2013), the sample needed for the population with 75,000 people and above are 382.

The data is analyzed using a quantitative method which is Statistical Package for the Social Science 19.0 (SPSS). The researcher uses descriptive statistics method as a way to compile and interpret the raw data. The data will then be processed in a more concise form. In this study, several statistical techniques are

used which are frequencies distribution and multiple regression analysis for testing the collected data.

Empirical Result

In this study, Hypothesis 1 shows that product feature was predicted to be positively related to the Malaysian consumers' satisfaction in using smartphone. The Pearson Correlation value in Table 1 for product features is 0.517 and it is significant at 1 percent. This indicates that product features correlated significantly to consumer satisfaction in using smartphone product ($r = 0.517$, $p<0.01$). Therefore, the hypothesis 1 is supported. The result in the previous chapter suggests that product features also influence consumers in satisfying their usage toward smartphone product. Previous study done by Tabaei et al. (2011), which postulated price, quality, reliability, ease of use, navigation, and accessibility categorized under product features as the important element in determining consumer satisfaction. As noted by Lambert (1980); Zhang and Lim (2003), product features with other characteristic comprising of brand reputation, store image, market share, country of manufacture and price is attributed to the quality of branded products by consumers. This suggests the existence of relationship between product features and product quality. Consumer satisfaction can be attained as product quality is achieved (Matzler and Hinterhuber, 1998).

Hypothesis 2 refers to the relationship between brand image and consumer satisfaction in using smartphone. As shown in Table 1, the Pearson correlation value for brand image is 0.322 and significant at 1 percent. Therefore, it is correlated significantly between brand image and consumer satisfaction in using smartphone products and this result supports the hypothesis proposed. This result is similar to those from previous studies by Martenson (2007), Kandampully and Suhartanto (2000) and Ogba and Tan (2009). Consumers perceive quality based on brand image of certain product which increases consumer satisfaction. This result affects consumers' behavior that is later followed by consumers' loyalty towards similar brands and led to repurchasing intention. This outcome is in line with the definition of brand image that represents a consumer's perception of a brand as reflected in their memory by the brand associations (Keller, 1993). Brand image is easier for consumers to keep in mind as this involves pictures and symbols as well as symbolic meanings which are associated to specific products or services.

Hypothesis 3 refers to the relationship between product judgment and consumers' satisfaction in using smartphone. The value of Pearson correlation for product judgment is 0.730 and it is significant at 1 percent. Thus, the proposed hypothesis is supported. The similar result is supported by previous study Ozcan and Sheinin (2012) regarding consumer satisfaction and consumer judgment towards product features. Consumers will be satisfied if the features that come with the product are not redundant or too complicated for their usage. The findings from the current study proves that product judgment in terms of product quality, image of manufacturing nation, and price categorized under product attributes is important in increasing consumer satisfaction for smartphone products.

Table 1: Correlation of Research Dimension

Variables	1	2	3	4
Product Feature (1)	1.00			
Brand Image (2)	0.303**	1.00		
Product Judgment (3)	0.601**	0.419**	1.00	
Satisfaction (40	0.517**	0.322**	0.730**	1.00

The R Square value is used to measure how the listed independent variables explain the variance in the dependent variable. With reference to Table 2, The R Square value is 0.542 which explains that the independent variables used in this study help to explain about 54.2 percent of the variance in consumer satisfaction.

Table 2: Model Summary

Mode 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.736^a	.542	.538	.51672

a. Predictors: (Constant), PJ, BI, PF
b. Dependent Variable: STF

Collinearity diagnostic is done through the values under Tolerance and Variance Inflation Factor (VIF). Tolerance is one of indicators used to measure how much variability of one independent that is not explained by the other independent

variables listed in the study. The value shown is said to show multicollinearity if the value for Tolerance is very small or less than 0.10 while the VIF value on the other hand is above 10. As the table displays multiple regression analysis for collinearity statistics, the VIF value are ranged from 1.219 to 1.734 whilst for Tolerance, values are ranged from 0.577 to 0.820 of which all values fall under the accepted range as described above. It indicates that the collinearity problem does not exist in this study.

