



## Impact of Product Knowledge and Product Characteristics on Consumers' Purchase Decision of Laptop Computers among Students of Ekiti State University, Ado Ekiti

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### Abstract

The study to examine the impact of product knowledge and product characteristics on consumers' purchase decision of laptop computers among students of Ekiti State University. However the specific objectives of the research are to examine the impact of product knowledge; product characteristics; product familiarity and perceived product quality influence consumers' purchase decision of laptop computers among students in Ekiti State University. The population of this study was 13,753 full time undergraduate students of Ekiti State University. The sample size is 390 respondents using stratified sampling techniques. Data gathered were sorted, coded, and analysed using descriptive and inferential statistics. The descriptive statistics were mainly frequency table. Inferential statistics used was regression analysis. The result showed that product knowledge ( $t = 12.373$ ,  $p = 000 < 0.05$ ); product characteristics ( $t = 4.750$ ,  $p = 000 < 0.05$ ); product familiarity ( $t = 14.235$ ;  $p = 000 < 0.05$ ) and product knowledge ( $t = 1.449$ ;  $p = 0.148 > 0.05$ ). The results showed that product familiarity and product knowledge has moderate positive impact on consumer purchase decision than does product characteristics and perceived product quality influence on consumer purchase decision. The study concluded that product familiarity is the most potent motivating factors influencing consumers' choice of brand of laptop computers meaning that the student purchase their laptop computers base on the familiar product.

**Keywords:** Product knowledge, product characteristics, consumer purchase, product familiarity, perceived product quality

## **Introduction**

The key to successful adoption of laptop technology is to ensure that students remained academically engaged with the device on a regular basis so that they become accustomed to its use (Mang & Wardley, 2012). Newby (2000) asserts that a large, highly ranked public University implemented a requirement for all incoming undergraduates to own laptop computers. According to Sharma (2012), the need for anytime-anywhere access to information is pushing laptops demand in the market due to their convenience in terms of portability, flexibility and adaptability. In every field of life like, hospitality, railways, metro trains, corporate houses, academics, professionals etc, we have found the use of laptop computers for different purposes. Laptops are current day demands that simplify work and live as well. It contributes towards the upliftment of performance, work easiness by introducing the home office concept and provides a creative insight for the work. Students are one of the considerable populations of laptop consumers. Students like to use new technologies and need portable computers because of their preference in more details (Behzadian, Aghdale, & Razavi, 2011). Critical thinking, research, and evaluation skills are growing in importance as students have increasing volumes of information from a variety of sources to sort through, particularly in courses that are entirely electronic, students are much more independent than in the traditional setting (Jethro, Grace & Thomas, 2012).

According to Jethro, Grace and Thomas (2012), E-Learning involves the use of computer (laptop/desktop) with other internet technologies to deliver abroad array of solutions that enhance knowledge and performances. Laptop technology has made learning easy among medical educators to improve the efficiency and effectiveness of educational interventions in the face of the social and science. Laptop has gained popularity in the past decades, however, its use is highly variable among medical schools and it appears to be more common in basic science courses than clinical clerkship. Learning enhancement permits greater learner interactivity and promotes learners' efficiency, motivation, cognitive, effectiveness, and flexibility of learning style (Jethro, Grace & Thomas, 2012).

Consumer purchase decision is the decision making process used by consumers relating to a market deal in form of purchase of products and services from seller or group of sellers consumers go through different decision criteria when making any purchase decision like brand, prices, quality, performance, features, convenience and user friendliness (Immran, Tauqir & Salman, 2012). According to Robin, Adesoji and Kimberly (1993), consumer preference and tastes are key factors affecting consumer purchase decision. Franz, Tobias, Bernd and Patrick (2006), opined that the knowledge about the product has a direct influence on consumer purchase decision. Shariq, Raza, and Zin-ur-Rahamman (2011), said that in marketing a purchase of any product, customers often rely on personal memory/ knowledge to make decision. Li, Tsai and Fu (2006), elucidated that consumer psychology perception openly reflects consumer viewpoints on product knowledge and consumer knowledge of a product can help consumers to make their decision effectively. Kerr, Kline, Hobbs and Kagatsume (1994) noted that the first steps in understanding any market, consumer must be able to identify product characteristics because product characteristics that are valued in one region may or may not be valued elsewhere. Products constitute an array of knowledge about content and characteristics that consumers use to determine product quality (Miyazaki, Grewai, & Goodstein, 2005). Olson and Jacoby (1972) asserted that intrinsic attributes cannot be changed without altering the nature of the product itself and are consumed as the consumed extrinsic cues are product-related but not part of the physical product itself. By definition, they are outside the product. Peter and Olson (2004), the key process in consumers' decision making is the integration process by which knowledge is combining to evaluate two or more alternative behaviour and select one. From the analogy, it is

