THE EFFECT OF PRODUCT CHARACTERISTICS RELATIVE ADVANTAGE, COMPATIBILITY AND COMPLEXITY TO THE PURCHASE INTENTIONS OF APPLE IPHONE-5

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ABSTRACT

The needs and tastes of the people rising against telecommunications equipment, most people today are no longer solely require mobile phone as a means of communication, currently public demand for mobile phones are ubiquitous. Responded to the needs of the market, Apple Inc as a pioneer company in the field of software and hardware technology comes with a superior product the iPhone-5. The purpose of this research is to analyze what is the influence of product characteristics to the purchase intentions and to identify which factors of product characteristics such us relative advantage, compatibility and complexity that have most significant influence to the purchase intentions of Apple iPhone-5 in Manado. The research method associate with multiple linear regression analysis technique with 100 respondents as sample of the research taken from people in Manado as consumers of mobile phones. The result showed compatibility or the degree to which potential consumers feel a new product is consistent with their present needs, values, and practices is the most influencing factor to the purchase intention of iPhone-5. Manufacturers and marketers can work to creating products based on consumer needs today both appearance and technology performance.

Keywords: product characteristic, relative advantage, compatibility, complexity, purchase intentions

INTRODUCTION

Consumers make many buying decision every day, Consumer behavior is very influential in the buying decision. All products that are new do not have equal potential for purchase intention. Consumer demands are wants for specific products that are backed by an ability and willingness to buy them. Companies must measure not only how many people want their product but, more importantly, how many would actually be willing and able to buy it. Company influences demand by making the product appropriate, attractive, affordable, and easily available to target consumers.

The Development of the era is now growing rapidly. The uses of sophisticated gadgets were already familiar on the market because it already offers a lot of variety. In the era of globalization, the free market provides opportunities emergence of various types of goods and services with a lot of brands are sold in the market. Needs and tastes of the people rising against telecommunications equipment, most people today are no longer solely require mobile (cell phone) as a means of communication, Currently public demand for mobile phones are ubiquitous. Mobile phone is expected to have advanced features, such as fast internet access as well as entertaining applications. For urban communities in Indonesia, the changing times lead people accessing the Internet.

To answer the needs of the market Apple Inc as a pioneer company in the field of software and hardware technology comes with a superior product the iPhone-5. Iphone-5 provides broad application to facilitate consumer in work and entertainment. IPhone-5 is very popular in many big cities in Indonesia, as well as in Manado. IPhone-5 fits the needs of the market in Manado, simple but elegant, innovative and multifunctional. As stated above, the product characteristics often influence purchase intention. The phenomenon of communication tools in Manado make the researcher interested in analyzing the influence of product characteristics to purchase intention of iPhone-5. There are five characteristics products that seem to

influence consumer acceptance of new products; Relative advantage, compatibility, complexity, trialability and observability Schiffman and Kanuk (2007:523). In this study, the researchers only took three of the degree of product characteristics, namely relative advantage, compatibility and complexity.

Research Objectives

This part describes the objectives that would be achieved through research process and is not in the question form. The objectives of this research are:

1. To analyze the influence of product characteristics to consumer purchase intention of Apple Iphone-5 in Manado partially and simultaneously.
2. To identify which factor of product characteristics that has the most significant influence to consumer purchase intention of Apple Iphone-5 in Manado

THEORETICAL FRAMEWORK

Marketing

Kotler & Keller (2006:32) define marketing is about how to satisfying consumer needs. The marketer develops the products' based on the consumers' needs and wants. Marketing is a process of social and managerial which is the individuals and groups decided what they need and want by exchanging and creating the products and value with the others. Marketing deals with identifying and meeting human and social, in a social definition marketing is a societal process by which individuals and groups obtain what they need and what through creating, offering, and freely exchanging products and services of value with others.

