

Purchase Intention of Smart Wearable Technologies: A study among University Students in Malaysia

Sook Fern Yeo¹, Cheng Ling Tan², Zoe Yee Choo³ ^{1,2}Graduate School of Business, Universiti Sains Malaysia ³Multimedia University Malaysia

Abstract

Technological developments keeping impact and change people's daily lives at the worldwide in a fast growing pace. One of the noticeably influence technological advances is the smart wearable technologies. The expansion of this technology has created various innovative products or services connecting numerous gadgets or devices for improving people's life quality better. Therefore, this paper examines on the factors influencing purchasing intention of smartwatch among university students in Malaysia. The result shows that two variables that are price and brand name have no significant relationship except one variable, compatibility that has significant relationship with purchasing intention.

Keywords: smartwatch / wearable technology / Malaysia

Introduction

In this technology advance era, people are living in the environment which is full of electronic devices. People start to realize that the electronic devices such as smartphone can bring a lot of benefit to them. Furthermore, smartwatch is a wearable devices which can bring the similar benefit like smartphone which can use as a navigation and call for other people. Statista (2016) has reported that wearable device market has been growing since 2015 and Asia Pacific has recorded the second biggest wearable devices sales with 30.4 million unit sales. According to Tandon (2015), smartwatch in Malaysia had function as major to control music, incoming messages and mail by 22%. As Malaysia is one of the members of Asia Pacific, thus, it is an interest to study the smartwatch in Malaysia.

Objectives

The main objective of this study is to identify the significant influence of price, brand name and compatibility on consumer purchase intention for smartwatch among university students in Malaysia.



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 9 "Local & Global Sustainability: Meeting the Challenges & Sharing the Solutions"

Research Scope

According to Krejcie and Morgan (1970), if the population is more than 420 the respondents needed are 201. Therefore, in this research, 201 sets of questionnaire were distributed to university students who study in university in Melaka, Malaysia.



Literature Review

In this new modern era, everything that we using is associate with the technology product such as computer, smartphone and smart watch. Nowadays, smart watches have sophisticated characteristic, since they are computing devices that are viewed as fashion stuff (Jung, Kim & Choi, 2016). In this competitive high technology market, if smart watch can be multifunctional like computing device also be a fashion stuff. It will increase the profit of smart watch. Therefore, it is an attractive for the technology company to join into smart watch. As the smartphone business sector is developed, IT sellers are attempting to make new interest for smartphone and a lot of their consideration is coordinated to wearable computing devices (Jung et al., 2016).

Purchase Intention

Ajzen (1985) defined intention as a situation of an individual's ability to transact the behaviour and it is regarded as a prompt predecessor of behavior. In addition, Diallo (2012) points out that consumer purchase intention directs to the endeavour to purchase a product or service. Purchase intention is not only the benchmark to evaluate the probability of a consumers to buy a product. Das (2014) stated that purchase intention will affect by consumer's great impression towards a product, service or private label store. If consumer have a good impression towards a product it will affect the consumer purchase intention. When consumer wants to buy a product they will definitely remember the good impression of product. Therefore, good impression towards a product will increase the consumer purchase intention.



Price

In marketing literature, price is essential framework and important factor as an indicator of commodity price (Erdil, 2015). Besides, Lien, Wen, Huang and Wu (2015) stated that one of the key indicator of consumers' purchase decision making is the price of the product. Apart from this, pricing is affecting consumers' decision making process also as a marketing communication tool to transmit message to consumers for the product and brand perception. Based on Chew et al. (2012), their result showed that was a positive relationship between price and purchase intention of smartphone among the young adults in Universiti Tunku Abdul Rahman, Perak Campus, Malaysia.

H1: Price has a positive effect on consumer purchase intention.

Brand Name

In order to be an achievement of company, brand is very important to the company. Brand is the most valuable property for a company, where it shows a product or service purpose to consumers Brand is the fundamental or principle part of marketing that dependably been developing imperative issue (Emor & Pangemanan, 2015). Sohail and Tanveer (2015) stated that brand implies trust in consumer's eyes and it is credible that quality would not be bargained. Brand name can be distinguish the company from the competitors as name, term, symbol and design (Rahim et al., 2016). Hence, consumer will not confuse with the competitor brand. Thus, Sohail and Tanveer (2015) stressed that the opportunity of failure of the new product is launched with established brand name would be less and there is lesser expenses caused on marketing the new product. Rahim et al. (2016), the result was tested that there was a positive relationship between brand name and purchase intention of smartphone among the university students.

H2: Brand name has a positive effect on consumer purchase intention.