obvious that the behavioural purchase decision of students may not likely be the same in all organizations across the globe.

Despite this growth of scholarly publications on product knowledge and product characteristics, little empirical evidence exists in developing countries especially in Nigeria. To bridge this gap in literature, this study examines the relationship between product knowledge and product characteristics on consumer purchase decision among students of Ekiti State University, Ado Ekiti, Nigeria.

Laptop is playing dominant role among students, couple with the rapid development in IT sector accompanied by increased competition in the market has lead both academicians and practioners to concentrate on the consumers' purchase decisions in portable personal computer industry. However, studies that relate product knowledge and product characheristics on consumer purchase decision in Nigeria institutions are not readily available. Also, studies that cover these variables of product knowledge and product characteristics among students of high institutions in Nigeria particularly the student of Ekiti State University, Ado Ekiti, do not seem to exist readily to researcher. With pontentials growth in student population in Ekiti State, marketers' needs empirical evidence of the impact of product knowledge and product characteristics on consumer purchase decision that can help them to strategically reach prospective consumers. Hence, this study will investigate the relationship between product knowledge and product characteristics, product familiarity and product perceived quality of students purchase decision. These variables are not readily available in the Nigeria context, hence the need to carry out a study of this nature.

The broad objective of this research is to examine the impact of product knowledge and product characteristics on consumers' purchase decision of laptop computers among students of Ekiti State University. However the specific objectives of the research are to product knowledge; product characteristics; product familiarity and perceived product quality influence consumers' purchase decision of laptop computers among students in Ekiti State University.

## **Literature Review**

### **Product Defined**

Rapid technological advances in the last decades have sparked educational practitioners' interest in utilizing laptops as instructional tools to improve students learning. There is substantial evidence that using technology as an instructional tool enhances student learning and educational outcomes Tella and Kosoko-Oyedeko (2013). Warschauer and Grimes (2005) asserted that laptops are used in a wide range of ways but overall teachers use the laptops mainly in the teaching-learning process, preparing and planning of lessons, and in finding resources. Continuous use of laptops do substantially increase competency in handling the ICT equipment. Khambari, Moses and Luan (2009), emphasized that laptop ownership gives users access to range of resources primarily from the Internet.

### **Product knowledge**

Biswas and Sherrell (1993), conceptually defined product knowledge as information about functional attributes of products and about brand differences on attributes. In relation to consumer knowledge, Engel, Blackwell, and Miniard (1995), defined consumer knowledge as information relating to the products and to the brands which are stored in the memory of the

consumer. Consumer knowledge is seen as consisting of networks of associations (Anderson, 1983; Keller, 1993). It influences how consumers gather and organize information, and ultimately, what products they buy and how they use them. It is believed that consumer knowledge is made up of two complementary dimensions; familiarity (sometimes called experience) and expertise (Alba and Hutchinson, 1987; Jacoby, Troutman, Kuss, & Mazursky, 1986). Iwarere and Fakokunde (2011) asserted that it is difficult for consumer to evaluate the quality of services than quality of products due to certain distinctive characteristics of services such as intangibility, variability, perishability and inseparability. Sunday et al., (2009) opined that it is imperatively difficult for a buyer to perceive favourable impact of a product at the first sight of the product without initial trial that may lead to subsequent decision and that Buyer or customer needs series of information processing regarding the physical configuration, quality and value of product.