Product Characteristic

Hoyer and Macinnis (2010:406) stated that consumers tend to be susceptible to informational influence when considering complex products such as electronic appliances that consumer cannot easily understand how to use, they are also more susceptible to informational influence when they perceive product purchase or usage to be risky. Schiffman and Kanuk (2007:523) identified five products characteristic that seem to influence consumer acceptance of new products, which are:

1. **Relative Advantage**

   The degree to potential customers perceives a new product as superior to existing substitutes is its relative advantages. For example, although many people carry beepers so that their business offices or families can contact them, a cellular telephone enables users to be in nearly instant communication with the world and allows users to both receive and place calls. If a consumer sees the new product attribute as better than existing ones, it does not necessarily mean that that attribute is actually better. This means that this product characteristic is based on consumer perception.

2. **Compatibility**

   The degree to which potential consumers feel a new product is consistent with their present needs, values, and practices is measure of its compatibility. Compatibility is how the consumer perceives the new product or service into the person's lifestyle choices. When the product or service closely matches the individual's needs, wants, beliefs, values, and consumptions patterns, the innovation can be considered highly compatible with the consumer

3. **Complexity**

   The degree to which a new product is difficult to understand or use, affects product acceptance. Cleary, to easier it is to understand and use a product; the more likely it is to be accepted. The issue of complexity is especially important when attempting to gain market acceptance for high-tech consumer products. If the innovation has a high level of complexity, it will have a lower level of adoption. If the innovation is perceived as being less complex than it has existing counterparts, a marketer can sometimes use the advantage to gain a price premium on the new product or service.

4. **Trialability**

The degree to which a new product is capable of being tried on limited basis. The greater the opportunity to try a new product, the easier it is for consumers to evaluate it and ultimately adopt it. In general, frequently purchased household products tend to have qualities that make trial relatively easy, such as the ability to purchase a small or "trial" size.

5. **Observability**

The ease with which a product's benefits or attribute can be observed, imagined, or described to potential consumers. Products that have a high degree of social visibility, such as fashion item, are more easily diffused than product is promoted more easily than an intangible product (such as a service).

Purchase Intentions

Sandhusen (2000:219) once the alternatives have been evaluated, the consumer is ready to make a purchase decision. Sometimes purchase intention does not result in an actual purchase. The marketing organization must facilitate the consumer to act on their purchase intention. The provision of credit or payment terms may encourage purchase, or a sales promotion such as the opportunity to receive a premium or enter a competition may provide an incentive to buy now.

Previous Research

Jahng, et al. (2006) finds that a fit or congruence between the product type and the ECI richness (in product information representation, and product-related interaction and communication between the consumer and vendor) leads to superior outcomes. Specifically, buying a complex product (e.g., digital camera) on the Web requires a greater ECI richness in the form of experiencing higher social presence and/or higher product presence. Goncalves (2008) found that Colors and shapes are important elements of marketing strategies, and they are both essential features of packages, especially in product labels. Labels are one of the most important features of product packaging, and they are designed to communicate a message. Balaji, et al. (2013) demonstrate that anxiety, which is an affective barrier against using innovative systems, is a key negative predictor of a customer's intentions to use mobile phones. Also, the consumer's self-perception of mobile skillfulness significantly affects anxiety, enjoyment, and usefulness. Durham, et al (2004) analyzed the impact of product characteristics on choice using a quantity-dependent hedonic model with retail panel data. Since panel data for individual products from retail settings can include a large number of zero sales, a modification of the zero-inflated Poisson regression model is proposed for estimation.