Compatibility

Rogers (2002) explained compatibility is one of the element of Roger's Diffusion of Innovation (DOI) whereby the attribute of innovation is compatibility, trialability, relative advantage and observability. In addition, compatibility is the extent to which the innovation is seen as corresponding with the current values, needs and past experience of potential adopters'. Besides, consumer might consider whether smart watch operating system is compatible with their smartphone. Product compatibility can empower for consumers to assemble their framework that is nearer to their optimal, inclination and desire when a company focus on product compatible (Ibrahim et al., 2013). Arslan and Zaman (2014)



tested that the relationship between compatibility and consumer purchase intention was positively related to each other.

H3: Compatibility has a positive effect on consumer purchase intention.

Research Operation

Research Methodology & Data Collection

This study was carried out using a structure questionnaire having 19 statements regarding the factors affecting consumer purchase of smartwatch and purchase intention along with the respondent's demographic profile. A 5-point Likert scale was used in this study. A total sample of 201 was chosen using non probability convenience sampling method from among the students studying in a degree in business program.

Data Analysis

Statistical Package for Social Science (SPSS) technique computer software version 25.0 is used to analyze the respondents' demographic profile. Besides, the Structural Equation Modeling (SEM) technique was employed to test the hypotheses for this study with the use of Smart-PLS Version 3.

Research Results

The demographic characteristics of respondents shows that 55.4% of the respondents are male, whereas the percentage of female respondents is 44.3%. The majority of the respondents fall in the age group from 22-23 years old which recorded at 46.8%, followed by 43.8% for the age level from 20 to 21 and only 2.93% of respondents with the age above 25.

Meanwhile, for the price or budget range to purchase a smartwatch among students, majority of the respondents (36.3%) have set a budget of between RM 301 – RM 600 and only 3.0% of students are willing to spend more than RM 1,200 for purchasing a smartwatch. The result shows that most of the students (68.2%) have purchased at least 1 smartwatch. Only 19.4% of respondents are reported that possessed 2 smartwatches while 12.4% of respondents have more than 2 smart watches.



Variable	Frequency	Percent (%)
Gender		
Male	112	55.7
Female	89	44.3
Age		
20-21	88	43.8
22-23	94	46.8
24-25	13	6.47
Above 25	6	2.93
Budget range		
Below RM300	71	35.3
RM301-RM600	73	36.3
RM601-RM900	43	21.4
RM901-RM1,200	8	4.0
Above RM1,200	6	3.0
Number of Smartwatch Purchased		
1 smartwatch	147	68.2
2 smartwatches	39	19.4
More than 2 smartwatches	15	12.4

Table 1: Profile and Descriptive Statistics of Respondents

Measurement Model Results

The construct validity is determined by convergent and discriminant validity in this study. As the loadings of all construct indicators shall exceed the value of 0.5 (Hair et al., 2011), P5 with factor loadings of 0.499 was removed due to the AVE for purchase intention is 0.487 which is below 0.50. The composite reliability (CR) values in this study has exceed the recommended value of 0.7 (Hair et al., 2011) which ranged from 0.828 to 0.915. The AVE measures the variance captured by the construct indicators about the measurement error, ranged from 0.549 to 0.683, of which is greater than 0.50 (Hair et al., 2011).



Table 2. Measurement model

Constructs	Question Items	Loadings	AVE	Composite Reliability
Brand Name	BN1	0.846	0.624	0.868
	BN2	0.765		
	BN3	0.683		
	BN4	0.854		
Compatibility	C1	0.870	0.683	0.915
	C2	0.845		
	C3	0.829		
	C4	0.746		
	C5	0.837		
Price	P1	0.737	0.549	0.828
	P2	0.718		
	P3	0.841		
	P4	0.655		
Purchase Intention	PI1	0.789	0.632	0.896
	PI2	0.780		
	PI3	0.752		
	PI4	0.822		
	PI5	0.832		

Structural Model Results

After computing the path estimates in the structural model by bootstrap analysis, the statistical significance of the path coefficients was determined. According to Hair et al. (2013), although 5000 resample are recommended, the authors also stated that the number of bootstrap samples should be high and exceeded the number of valid observations in the data. Therefore, the bootstrapping procedure for this study at done with 5000 resample employed to produce path coefficient and their corresponding t-values. Table 3 shows compatibility (t=9.940, p<0.01) has a positive and significant relationship with purchase intention. Meanwhile, price (t=0.975) and brand name (t=1.379) had no significant relationship with purchase intention.



