

Examining the Factors Influencing Purchase Intention of Smartphones in Hong Kong

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ABSTRACT

This study investigates the factors that influence the purchase intention of smartphones in Hong Kong, including perceived usefulness, perceived ease of use, perceived enjoyment, perceived value, subjective norms and external influence. A sample of 150 full-time secondary and undergraduate students in Hong Kong was selected for the survey regarding purchase intention with smart mobile phones. The results of statistical analysis showed that four factors that have a significant influence on purchase intention include perceived usefulness, perceived ease of use, perceived enjoyment, and perceived value. Hence, industry practitioners in the smartphone industry can consider these factors to assess and help improve their sales.

Keywords: Purchase Intention, Smartphone, Hong Kong

INTRODUCTION

Since mobile phones have become indispensable product in our daily lives, the quality and functions have been greatly improved. The smartphone industry is one of the fastest growing consumer electronic goods industries in the Hong Kong market. Research from Digitimes projects notes that global smartphone shipments rose from 655 million in 2012 to 865 million in 2013, and the proportion of overall handset shipments of smartphones is 43.9% (Digitimes, 2012). To stay competitive, many

brands are launching new models with more product features in order to differentiate themselves (IDC, 2010), and smartphones have become products that incorporate sophisticated technologies. Since smartphone technology is rapidly evolving, an understanding of the critical factors that influence the adoption of smartphones is an important topic of study. This study focuses on examining the factors that influence the purchase intention of smartphones in Hong Kong.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A number of studies have investigated the factors influencing purchase intention of smartphones. A theoretical modeling approach is used by most scholars to investigate these factors. These studies attempt to explain the technology acceptance model (TAM) and theory of reason action (TRA) to explain technology adoption. The TAM is generally considered as the most influential and common theory in the adoption of a technology (Davis, 1989). TAM is based on TRA, which addresses how attitude impacts behavior (Fishbein and Ajzen, 1975). Seven constructs and six hypotheses are outlined below.

Purchase Intention

Purchase intention refers to the tendency for the consumer to take actual purchase action. Purchase intention shows one's willingness to purchase a product and his/her assessment of alternative options based on preference, experience, and external factors (Zeithaml, 1988).

Perceived Usefulness

Perceived usefulness refers to users' beliefs that a smartphone could help individuals enhance their performance in terms of communication, personal management of activities, personal agendas, and entertainment (Davis, 1989). TAM also addresses perceived usefulness, one of the major determinants that predict the behavioral intention of a new technology (Cyr et al., 2006; Venkatesh, 2000). Therefore, the following hypothesis is proposed:

H₁: Perceived usefulness is positively related to purchase intention

Perceived Ease of Use

Perceived ease of use can be referred to as the extent to which users believe that using a technology could be free of effort (Davis, 1989). Sometimes, even though an application or a technology is believed to be useful in completing tasks, simultaneously, users may believe that such a technology is too hard to use, so the performance benefits of usage are outweighed by the effort of using or learning the technology. Perceived ease of use is found to be one of the significant determinants of behavioral intentions to adopt new technology (Agarwal and Karahanna, 2000; Davis, 1989; Venkatesh, 2000). Thus, the following is hypothesized:

H₂: Perceived ease of use is positively related to purchase intention.

Perceived Enjoyment

Perceived enjoyment refers to the emotional benefits, intrinsic value, or affective dimension of benefits gained from consumption of smartphones, which include fun, enjoyment, and entertainment. Evidence from technology acceptance literature shows much support for the relationship between perceived enjoyment and purchase intention (Cyr et al., 2006). Therefore, it is hypothesized as follows:

H₃: Perceived enjoyment is positively related to purchase intention.

Subjective Norms

A subjective norm is defined as a perceived social pressure toward whether or not to perform the behavior in question (Ajzen, 1991). Sánchez and Hueros (2010) incorporate subjective norms into TAM, showing that it has a significant impact on behavioral intention. Based on the theory of reasoned action (Fishbein and Ajzen, 1975), a person's behavioral intention is influenced by subjective norm, which means a person's intention is influenced by how others perceive and comment about it (Davis, 1989). Therefore, a person should perform the behavior in question according to the opinion of his/her valued friends, family members, or senior members (Fishbein and Ajzen, 1975). The hypothesized relationship is developed as follows:

H₄: Subjective norms are positively related to purchase intention.