### **Product Characteristics**

Characteristics are the stream of services, provided by a good / services, which the buyer consumes over the lifetime of the purchased product (Lancaster 1971). Kerr, Kline, Hobs, and Kagatsume (1994), noted that “the first step in understanding any market must be the identification of those product characteristics that are desired by consumer”. With respect to products, the characteristics approach is commonly used to analyze and categorize different types of product innovation. A product is described in terms of a list of features or characteristics’ (Swann, 2009). Lancaster (1971) observed that all types of products (both manufactured goods and immaterial services) can be described by the bundle of attributes or ‘intrinsic characteristics’ which they embody.

Zeithaml (1988), product characteristics as intrinsic product cues are one of the most important factors consumers consider when evaluating a product before purchasing. Veale and Quester (2009) elucidated that consumers evaluate products after and before experiencing it through intrinsic and extrinsic cues. Intrinsic cues is any product characteristics which are related to the nature of good and extrinsic cues are those which can change and are not related to the inherent of the product such as; price and country of origin.

### **Product Familiarity**

Korchia (2001) argued that a great number of articles published in consumer behaviour relate to knowledge of products, and not of brands. And that there should not be any obstacle to adapt the concepts or definitions suggested for categories of products in the case of brands. Korchia (2001) said that in variety of studies, product familiarity has been used interchangeably with other constructs including subjective knowledge and consumer expertise, or some combination of the above, also as function of product experience, familiarity has been equated most frequently with product purchase, possession, and usage. The familiarity of the consumer with a product or service is a field of analysis that has attracted the attention of marketing researchers for a number of decades (Johnson & Russo, 1994; Desai & Hoyer, 2000). Alba and Hutchinson (1987), defined product familiarity as the direct and indirect experiences with the product category that has been accumulated by consumer. They also see familiarity as “the number of product-related experiences accumulated by the consumer”. In addition, Veryzer (1998) affirmed that unfamiliarity with a new product leads to consumers’ resistance to the product. Also, Charon and Hayashi (2001), defined familiarity as a composite measure of cognitive and behavioural experience. It has been reported that familiarity interacts with or even directly affect attitude, preference and choice of a product or service.

### Perceived Product Quality

Perceived quality has been defined as the consumer's judgment about a product's overall excellence or superiority, and that perceived quality differs from objective quality (Tsiotsou, 2006). Perceived product quality is a global assessment characterized by a high abstraction level and is refers to a specific consumption setting (Zenithmal, 1988). Objective quality refers to the actual technical excellence of the product that can be verified and measured (Monroe & Krishman, 1985) cited in Tsiotsou (2006). Perceived product quality act as a mediator between extrinsic cues and perceived customer value (Dodds, Monroe, & Grewal, 1991). Perceived quality is a critical element for consumer decision making; consequently, consumers will compare the quality of alternatives with regard to price within a category (Jin & Young, 2005). Davis, Aquilano and Chase (2003) cited in Yee, San, and Khoon (2011), opined that perceived quality is directly related to the reputation of the firm that manufactures the product. However, National Quality Research Center (1995), cited in Yee, et al., (2011), defined perceived quality as the degree to which a product or service provides key customer requirements (customization) and how reliable these requirements are delivered (reliability). Yee, et al., (2011), argued that consumers often judge the quality of a product or service on the basis of a variety of informational cues that they associated with the product. Zeithaml (1988) listed the perceived product qualities to include the product itself, product's performance, features reliability, conformance, durability, serviceability and aesthetics while extrinsic attributes are the cues that are external to the products itself, such as price, brand image, company reputation, manufacturer's image, retail store image and the country of origin. Perceived quality has direct impact on customer purchase decision and brand loyalty, especially during the time customers have less or no information of the products that they are going to purchase (Aaker, 1991; Armstrong & Kotler, 2003).

### Concept of Purchase Decision

According to Peter and Olson (2004), the key process in consumers' decision making is the integration process by which knowledge is combining to evaluate two or more alternative behaviour and select one. Most of the large companies are researching into consumer buying decision in increasing detail to answer questions about what consumer buys; where they buy; how and how much they buy; when they buy and why they buy (Kotler, Armstrong, Swee, Siew, & Chin, 2005). There are seven stages of the consumer buying decision process which are; need recognition; search for information; pre-purchase evaluation alternative; purchase; consumption; post-consumption evaluation; and divestment (Blackwell, Miniard, & Engel, 2006). Purchase decision is the fourth stage in consumer buying process in the consumer decision making process model and a purchase or intent to purchase is often influenced by other factors such as risk and involvement (Blackwell *et al.*, 2006).