To determine which of the variables included in the model contribute to the prediction of the satisfaction is done by comparing and evaluating the Beta value under the standardized coefficient table above. The highest value presented makes the strongest unique contribution in explaining the dependent variables. As for this study, based on Table 2 above, the highest value for beta coefficient is 0.652 that is shown by product judgment. This can be concluded that product judgment is the strongest contributor for the consumers satisfaction (beta = 0.652), followed by product features as the second strongest contributor to consumer's satisfaction (beta = 0.121). Brand image contribute as much as 0.12. As for unique contribution to the consumer satisfaction, the significant value for product judgment and product feature is less than 0.05 which indicates that product judgment and product features are making significant unique contribution to the prediction of the consumer satisfaction.

Table 3: Multiple Regression Analysis and Collinearity Statistics

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.297	1.76		1.687	.092		
Product Feature	.129	.046	.121	2.776	.006	.635	1.574
Brand Image	.010	.033	0.12	.316	.752	.820	1.219
Product Judgment	.774	.054	.652	14.213	.000	.577	1.734

Conclusion

The main objective of this study is to identify factors affecting consumer satisfaction on smartphone products from two categories which are product factors and external factors. Thus, it is crucial for smartphone producers to consider product judgment and product features as the input for better production in the future. This applies not

only in Malaysia. In fact, it is also beneficial to other countries with similar economic development and neighboring countries. Consumer satisfaction is essential for company's market share and competitive advantage as consumers' continuous purchase yields higher profit compared to reducing cost in order to gain new consumers. Word of mouth is a powerful marketing agent starting from satisfied and experienced consumers or friends spreading the benefits of the products to inexperienced ones. At the same time, other elements in this study must not be given less attention as they also contribute in determining consumer satisfaction.

From the theoretical perspective, in predicting consumers' behavior, it consist of three stages before the actual action is implemented as suggested by the Theory of Planned Behavior (TPB). Consumers have incomplete power and control for their intentions towards certain action. In this study, consumers are influenced by social interaction and people around them through the process of seeking information and sharing experiences. This exists in one of the three elements mentioned in the TPB which is under the perceived behavioral control. The second element that determines a consumer's intention towards certain behavior and action is behavioral attitude. The judgment towards each product as opposed to money spent determines the satisfaction achieved when it is also compared to their initial perception of smartphone before it is purchased. As all elements existed in this theory are significant with the result obtained, it can be concluded that TPB is the best predictor for consumer satisfaction. Also, this current study contributes to the body of knowledge in the smartphone and electronic product category in determining consumer satisfaction other than understanding consumers' preferences and needs after making a purchase and experience the product. Besides that, the relationship between product judgment and country of origin to consumer satisfaction in this specific product category is unexplored in the past researches thus adding it to another contribution in this area.

Consumer satisfaction is a key to successful business. It is also important to mention the role of smartphone producers and sellers who transform consumers' needs, demands and tastes into good quality products to fulfill consumers' expectations. For smartphone producers, this finding helps to explain the important aspects in which Malaysian consumers are looking for in smartphones being introduced in the near future. This study helps new local producers to focus on consumers' needs and wants, other than by helping existing players to strengthen

There are a few limitations on this research. First, regarding the location, this study employs a sample of two states comprising of 163,289 people only. Thus the study only covers the northern area of Peninsular Malaysia and is insufficient to apply the finding for the whole nation. Other than that, other states that are excluded in this study have different levels of economic development such as in urban and suburban states or those with strong global presence of high profile smartphone producers. These differences might somehow lead to different results. The result obtained from this study cannot be generalized to the whole Malaysia since there are only two states involved and followed by a limited number of respondents involved. Third, this study is meant to measure consumer satisfaction among the largest group of consumers in this product category. Therefore, other than Generation Y, this study is neglecting the other three groups which are Generation X, baby boomers, and newer generations coming after Generation Y who also employ smartphone usage in their daily lives.

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