External Influence

For the adoption of a new smartphone, users always rely on external sources of information, such as anonymous groups and online sources that are readily available through online social networks, discussion forums, and online review reports. The external sources of information are composed by consumers who have prior

experiences with the products, and these sources are rather valuable as they help smartphone users to choose new products, especially for consumers who are making a choice regarding experience goods such as smartphones (Neelamegham and Jain, 1999; Yoo et al., 2010). Based on the above discussion, a hypothesis of this study is presented as follows:

H₅: External influence is positively related to purchase intention.

Perceived Value

Kolter and Kelly (2006) defined value proposition as a set of benefits that a company offers to customers to satisfy their needs through a combination of products, services, information, and experiences. Customers' purchase intention is motivated by their perception of benefits and values acquisition, and it is an important key element to predict consumer purchase behavior (Monroe and Krishnan, 1985; Thaler, 1985). Therefore, the hypothesized relationship is as follows:

H₆: Perceived value is positively related to purchase intention.

In summary, purchase intention is identified as the dependent variable, and six independent variables are identified in the research framework, including perceived value, perceived usefulness, perceived ease of use, perceived enjoyment, subjective norms, and external influence.

RESEARCH METHOD

Sampling and Data Collection

The target population for this study included teenagers of secondary and undergraduate students in Hong Kong as they represent a large segment of smartphone consumers (771,600 students) (Hong Kong Education Bureau, 2014). They have high purchasing power, or their parents are willing to buy them smartphones, so it is a sizable and valuable segment for smartphone manufacturers to target.

A structured questionnaire survey and quantitative measures were used for statistical analysis (Schneider and White, 2004). The items in the structured questionnaire were developed using a 7-point Likert scale. The questionnaire consists of items adapted from Chen (2006). A purposive sample of 150 secondary and undergraduate students in Hong Kong was selected for the survey study relating purchase intention of smartphones. They were required to complete the responses through direct interviews.

DATA ANALYSIS

Characteristics of Respondents

Data collected from the survey were analyzed using the Statistical Package for Social Science (SPSS) software, and descriptive analysis was used to present a profile of the respondents. Table 1 showed a balanced sample between females (51.3%) and males (48.7%). 54% of respondents indicated that HKD2,500 to HKD3,500 is a reasonable price range for the expenditure of a new mobile phone. 47.3% of the respondents have a monthly personal income level of HKD1,000-\$3,999. The reason for the relatively low income range is that most of the respondents are teenagers who are full-time students with part-time jobs or with pocket money provided by their families. Overall, the samples include a balanced number of teenagers and college students that belong to the growing segment of consumers for smartphones.

Exploratory Factor Analysis and Reliability Analysis

Exploratory factor analysis is used to find latent variables which better explain the data (Byrne, 2002). Table 2 shows that all factor loadings for the questionnaire items for the independent variables have a factor loading greater than 0.50, and these were regarded as having high factor loadings in the construct (Hair et al., 2010). The result of factor analysis showed that all items that were expected to converge actually do so.

A reliability analysis was conducted for the six independent variables used in this study. Cronbach's alpha coefficient for all the constructs range from 0.755 to 0.884, which are well above the recommended value of 0.7, so they exhibited sufficient internal reliability.

Multiple Regression Analysis

Multiple regression analysis was performed to examine the factors that influence the respondents' intention to purchase smartphones. Table 3 showed that the variables with significant Beta in predicting the dependent variables were perceived usefulness, perceived ease of use, perceived enjoyment, and perceived value. Therefore, purchase intention was predicted by these four independent variables. The computed p-value for perceived usefulness, perceived ease of use and perceived enjoyment were smaller than 0.001, so H1, H2 and H3 were supported at 0.001 level of significance. The computed p-value for perceived value was smaller than 0.05, so H6 was supported at the 0.05 level of significance.

The results also showed that that the computed p-value for subjective norm and external influence were both greater than 0.05, which indicated that subjective norms and external influence did not have significant influence on purchase intention of smartphones. Therefore, H4 and H5 were not supported. The R-squared value ($R^2 = 0.581$) of the multiple regression analysis meant that 58.1% of the variance in the dependent variable can be explained by the combined effect of the six independent variables.