### Research Method

The study employed descriptive survey design. The population of this study was 13,753 full time undergraduate students of Ekiti State University. This cut across all the different Faculties and College of Medicine of the University as at 2013 session. The sample size for study was derived using the Yamane (1967) model, cited in Israel (2009) and commonly called the Taro model. The model was given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where n = anticipated total sample size; N = population size  
e = degree of significance (0.05)

Therefore, the total sample size shall be computed as:

$$n = \frac{13753}{1 + 13753(0.05)^2} = 390$$

From the above, the sample size will be 390 respondents.

This research adopted stratified sampling technique. For each of the Faculty, the following formula was adopted to estimate the number of possible respondents, thus:

$$n = n^1 N^1 / N$$

Where  $n$  = sample size for each Faculty

$n^1$  = total sample size

$N^1$  = population of the Faculty

$N$  = total population

An interpretation of this formula is number of students in each faculty ( $N$ ), divided by the total population ( $N^1$ ) and then multiplied by the total sample size ( $n^1$ ).

Therefore, sample size for Faculty of Agricultural Science

$$N_{Agric.} = \frac{(390)(559)}{13,753} = 15$$

Sample size for Faculty of Arts

$$N_{Arts} = \frac{(390)(2196)}{13,753} = 62$$

Sample size for Faculty of College of Medicine

$$N_{CMed.} = \frac{(390)(127)}{13,753} = 4$$

Sample size for Faculty of Education

$$N_{Edu} = \frac{(390)(3518)}{13,753} = 100$$

Sample size for Faculty of Engineering

$$N_{Engr.} = \frac{(390)(592)}{13,753} = 17$$

Sample size for Faculty of Law

$$N_{Law.} = \frac{(390)(131)}{13,753} = 4$$

Sample size for Faculty of Management Sciences

$$N_{Mgt.Sc.} = \frac{(390)(2024)}{13,753} = 57$$

Sample size for Faculty of Sciences

$$N_{Sci.} = \frac{(390)(2748)}{13,753} = 78$$

Sample size for Faculty of the Social Sciences

$$N_{Soc.Sci.} = \frac{(390)(1858)}{13,753} = 53$$

**Table 1: Reliabilty co-efficient of adopted instruments**

S/No	Measurement	No of Items	Cronbach Alpha
Product Knowledge	Product Knowledge Scale	5	.975
Product Characteristics	Product Characteristics Scale	20	.994
Product Familiarity	Scale for Product Familiarity	5	.980
Perceived Product Quality	Perceived Product Quality Scale	2	.956
Consumer Purchase Decision	Purchase Decision Involvement Scale	4	.979

*Source: field survey (2015)*

### Method of Data Analysis

Data gathered were sorted, coded, and analysed using descriptive and inferential statistics. The descriptive statistics were mainly frequency table. Inferential statistics used was regression analysis. Multiple regression analyses were used to examine the impact of product knowledge; product familiarity and perceived product quality on consumers' purchase decision of laptop computers among students in Ekiti State University.

### Results and Discussion

To test for multiple regression of the five variables. The respondents' scores on five variables, product knowledge, product characteristics, product familiarity, perceived product quality (independent) and consumers' purchase decision (dependent) were computed and subjected into multiple regression analysis. The results shown on the Table 1. In Table 1, the results of the analysis was found to be significant ( $r = 0.968$ ) showing that product knowledge, product characteristics, product familiarity, and perceived product quality positively influences consumers' purchase decision of laptop computers among student of Ekiti State University. That is students quest to buy laptop computers are influenced by product knowledge, product characteristics, product familiarity, perceived product quality. Adjusted r- square showed that product knowledge, product characteristics, product familiarity, perceived product quality caused 93.7% variance of consumers' purchase decision of laptop computers Students. In other words, an estimated 0.937 of consumer purchase decision of laptop computers is accounted by independent variables, product knowledge, product characteristics, product familiarity, perceived product quality. The result means that we reject the null hypothesis and accept the alternate hypothesis.