Conceptual Framework

This research starts from the theory of product characteristics, which is defined as an attribute or property of the product that describes the product's ability to satisfy its purpose in a larger system. It is divided into 3 types:Relative Advantages, Compatibility, Complexity. Those 3 types of product characteristics are selected to be added in the framework as the independent variable.
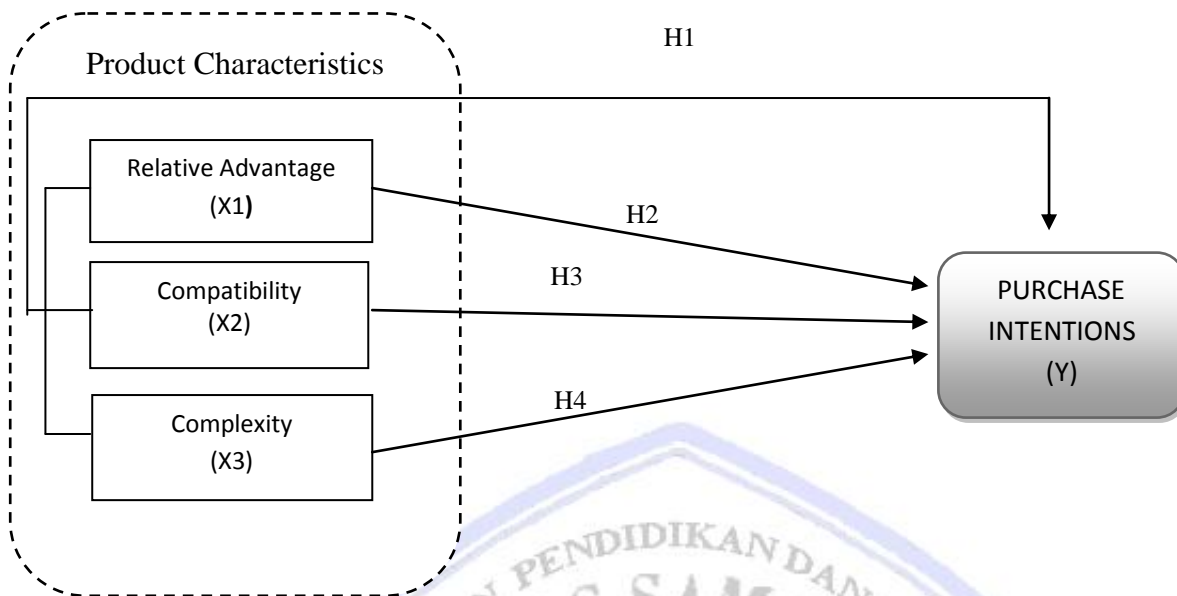
Figure 1. Conceptual Frameworks

Sources: Theoretical Review

RESEARCH METHOD

Type of Research

This research uses causal type of research. This type of research also determines if one variable causes another variable to occur or change. In this research is to investigate the influence of Product Characteristic to Purchase Intentions of Iphone-5

Place and Time of Research

Place of research explains field of research, e.g. company, university, etc. The study was conducted in Manado between November-December 2013.

Population and Sample

Population of this research is people in Manado, North Sulawesi. The random sampling is from the questionnaire survey where the respondents were asked to fill the questionnaire directly. The sampling design is a saturated sample that is considered as the best way of getting some basic information effective and more accurate (Sekaran and Bougie, 2009:263). The sample of this research is the buyers of Apple Iphone-5 and people who understand and interest to this product.

Data Collection Method

Researcher collect the primary data of research by do survey (spread questionnaires) and to collect the secondary data, this research browsed the information through internet, marketing books and marketing journal. Much of primary data collection required for solving marketing problems involves asking questions to respondents and recording their response. To collect primary data, this research does survey by spreading questionnaires to gather information. A questionnaire is a formal framework consisting of a set of questions and scales designed to generate primary raw data.

Data Analysis Method
Validity and Reliability

To analyze the validity of questionnaire, Pearson Product Moment is used. An instrument measure is valid if the instrument measure what ought to be measured. Validity for each variable is good where the values are above minimum level of 0.30. Reliability test is established by testing for both consistency and stability of the answer of questions. Consistency indicates how well the items measuring a concept hang together as a set; Cronbach's alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another (Sekaran and Bougie, 2009:162).

