

# 중국 대학생들의 스마트폰 구매의도 영향요인에 관한연구

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## A Study on Factors Influencing Purchase Intention of Smartphones on Chinese University Students

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**요약** 본 연구는 중국 대학생들이 스마트폰을 구매하려고 할 때 영향을 미치는 요인을 파악하는 목적을 가지고 있다. 본 연구에서 선행연구에 바탕으로 구매의도에 영향을 미치는 5개 독립변수인 비용, 적합성, 보안성, 사회적 영향, 소비자 혁신성을 도출했고, 만족도는 매개변수로 설정하고 연구하고자 한다. 가설의 검증을 위해서 최종적으로 187명의 중국 청도대학생대상으로 설문지를 통해 SPSS 18.0통계분석을 실시하였다. 주요 분석 결과는 적합성, 소비자 혁신성은 만족도에 영향을 미치는 것으로 나타났지만, 비용, 보안성과 사회적 영향은 만족도에 영향을 미치지 않는 것으로 나타났다. 또한 만족도는 구매의도에 영향을 미치는 것으로 나타났다. 마지막으로 본 연구는 중국시장에 진입하기 위한 경험적 분석 결과에 기반을 둔 마케팅 효과를 제시하고자 한다.

**주제어** : 스마트폰, 구매의도, 만족도, 중국소비자

**Abstract** The purpose of this study is to explore the factors affecting purchase intention of smartphone in Chinese university students. We have identified five independent variables that affecting purchase intention of smartphone, which include price, compatibility, security, social influence and consumer innovations. We test the degree of influence of these five variables on customer satisfaction eventually and on purchase intention. To prove the hypothesis, we performed questionnaire investigation in Qingdao University. and final date of 187 samples were analyzed by using SPSS18.0 program. The result of hypothesis verification is the followings: As the independent variables of compatibility and consumer innovations are affects satisfaction; the price, security and social influence are not affects satisfaction and the satisfaction as the parameter affects the purchase intention which is the dependent variable in this study in Chinese university students. At the end of this study, the marketing implications for advancing to China market based on the results of empirical analysis were presented.

**Key Words** : Smartphone, Purchase Intention, Satisfaction, Chinese consumers

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## 1. Introduction

Smartphone has become a part of everyday life tool for people around the world. Especially, China's Information Communication Technology (ICT) booms recently and grows faster than ever before. A smartphone is not only used as a communication medium, but also provides an online service tool enabling game, internet surfing, and navigation services. However, due to its rapidly changing economic environment the technology products manufacturers have to corresponding sales plans and marketing strategies. In these circumstances, the main purpose for this research is to explore the factors affecting purchase intention of smartphone on Chinese university students. The result of this study would provide important strategic implications to companies and help them to set efficient entry strategy in order to deal with emerging markets.

## 2. Prior research

Prior research analyzed factors affecting on adoption of smartphone[11]. The factors such as self-efficacy, social influence, perceived usefulness, and perceived enjoyment and influences of these factors on intention to use are assessed. [13] examined the constructs of the cognitive and behavioral attributes to use of smartphone in between Korean and Chinese consumers. The cognitive variables affecting adoption of smartphone classified as perceived enjoyment, perceived usefulness, and perceived ease of use. Recently, smartphone studies have paid much attention to the smartphone's technological characteristics such as [5]'s research on Customer Process Centric Smartphone Application. [14]proposed to the consumers' characteristics, trust, and subjective norms affect consumers' attitude towards the Smartphone based on the [1]'s TPB (Theory of Planned Behavior),

and that study looks at behavioral control's influence on behavioral intention to use a smartphone.

We have five factors that affecting purchase intention of smartphone during this research, which included 'price', 'compatibility'[4], 'security'[8], 'social influence'[14], and 'consumer innovations'. Throughout this research, firms may have a better understanding on how Chinese consumer's intention to purchase a smartphone.

### 2.1 Price

Price is one of the most important cues in marketplace[4]. If buyers perceive that the product's price to be paid is favorable, then they will be more likely to perceive that the price is fair. The price paid by smartphone users may be compared with their usage experiences. If the users' perceptions of the performance or quality of the smartphone exceed their expectations, and the smartphone represents good value for their money, then their perception of the listed price should be favorable[15]. This will lead them to buy the smartphone.

### 2.2 Compatibility

Compatibility of product is company need find some way to fits the past experiences and the needs of the potential adopters used to fulfill and satisfied customers need[4]. When a firm focus a lot on their product compatible, product compatibility can enables consumers to build their system that is closer to their ideal, preference and expectation[6].