In Table 2, the unstandardised and standard beta co-efficient of product knowledge are 0.373 and 0.399 respectively with  $t = 12.373$  and ( $p = 000 < 0.05$ ). The unstandardised and standard beta co-efficient of product characteristics are 0.130 and 0.130 with  $t = 4.750$  and ( $p = 000 < 0.05$ ). The unstandardised and standard beta co-efficient of product familiarity are 0.468 and 0.446 respectively with  $t = 14.235$  and ( $p = 000 < 0.05$ ). The unstandardised and standard beta co-efficient of product knowledge are 0.30 and 0.032 respectively with  $t = 1.449$  and ( $p = 0.148 > 0.05$ ). The results showed that product familiarity and product knowledge has moderate positive impact on consumer purchase decision than does product characteristics and perceived product quality influence on consumer purchase decision. The results also showed that even though perceived product quality has a positive influence, it is not significant. This means that respondents' reason for purchasing laptop computers is not strongly influenced by perceived product quality.

The multiple regression analysis is shown as:

$$CPD = 0.049_0 + 0.373Pk + 0.130Pc + 0.458Pf + 0.03Ppq$$

(Where CPD = Consumer purchase decision; Pk = Product knowledge; Pc = Product characteristics; Pf = Product familiarity; and Ppq = Perceived product quality)

**Table 2: Product Knowledge, Product Characteristics, Product Familiarity, Perceived Product Quality and Consumers' Purchase Decision of Laptop Computers among Student**

Variables	Coeff.	Std. Error	t-value	Sig. value
Constant	.049	.035	1.385	0.167
Product Knowledge	.373	.031	12.152	0.000
Perceived Product Quality	.030	.021	1.449	0.148
Product Familiarity	.458	.032	14.235	0.000
Product Characteristics	.130	.027	12.431	0.000
R	.968			
R Square	.937			
Adj. R <sup>2</sup>	.937			
F Stat.	1968.356(.000)			

Dependent Variable: Consumers' Purchase Decision

### Discussion of findings

The first states that product knowledge has no significant impact on consumers' decision to purchase laptops among students in Ekiti State University. The score was computed using items in research instrument (questionnaire). This score was subjected to statistical analysis using regression analysis. The result showed that there is a moderate and positive relationship between product knowledge and consumers' decision to purchase laptops among students in Ekiti State University. The null hypothesis was rejected while the alternative hypothesis was accepted. This implies that product knowledge has significant impact on consumers' decision to purchase laptops with r-square ( $r^2$ ) which was found to be 0.044 showing the strength of relationship between that is 4.4%. This study is in line with the findings of Chandon, et al. (2005) which that showed the reactive effect of the measurement of purchase intentions is entirely mediated by self-generated validity and not by social norms, intention modification, or other measurement effects that are independent of pre-survey latent intentions. Lee et al. (2009) concluded that consumer product knowledge also has a positive impact on purchase decision, consumer information search intention and consumer purchase intention; and that product knowledge is an important



parameter that has effect on decision making of consumer. Lin and Chen (2006) indicated in their study that the country of origin image, product knowledge and product involvement all has a significantly positive effect on consumer purchase decision under different product involvement.

The second stated that product characteristics do not have any significant influence on consumers' decision to purchase laptops among students in Ekiti State University. The score was computed using items in research instrument (questionnaire). This score was subjected to statistical analysis using regression analysis. The result showed that there is a moderate and positive relationship between product knowledge and consumers' decision to purchase laptops among students in Ekiti State University. The null hypothesis was rejected while the alternative hypothesis was accepted. This implies that product characteristics has significant influence on consumers' decision to purchase laptops with r-square ( $r^2$ ) which was found to be 0.075 showing the strength of relationship between that is 7.5%. The findings of Sharma (2012) revealed that students found themselves connected with the entire world with the help of laptops and by means of this they contribute a lot for nation's development. The findings are also in line with Johnson and Russo (1984) that revealed highly familiar subjects are also taught to develop experts. Product use and knowledge may be related, and however, experimentally each variable may have a different impact on the consumers' information search strategies. Zaichkowsky (1985) further revealed that generally involvement and product use are correlated.