Multiple Regressions Analysis Method

The method of analysis used in this study is multiple regression models to approach the return. Cooper and Schindler (2001:767) define that multiple regression analysis is a technique to observed value of more than one X to estimate or predict corresponding Y value. In order to find out the influence of dependent variable within dependent variables used multiple linear regression with the formula:

$$Y = \text{constant } \alpha + \beta 1 X_1 + \beta 2 X_2 + \beta 2 X_3 e$$

Where:

Y	= *Purchase Intention*
X_1	= *Relative Advantage*
X_2	=*Compatibility*
X_3	=*Complexity*
α	= *The constant, equal to 0*
β	= *Regression coefficient*
e	= *error*

RESULT AND DISCUSSION

Result
Demographic Analysis

The researcher finds it is important to observe the demographic analysis of the research. Firstly, by looking at the gender analysis, the number of respondents in this research was 55% female and 45% male. Males were inclined to have a more favourable attitude than females. This is because of the fact that males were inclined to consider quality over aesthetics in their buying decisions. Women will choose price over quality when they find the goods have similar functions.

The age demographic, most of the respondents were at the range of age which is considered productive, less than 20 years old and 20-40 years old. Then followed by the the age of 31- 40 years old, 41 – 50 years old and above 50 years old. It proves the research findings that age has no significant effect on purchase intention of Iphone-5 in Manado. Next is the education level. 33% are above S1 graduates, which is a high number. And then followed by S1 graduates with 27%. The rest 24% is Diploma-1 / Diploma-3 graduates and 16% is high school graduates. Then the occupation, this classification is divided into six classes. Entrepreneurs contributes the highest percentage which is 30%, followed by Private Employees which is 25%, and then College Student which is 17%, Civil Servant which is 13%, Student which is 10% and the lowest percentage of respondents come from "Others" which is only 5%.

Income per month, the respondents are divided into four classes. The highest percentage 47% derived from income Rp. 1,000,000 – 2,500,000; followed by income Rp. 2,500,000 – 5,000,000 which is 22%; and then income Rp. < 1,000,000 which is 19%; and the lowest percentage of respondents comes from income Rp. > 5,000,000 which is only 12%. This data also proves the research finding that the higher income, the less people would want to buy counterfeit goods.Classification is based on period of using Apple Iphone-5 in Manado are divided into four classes. Using Apple Iphone-5 in period 3-6 months contributes the highest percentage which

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is 35%, followed by < 3 months which is 30%, and then 6-12 months which is 20% the lowest percentage of respondents come from period > 1 year which is only 15%. Next is based on reason of using Apple Iphone-5 in Manado. This classification is divided into five classes. The highest reason of using Apple Iphone-5 Manado because of Trend that is 30%, Usefulness is 25%, Quality is 20%, Style is 15% and the lowest percentage of respondents come Recommended by Friends which is 10%. This data proves the research finding that the lifestyle of people in Manado who always follow the trend very influential on purchase intention of Apple Iphone-5. Consequently, in general, the researcher believes that analysis of the demographic characteristics can explain the research findings of the influential factors and the ones insignificant to the decision making process.

Validity and Reliability

The result of reliability is acceptable because the Alpha Cronbach coefficient has a value of 0.868; it proves that the data is up to standard moreover it indicates good internal that the data result is reliable and can move forward to the next step. The validity for each variable is good where the values are above minimum level of 0.30. It means that all independent variables in are above the minimum.

Multiple Regression Analysis

Table 2. Multiple Regression Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.354	.197		-1.798	.075
Relative Advantage	.365	.039	.422	9.321	.000
Compatibility	.390	.052	.352	7.499	.000
Complexity	.348	. 050	.364	6.929	.000

a. Dependent Variable : Purchase Intention
   Source: SPSS data processed 2014.

Multiple Linear Regression model is used to determine the effect of several independent variables on a dependent variable. The computation was done by using the IBM SPSS 22.0 software. The computerized calculation ensures the accuracy of the analysis. From the result in the table 2, the model is defines as:

$$Y = 0.354 + 0.365 x_1 + 0.390 x_2 + 0.348 x_3$$

1. Constant (b_0) 0.354 shows the effect of relationship between Relative Advantage (X_1), Compatibility (X_2), Complexity (X_3) to the Purchase Intention (Y). If all independent variables are equal to zero then the purchase intention (Y) is predicted to be 0.354.
2. Consider other variables are constant or equal to zero, if there is one unit increasing in X_1 (Relative Advantage) then the purchase intention (Y) will increase 0.365.
3. Consider other variables are constant or equal to zero, if there is one unit increasing in X_2 (Compatibility) then the purchase intention (Y) will increase 0.390.
4. Consider other variables are constant or equal to zero, if there is one unit increasing in X_3 (Complexity) then the purchase intention (Y) will increase 0.348.