Table 1 Demographic Profile of Respondents

	Demographic Variable	N	Percentage
<i>Gender</i>	Female	77	51.3%
	Male	73	48.7%
<i>Education</i>	High School - Form 4	21	14.0%
	or Form 5	23	15.3%
	High School - Form 4	30	20.0%
	or Form 5	10	6.7%
	Diploma	66	44.0%
<i>Personal Monthly Income</i>	Associate Degree		
	Degree		
	Less than \$1,000	23	15.3%
	\$1,000-\$2,999	38	25.3%
	\$3,000-\$3,999	33	22.0%
	\$4,001-\$4,999	29	19.3%
	\$5,001-\$5,999	9	6.0%
\$6,001-\$6,999	7	4.7%	
<i>Expected expenditure for smartphones</i>	\$6,001 or above	11	7.3%
	\$1,500 - \$1,999	2	1.3%
	\$2,000 - \$2,499	18	12.0%
	\$2,500 - \$2,999	37	24.7%
	\$3,000 - \$3,499	44	29.3%
	\$3,500 - \$3,999	28	18.7%
	\$4,000 - \$4,499	13	8.7%
	\$4,500 - \$4,999	3	2.0%
\$5,000 or above	5	3.3%	

Table 2 Six Factors Derived from The Rotated Component Matrix

Variables	<u>Factor 1</u> Subjective Norms	<u>Factor 2</u> Perceived Enjoyment	<u>Factor 3</u> Perceived Usefulness	<u>Factor 4</u> Perceived Ease of Use	<u>Factor 5</u> Perceived Value	<u>Factor 6</u> External Influence
Peers - Personal image projected	.846					
Peers-Confidence-Status bring to	.814					
Trendiness of peers in using	.780					
Peers - a common topic of	.755					
Direct mail & messages about	.722					
Family direct influence	.583					
Friends' direct influence	.546					
Enjoy Internet access features		.826				
Video playing capabilities		.813				
Applications & entertainments		.746				
Flash & game facilities		.710				
Camera & photo mgt		.675				
Fun & enjoyment		.598				
Improve learning and work			.850			
Strengthen the link between people			.702			
Effective time management			.670			
Features that enable effective			.517			
Ease to use				.812		
User-friendly Interface				.770		
Flexibility				.669		
Benefit exceeds expectations					.855	
Benefit exceeds cost					.848	
Able to gain values					.624	
Social Media						.876
Online Discussions						.817
Third Party Reports						.720

Notes: Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization.

Table 3 Regression Analysis for Predicting Purchase Intention

Independent Variables	Beta	T	Sig
Perceived Usefulness	.406***	7.915	0.000
Perceived Ease of use	.425***	7.571	0.000
Perceived Enjoyment	.305***	5.592	0.000
Subjective Norms	.013	0.235	0.815
External Influence	.012	0.222	0.825
Perceived Value	.130*	2.173	0.031

Notes: Dependent variable: Purchase intention. *** $p < 0.001$, * $p < 0.05$

DISCUSSION

According to these results, the determinants of purchase intention for smartphones are consistent with the technology acceptance model (Davis, 1989). Perceived ease of use and perceived usefulness were found to influence the purchase intention of students toward the technology. Perceived ease of use was found to be a stronger predictor of purchase intention than perceived usefulness. This is consistent with previous research on social networking systems, which supports the fact that perceived ease of use is more important than perceived usefulness for technology adoption in a Web 2.0 mobile environment (Kwon and Wen, 2010). In this study, perceived enjoyment was found to have a significant influence on users' purchase intention toward smartphones; these findings are consistent with the research of Park and Lee (2011). Perceived value was also found to have a significant influence on purchase intention, which is consistent with the research conducted by Patterson and Spreng (1997).

Practical Implications

In order to increase sales of smartphones, practitioners in the smartphone industry should focus on the major factors that have a significant influence on purchase intention, including perceived usefulness, perceived ease of use, perceived enjoyment, and perceived value. Practitioners must be aware that there are some key transitions within the smartphone industry, including the change in the relationships between platform leaders and hardware manufacturers, market demand in the smartphone market and carrier support, and the decisions or strategies of major players in the smartphone industry (Digitimes, 2012). Emerging trends in the smartphone market include the popular use of the Android system, having localized

design of smartphones, the venture of smartphone manufacturers into tablet computer business, and the popular use of smartphones for payment (TransWorldNews, 2011).

Future Research

Several issues associated with the limited time frame and cost in this study require further research considerations. First, the target of this study is limited to secondary and college students. Future studies could focus on a different segment of consumers and cover different user characteristics. Second, smartphone technologies are being developed rapidly, and new models and features are being invented and incorporated in the newer generation of smartphones. It would be desirable to identify the adoption aspects based on the attributed suggested by Rogers for investigating the diffusion of innovation, including innovation, time, communication channels, and social systems (Rogers and Palvia, 2003). Finally, future studies could also include cost as one of the factors for investigating the purchase intention of smartphones.

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