### 2.3 Security

Security of smartphone is when customer using a product, customer feel the degree of invasion privacy of personal or data security. Security is Positive belief about the perceived reliability of, dependability of, and confidence in using a Smartphone[16]. Smartphone's mobile services, such as Internet, mobile banking, and

online purchase are attracting consumers and organizational users[7]. Therefore, the security as an important component affecting attitude toward Smartphone purchases intention.

### 2.4 Social influence

Social influence includes not only mass media reports and expert opinions (external factors) but also word of mouth from friends, colleagues, and superiors (interpersonal factors)[3]. In this paper we focus on the interpersonal factor of social influence. Because smartphone is regarded as a new information technology mobile device which creates uncertainty about individual's expected consequences. Additionally, consumers tend to consult with their social network about this uncertainty rather than consulting the external factors such as media and expert opinions before making a decision to use Smartphone.

### 2.5 Consumer innovations

Innovativeness refers to the tendency of some individuals to adopt new products early. Consumer innovators are valuable resources to firms introducing new products, as they perform essential roles in innovation diffusion[12]. Higher consumer innovativeness the higher purchase intention and more purchase action[18].

### 2.6 Satisfaction

Satisfaction is the customer's satisfaction of the products and it will affect the purchase intention[2]. And the satisfaction is also considered the customers' expectation of the quality of the products before purchasing the products according customers' expectation. If the performance of the product is better than customer's the expectation, the phenomenon is called satisfaction[19].

### 2.7 Purchase Intention

Purchase intentions are formed under the

assumption of a pending transaction and, consequently, often are considered an important indicator of actual purchase[17]. Purchase intention shows that consumers will follow need recognition, information search through external environment, evaluation of alternatives, make purchase decision and post-purchase experience[20]. Furthermore, consumer's perception on relative advantage of smartphone and efforts required to obtain a smartphone have significant influence on purchase intention. The effort required to obtain a smartphone includes price, search time, availability and so on[4]. Moreover, purchase intention also treated as metric for prediction of consumer purchasing behavior. Besides that, the intention to purchase is known as consumers tendency to behave on an object; it usually measured in terms of intention to buy[10]. Purchase intention can be used for future demand prediction. There are positive relationships between relative advantage, price, social influence and product compatibility with purchase intention.

## 3. Methodology

### 3.1 Research Design

The research model <Fig.1> of this research examines whether price, compatibility, security, social influence, and consumer innovations affect consumers' satisfaction towards Smartphone purchase as well as purchase intention indirectly via satisfaction, and whether satisfaction control influences purchase intention.



[Fig. 1] Research model

### 3.2 Hypotheses

Based on the past empirical studies, the following hypotheses are proposed.

- H1: There is a significant influence from price towards satisfaction of smartphone.
- H2: There is a significant influence from compatibility towards satisfaction of smartphone.
- H3: There is a significant influence from security towards satisfaction of smartphone.
- H4: There is a significant influence from social influence towards satisfaction of smartphone.
- H5: There is a significant influence from consumer innovations towards satisfaction of smartphone.
- H6: Consumer's satisfaction positively influences the consumer's purchase intention of smartphone.

### 3.3 Data

The sample of this study consisted of who either had previously used or are currently using a smartphone in practice. Samples were select from Qingdao University students in Shandong province, China. Because the high population of smartphone user are young adults. and in future young adults is the biggest target market. The questionnaire survey was administered from April 5<sup>th</sup> to May5<sup>th</sup>in 2013. Questionnaires were distributed to two hundred respondents, 13 untrustworthy questionnaires with low validity were eliminated. The final sample size that was achieved 187.

The survey instrument consisted of two sections, the first section contained definition of smartphone and items to collect general information of the smartphone usage. The second section contained items to measure the independent variables assumed to affect smartphone purchase intention.

<Table1> Demographic Characteristics

Demographic Categories	Frequency	Percentage(%)
Age		
10-19	21	11.2
20-29	166	88.8
N	187	100.0
Gender		
Male	76	40.6
Female	111	59.4
N	187	100.0
Grade		
First year	62	33.2
Second year	82	43.9
Third year	22	11.8
Fourth year	21	11.2
N	187	100.0
Monthly consumption		
500yuan and below	32	17.1
500yuan-800yuan	63	33.7
800yuan-1100yuan	71	38.0
1100yuan and above	21	11.2
N	187	100.0

In first section's Demographic characteristics including four major items in this study: (1) Age, (2) Gender, (3) Grade, (4) Monthly consumption. Demographic features of the respondents are shown in<Table1>.