Multiple Coefficient of Determination (R^2)

Table 3. Table R and R^2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.929[a]	0.863	0.859	0.203

a. (Constant), Purchase Intention
   Source: SPSS data processed, 2014.

Coefficient of determination is used to show the percentage of variability in Y that can be explained by regression equation (Newbold, et al, 2003;387). The coefficient of determination (R^2) of 0.863 shows that the linear relationship in this model is able to explain the purchase intention (Y) for 86.3% while the rest 13.7% is explained by other factors not discussed in this research.

F-Test

F test is used to determine the whole effect of all independent variables to dependent variable. This test is done by comparing the f_{count} with f_{table}. If f_{count} is higher than f_{table}, H_0 is rejected and H_1 is accepted.

Table 4. F-test Result

Model	Sum of squares	Df	Mean Square	F	Sig.
1 Regression	25.036	3	8.345	202.254	.000 [a]
Residual	3.961	96	.041		
Total	28.998	99			

a.   Predictors: (Constant), Purchase Intentions
b.   Dependent Variable: Relative advantage, compatibility, complexity
       Source: SPSS data processed, 2014.

The level of significant of 0.05 ($\alpha = 0.05$) and degree of freedom (df) of 4; 95, the f_{table} from F distribution table is $f_{4; 95; 0.05} = 2.467$, while f_{count} from Table 4 is 59.746. The result is $f_{count} > F_{table} = 202.254 > 2.467$. Since the f_{count} is greater than f_{table}, H_0 is rejected and H_1 is accepted. So, it obviously shows that there is linear relationship in this multiple regression model. Based from the F-test result, is obtained that $f_{count} > f_{table} = = 202.254 > 2.467$. It is absolutely describe that independent variable simultaneously influences the dependent variable. Therefore, hypothesis 1 is accepted.

T-Test

T-test is used to determine the partial effect of each independent variable to dependent variable. T-test value is obtained by comparing value of t_{count} with t_{able}. If t_{count} is higher than t_{table}, then H_0 is rejected and H_1 is accepted. The values of each variable are shown on the table 5 below.

Table 5. T-Test Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.354	.197		1.798	.075
Relative Advantage	.365	.039	.422	9.321	.000
Compatibility	.390	.052	.352	7.499	.000
Complexity	.348	. 050	.364	6.929	.000

a.   Dependent Variable : Purchase Intentions
       Source: SPSS data processed, 2014.

The partial influence for each independent variable will be explained as follows.
1. Relative Advantage (X_1) to Purchase Intention (Y)
    Reject H_0 if $t_{count} > t_{table}$ or Accept H_0 if $t_{count} < t_{table}$ on Table 5 t_{count} of Reference Group is 4.284. Since there is a level of significant 5%, then the t_{table} will be $t_{95; 0.05} = 2.2771$. Comparing the t_{count} with t_{table} : $9.321 > 2.2771$
    Since the t_{count} is greater than t_{table}, H_0 is rejected and H_1 is accepted. Thus, reference group has significant effect to customer's purchase intention to luxury brands.
2. Compatibility (X_3) to Purchase Intention (Y)
    Reject H_0 if $t_{count} > t_{table}$ or Accept if $t_{count} < t_{table}$

on Table 5 t_{count} of Compatibility is 3.188. Since there is a level of significant 5%, then the t_{table} will be $t_{95;\ 0.05}$ = 2.2771. Comparing the t_{count} with t_{table} : 7.499 > 2.2771

Since the t_{count} is greater than t_{table}, H_0 is rejected and H_1 is accepted. Thus, family has significant effect to customer's purchase intention.