The third stated that Product familiarity do not have any significant impact on consumers' decision to purchase laptops among students in Ekiti State University. The score was computed using items in research instrument (questionnaire). This score was subjected to statistical analysis using regression analysis. The result showed that there is a moderate and positive relationship between product familiarity and consumers' decision to purchase laptops among students in Ekiti State University. The null hypothesis was rejected while the alternative hypothesis was accepted. This implies that product familiarity has significant influence on consumers' decision to purchase laptops with r-square ( $r^2$ ) which was found to be 0.073 showing the strength of relationship between that is 7.3%. Likewise the work of Khan, Ghari and Majeed (2012) revealed that all brand related factors show positive relationship with purchase intention of customers and that companies should improved their brand related attributes to increase purchase decision of customer, which is key to their value generation.

The four stated that Perceived product quality does not have any significant influence on consumers' purchase decision of laptop among students of Ekiti State University. The score was computed using items in research instrument (questionnaire). This score was subjected to statistical analysis using regression analysis. The result showed that there is a moderate and positive relationship between perceived product quality and consumers' decision to purchase laptops among students in Ekiti State University. The null hypothesis was rejected while the alternative hypothesis was accepted. This implies that perceived product quality has significant influence on consumers' decision to purchase laptops with r-square ( $r^2$ ) which was found to be 0.065 showing the strength of relationship between that is 6.5%. The findings of Shaharudin, et al. (2011) stated that consumer perception does not have significant impact on consumer purchase decision which is reversed related with finding. Shaharudin, et al. (2011) further revealed that customers are looking at other elements beyond quality perceptions on their purchase decision and only they understand what they are actually looking for while Iwarere and Fakokunde (2011) in Nigeria revealed further that customers' are insatiable and in most cases, purchase decisions are highly dependent on their perception of service quality.

## **Conclusion**

The study concluded that consumer knowledge through subjective and objective knowledge stimulate the consumers level of awareness, and subsequent recognition of preferred laptop computers in terms of product characteristics, outward appearance and technical value among competing brands.

Finally, consumers' purchase decision is greatly influenced by the product knowledge of the quality. Product characteristics has a significant influence on consumers' purchase decision, hence, there exist a high and close relationship among product knowledge, product characteristics, product familiarity perceived product consumer purchase decision.

## **Recommendations**

Consequent on the study result and findings, the researcher suggests the following recommendations are made to the consumers' of laptop computers and the manufacturers in tertiary institutions, interested in purchasing laptop computer and marketers of the products:

- i. Marketers of laptop computers and companies should be aware of the level of product knowledge and product characteristics of their prospective consumers so that if the product is bought the tendency of hardware crashing will be reduce to bearest minimum.
- ii. Manufacturers should continue to invest in technologies through reconstruction, development and in to create differentiation in terms ram size, battery back time, hard disk size and to guarantee the utmost confidence of consumers in purchasing laptop computers.
- iii. The product knowledge and product characteristics show a positive significant relationship on consumers purchase decision this is an advantage to marketers' to continue to educate the consumers about the newly added functionality of the product.
- iv. The significant relationship between knowledge and characteristics of product such as price processor speed, processor type, ram size, weight, battery backup time, hard disk size, power supply influenced purchase decision of laptop computers, the marketers of this product should design laptop computerd that will match students lifestyle, that is laptop computers that can help students achieve their academic pursuit with such as having lang lasting battery backup time, functions easy browsing, bigger capacity of ram size and hard disk size.

## **Suggestions for Further Research**

The study was limited to students in Ado Ekiti, southwestern, Nigeria, similar studies could be conducted in other part of country to verify the findings on impact of product knowledge and product characterists on consumers' purchase decision of laptop computer. Secondly, further studies of this nature could be carried out on related variables in other organisation apart from academic arena. The variables that are product knowledge, product characteristics, product familiarity, perceived product quality be independent variables could be study individually on consumer purchase decision.

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