In order to test the validity of the variables, an exploratory factor analysis was conducted. We deleted five factors. A3, A4, A5 of price, E1 of Consumer innovations, and G1 of purchase intention were excluded The KMO statistic for variables factors was good with a score of 0.783, showing that a factor analysis is appropriate for the data. Bartlett's test was also highly significant (p<0.000) showing that the factor analysis was appropriate. The results of the factor analysis are presented in <Table2>, all variables (price, compatibility, security, social influence, consumer innovations, satisfaction and purchase intention) are reliable since each test indicates its value to be more than 0.6. Which is recorded excellent reliability with Cornbrash's alpha of 0.733, 0.812, 0.766, 0.795, 0.610, 0.739 and 0.779 respectively.

Correlation analyses<Table3> indicate that discriminant validity is reasonably acceptable. It is

(Table 2) The Exploratory Factor Analysis

	Factor						
	1	2	3	4	5	6	7
B1	.816	-.007	.155	.080	.035	.144	.143
B2	.801	.056	.161	.106	.119	-.051	-.007
B3	.798	.093	.086	.119	.112	-.111	.137
B4	.599	.147	.036	.139	.069	.245	.178
B5	.544	.030	.104	.172	.181	.288	-.012
D2	-.045	.770	.107	-.051	.153	.104	.059
D3	.035	.760	-.007	-.076	.177	.073	.236
D4	.105	.744	-.007	.153	.185	.042	.031
D1	.035	.703	.030	-.060	.169	.252	-.057
D5	.199	.670	.089	.163	-.149	-.208	-.002
G3	.098	.014	.848	.060	.042	.073	.094
G2	.103	.013	.786	.107	.118	-.038	.129
G5	.165	.093	.650	.255	-.040	-.183	.088
G4	.139	.116	.592	.317	.057	.161	.194
F2	.052	.030	.236	.786	.119	-.008	.066
F1	.233	-.038	.150	.771	.037	.061	.028
F3	.225	.091	.140	.666	.113	.179	.205
C3	.102	.167	.093	.057	.896	-.001	-.059
C2	.162	.243	.083	.121	.758	.175	-.073
C1	.257	.173	.007	.116	.588	.066	.341
A1	.060	.083	.009	.133	.043	.835	.045
A2	.188	.133	-.049	.027	.119	.794	-.037
E3	.156	.195	.209	.100	.074	-.054	.780
E4	.046	-.014	.139	.325	-.172	.276	.642
E2	.277	.018	.341	-.046	.093	-.249	.537
Factor name	Compatibility	Social influence	Purchase intention	Satisfaction	Security	Price	Consumer innovations
Combrash's alpha	.812	.795	.779	.739	.766	.733	.610
Eigen value	6.095	2.890	2.037	1.668	1.416	1.130	1.030
%of variance explained	24.379	11.559	8.149	6.673	5.664	4.520	4.118

(Table 3) Correlation analysis

		Price	Compatibility	Security	Social influence	Consumer innovations	Satisfaction	Purchase intention
Price	PC Sig.	1						
Compatibility	PC Sig.	.266** .000	1					
Security	PC Sig.	.248** .001	.382** .000	1				
Social influence	PC Sig.	.202** .006	.220** .002	.393** .000	1			
Consumer innovations	PC Sig.	.060 .418	.372** .000	.164* .025	.190** .009	1		
Satisfaction	PC Sig.	.204** .005	.410** .000	.262** .000	.129 .079	.365** .000	1	
Purchase intention	PC Sig.	.024 .744	.352** .000	.221** .002	.163* .026	.475** .000	.456** .000	1

〈Table 4〉 Regression analysis results

		Unstandardized coefficients		Standardized coefficients	t	P-value	Hypothesis
		B	Std.Error	Beta			
	Constant	1.607	.327		4.916	.000	
H1	Price	.113	.077	.101	1.472	.143	Not support
H2	Compatibility	.226	.068	.254	3.349	.001	support
H3	Security	.089	.059	.114	1.512	.132	Not support
H4	Social influence	-.038	.066	-.041	-.567	.572	Not support
H5	innovations	.232	.064	.254	3.608	.000	support

\* dependent variable: satisfaction R-Square=.242 F=11.564 P-value=.000

〈Table 5〉 Regression analysis results

		Unstandardized coefficients		Standardized coefficients	t	P-value	Hypothesis
		B	Std.Error	Beta			
	Constant	1.494	.277		5.401	.000	
H6	Satisfaction	.509	.073	.456	6.978	.000	support

\* dependent variable: purchase intention R-Square=.208 F=48.696 P-value=.000

shows that the correlations between independent variables which include price, compatibility, security, social influence and consumer innovations influences on the satisfaction, and the satisfaction also influences with dependent variable which is purchase intention of Chinese university students. Independent variables have positive linear relationship to satisfaction at significant level 0.05. All value in this probable is less than 0.9 which indicates that there is no multicollinearity problem. And except social influence the correlation among other independent variables is less than 0.9 which is between 0.204 and 0.410. Moreover, the correlation at satisfaction is also less than 0.9 which is 0.456.