3. Complexity (X_3) to Purchase Intention (Y)

Reject H_0 if $t_{count} > t_{table}$ or Accept if $t_{count} < t_{table}$

on Table 5 t_{count} of Complexity is 7.961Since there is a level of significant 5%, then the t_{table} will be $t_{95;\ 0.05}$ = 2.2771. Comparing the t_{count} with t_{table} : 6.929 > 2.2771

Since the t_{count} is greater than t_{table}, H_0 is rejected and H_1 is accepted. Thus, roles and status has significant effect to customer's purchase intention.

From the explanation above, it describes that all variables such as relative advantage (X_1), compatibility (X_2), and complexity (X_3) influence purchase intention (Y) partially. After analyzing by the T test, it can be concluded that all variables were accepted. Therefore, hypothesis 2 is accepted.

Discussion

The research result clarifies that there are some factors that influence the purchasing of Apple Iphone-5 in Manado. F-Test result demonstrates that there is a linear relationship in this multiple regression model. It is described that independent variables (relative advantage, compatibility and complexity) simultaneously influences the purchase intention as dependent variable. Compelxity, relative advantage and compatibility are all factors which influence Purchase Intention on purchasing Iphone-5 in Manado. The result of T-test shows that all the independent variables have significant influence to purchase Intention.

Compatibility is the most influential factor on purchase intentions of Apple Iphone-5. The influence is significant. Compatibility is how the consumer perceives the new product or service into the person's lifestyle choices, when the product or service closely matches the individual's needs, wants, beliefs, values, and consumptions patterns, the innovation can be considered highly compatible with the consumer. People in Manado as respondent in this research have looked Iphone-5 as a product that is able to support them in communicating and lifestyle. With the increasing mobility in the surf, or in this case social media such as twitter, facebook, path and instagram, Iphone-5 is considered able to support these activities. The style and look of the Iphone-5 is very suitable to consumers, simple yet elegant. This research has a same result with by Goncalves (2008) consumer will attracted to product that matches with their values.

Another independent variable of this research relative advantage. This is extremely influence to the dependent variable. The reason behind these results is the people in Manado as the object of this study considers Iphone-5 is a breakthrough product from Apple Company. In line with the theory, relative advantage effect is the extent to the which a given consumer sees a certain attribute of a new product or service to be better than the similar attributes of existing products or services Iphone-5 is equipped with the latest technology, both hardware and software, in fact the reputation of Iphone-5 from the perspective of the respondent well ahead from the another competitors in the Smartphone business. Iphone-5 with IOS, ITunes, SiRi, retina display and become a favorite part for customers and prospective buyers in Manado.

The last variable effect on purchase intentions is complexity. Complexity can be interpreted whether a product as an innovation is considered difficult to understand or use. The most obvious reason why people buy Iphone-5 is because the advantages of the product. Jahng, et al. (2006) stated product that easy to used will easy to approach consumer. Complexity is the Most Influential because no matter what kind of gander the people have, how old, and however their education and occupation if the product is easier to understand and use, the more likely it is to be accepted.

CONCLUSION AND RECOMMENDATION

Conclusion

The final conclusions of this research are:

1. All independent variables (relative advantage, compatibility and complexity) are simultaneously influence Purchase Intention of Iphone-5 in Manado as dependent variable.
2. Compatibility has the most influencing factor to the purchase intention of Iphone-5 in Manado
3. Relative Advantage has a significant effect to purchase Intention partially.
4. Complexity has a significant effect to purchase Intention partially.

Recommendation

The result found that compatibility is the most influencing factors to purchase intention of Iphone-5 in Manado, and then followed by relative advantage. These result means the complexity that offered by Iphone-5 suitable with wath people in Manado want. Compatibility is the most influential because when the product or service closely matches the individual's needs, wants, beliefs, values, and consumptions patterns, the innovation can be considered highly compatible with the consumer, the more likely it is to be accepted. Manufacturers and marketers can work to change consumer behavior through shaping attitudes with some strategies, such as: Creating products based on consumer needs today. Both appearance, technology performance, and of course style, provide a more affordable price, so make it more easily accessible for people in Manado. Products that are easier to use, will support the customer's interest in making a purchase.

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