Hypothesis	Path	Beta Value	Standard Error (STERR)	t – Value	2.5%	97.5%	Decision
H1	Brand Name -> Purchase Intention	0.082	0.060	1.379	-0.038	0.197	Not supported
H2	Compatibility -> Purchase Intention	0.581	0.058	9.940**	0.458	0.681	Supported
H3	Price -> Purchase Intention	0.053	0.054	0.975	-0.071	0.141	Not supported

Table 3: Results of the hypothesis testing

**p<0.01, *p<0.05, Bootstrapping (n=5000)

Conclusion and Discussion

The aim of this study was to investigate the influence of price, brand name and compatibility on consumer purchase intention towards smartwatch among university students. The findings indicated that compatibility has significantly and positively on purchase intention. The result was consistent with the findings of Arslan and Zaman (2014) where they found that 60% of the respondents will think about purchasing the innovative product. On the other hand, price and brand name were found to be insignificant to purchase intention. The results for brand name is inconsistent with Kaushal and Kumar (2016) due to different geographic area with different culture, belief, habit and lifestyle. Price was found to be insignificant too and this findings is inconsistent with the study conducted by Chew et al. (2012). Their result showed that price was a weakly influence purchase intention. In conclusion, the present study helps. In conclusion, the present research helps us to understand the importance of compatibility influence on purchase intention of smartwatch among University students. Contrary to brand name and price did not have a significant relationship with purchase intention. Future studies need to be carried out to investigate other factors such as social influence and relative advantage which may influence purchase intention of smartwatch. In sum, the results of this study suggested that it is very importance for the smartwatch manufacturers to understand what are the determinants influencing University students' purchase intention towards smartwatch because they represented the future main uses of smartwatch. Moreover, it is the key to increase their own market share within the respective market segment.



References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. InAction control (pp. 11-39). Springer Berlin Heidelberg.
- Arslan, M. & Zaman, R. (2014). Effects of Pre-Announced Product Characteristics on Customer's Purchase Intention. European Journal of Business and Management, 6, 2222-1905.
- Chew, J. Q., Lee, J. H., Lim, C. T., Loke, W. W., & Wong, T. K. (2012). Exploring the factors affecting purchase intention of smartphone : a study of young adults in Universiti Tunku Abdul Rahman, Perak Campus, Malaysia. Final Year Project, UTAR.
- Das, G. (2014). Linkages of retailer personality, perceived quality and purchase intention with retailer loyalty: A study of Indian non-food retailing. Journal of Retailing and Consumer Services, 21(3), 407-414.
- Diallo, M. F. (2012). Effects of store image and store brand price-image on store brand purchase intention: Application to an emerging market. Journal of Retailing and Consumer Services, 19(3), 360-367.
- Emor, A. M. & Pangemanan, S.S. (2015). Analyzing Brand Equity On Purchase Intention Through Brand Preference Of Samsung Smartphone User In Manado. Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi, 3(2), 124-131.
- Erdil, T. S. (2015). Effects of customer brand perceptions on store image and purchase intention: An application in apparel clothing. Procedia-Social and Behavioral Sciences, 207, 196-205.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. Journal of Marketing Theory and Practice, 18(2): 139-152.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural EquationModeling: Rigorous Applications, Better Results and Higher Acceptance. Long RangePlanning, 46(1-2): 1-12.
- Ibrahim, I. I., Subari, K. A., Kassim, K. M., & Mohamood, S. K. B. (2013). Antecedent Stirring Purchase Intention of Smartphone among Adolescents in Perlis. International Journal of Academic Research in Business and Social Sciences, 3(12), 84.
- Jung, Y., Kim, S., & Choi, B. (2016). Consumer valuation of the wearables: The case of smartwatches. Computers in Human Behavior, 63, 899-905.
- Kaushal, S. K. & Kumar, R. (2016). Factors Affecting the Purchase Intention of Smartphone: A Study of Young Consumers in the City of Lucknow. Pacific Business Review International, 8(12), 1-16.



- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational andvPsychological Measurement, 30, 607-610.
- Lien, C. H., Wen, M. J., Huang, L. C., & Wu, K. L. (2015). Online hotel booking: The effects of brand image, price, trust and value on purchase intentions. Asia Pacific Management Review, 20(4), 210-218.
- McIntyre, A. (2014). Forbes. Retrieved from Wearable Computing in the Workplace to beDependent on Apps and Services:http://www.forbes.com/sites/gartnergroup/2014/03/06/wearable-computingin-the-workplace-to-be-dependent-on-apps-and-services/#29008ab9721e
- Rahim, A., Safin, S. Z., Kheng, L. K., Abas, N., & Ali, S. M. (2016). Factors Influencing Purchasing Intention of Smartphone among University Students. Procedia Economics and Finance, 37, 245-253.
- Rogers, E. M. (2002). Diffusion of preventive innovations. Addictive behaviors, 27(6), 989-993.
- Sohail, A. A., & Tanveer, N. (2015). Buying Behavior of Smartphone among University Students in Pakistan. The International Journal of Business & Management, 3(1), 34.
- Tandon, S. (2015). Digital Market Asia. Retrieved from Malaysia: Smart devices to drive content creation demands: http://www.digitalmarket.asia/2015/07/malaysia-smartdevices-to-drive-content-creation-demands/
- Wearable device unit sales worldwide by region in 2015 and 2020 (in millions). (2016). Retrieved from Statista: https://www.statista.com/statistics/490231/wearable-devicesworldwide-by-region/