#### 4. Research Findings

In order to verify the hypotheses of the proposed research model, we examined the structural paths between the measured variables.

This model estimated the regression paths from price, compatibility, security, social influence and consumer innovations to satisfaction. The regression

path from satisfaction to purchase intention was also estimated.

According to <Table4>and<Table5>. H1 indicates that there is not significant influence from price towards satisfaction of smartphone among university students in China. Result shows P-value is 0.143 and  $\beta$ -value is 0.113 which expressed that H1 is not supported. There was no impact between price to university student's satisfaction which is inconsistent with the study by[4], which is support that price is an important variable impact on satisfaction. But in recent years, the economy of China develops very fast. Smartphone as necessities of university student's life, the price on satisfaction is insignificant.

H2 indicates that there is a significant influence from compatibility towards satisfaction of smartphone among university students in China. Result shows P-value is 0.001 and  $\beta$ -value is 0.226 which expressed that H2 is supported. There are researchers that support this hypothesis. Compatibility is an important issue in smartphone purchase intention[4]. Because of smartphone is compatible to university student's lifestyle. They can use the smartphone login QQ, Micro-blog and other social network which are

nowadays students are very active in it. And students love to surf internet whenever they are, smartphone is able to satisfy their needs. So H2 is fully supported.

H3 indicates that there is a significant influence from security towards satisfaction of smartphone among university students in China. Result shows P-value is 0.132 and  $\beta$ -value is 0.089 which expressed that H3 is not supported. The result is consistent with [8]'s study, which concluded the security not impact on satisfaction about the smartphone.

H4 indicates that there is a significant influence from social influence towards satisfaction of smartphone among university students in China. Result shows P-value is 0.572 and  $\beta$ -value is -0.038 which expressed that H4 is not supported. There was no impact between social influence to Chinese consumer's purchase intention which is inconsistent with the study by [4].

H5 indicates that there is a significant influence from consumer innovations towards satisfaction of smartphone among university student in China. Result shows P-value is 0.000 and  $\beta$ -value is 0.232

which expressed that H5 is supported. This result is consistent with previous studies as [21], Innovativeness was found to have a significant influence on the purchase of cellular phone. Innovators tended to be those who exhibited a high degree of instrumental and expressive expectations and more frequency of information search.

H6 indicates that consumer's satisfaction positively influences the consumer's purchase intention of smartphone among university student in China. Result shows P-value is 0.000 and  $\beta$ -value is 0.509 which expressed that H6 is supported. This result corresponds to the result of [9] and [8].

## 5. Conclusion

In China the demand of smartphone is rapidly

increase nowadays due to the current technology trend and evolution of innovation of hand phone. Smartphone become a common need to most people. And some factors that affect consumer to purchase smartphone. In this study, the factors which affect purchase intention of smartphone in Chinese consumers have been tested. Through this study, it is improving the understanding of the Chinese consumers purchase intention towards smartphone. Total number of 187 questionnaires was being distributed and the data collected was processed and analyzed using SPSS 18.0. The key results are summarized as below, consumer's satisfaction towards smartphone leads to purchase intention and compatibility and consumer innovations may be important factors influencing the consumers' satisfaction; price, security and social influence are not influencing the consumers' satisfaction. And this study is necessity for companies to make further improvements and used various marketing strategies to boost the sales of smartphone. For compatibility, companies can invent the smartphone that suit best to the lifestyle of Chinese consumers such as by made improvement in the smartphone design. And companies should also constantly developed new products and meet the requirements of consumer innovations. In a word, this research gives a clearer picture of exploring the factors that affecting the purchase intention of smartphone among Chinese consumers.

There are several limitations in this study. First, the samples only collect on one area of the China, which is in Shandong Province, Qingdao City, Qingdao University. and the subjects of the questionnaire of this study were university students, they cannot represent whole Chinese consumers and it could reduce the accuracy and preciseness of the results. Accordingly, future research of greater scale could direct efforts towards construction of a more representative sample. Second, in this research Chinese peculiarly cultural factors were not be included in model. In the future through continuous research the cultural aspects

factors is need to strengthen. And would expand to understanding by Korean consumers especially if the difference of factors influencing purchase intention between Chinese and Korean consumers. Third, there are only five independent variables in this research and there might have other factors which did not take into account. In the future study, we will discuss the other factors that might influence purchase intention of smartphone among Chinese consumers.

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