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# Effects of Warranty on Purchase Decision of Electronic Products: An Empirical Research from the Perspective of Bangladesh

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## Abstract

Warranty can be defined as a part of the common law system that states and assures the consumers that a product or service is fit for the purpose for which it is sold. This study focuses on effects of warranty in the purchase decision of electronic products in Bangladesh. After conducting an effective exploratory research to gain initial idea and knowledge, the study proceeded further to draw a conclusion about the research topic. Through the convenience sample selection process, 100 samples were selected from the target population. The literature review elaborated and explained about the past and recent research works on the product warranty in different countries on different samples. The questionnaire consisted of 33 questions under eight key variables including Service Provider's Accountability, Reliability of Product, Long Term Warranty, Short Term Warranty, Branded Product, Non-branded Product, Country of Origin and Risk Reliever. The regression analysis was used here for the analysis of the data. Finally it is concluded that six factors out of eight have an impact over purchase decision of the consumers of electronic products.

**Keywords:** Warranty, Short Term Warranty, Long Term Warranty, Reliability of the Product, Branded Product, Non Branded Product, Purchase Decision.

## 1. Introduction

Product warranty is an important part of the marketing and sales program of new products. In the purchase decision of a product, buyers typically compare characteristics of comparable models of competing brands. When competing brands are nearly identical, it is very difficult, in many instances, to choose a particular product solely on the basis of the product-related characteristics such as price, special features, perceived product quality and reliability, financing offered by the manufacturer, and so on. In such situations, post-sale factors—warranty, parts availability and cost, service, maintenance, and so forth—take on added importance in product choice. Among these factors, warranty is a factor that is known (or at least potentially known) to the buyer at the time of purchase (Murphy 2006). Buyers consider different attributes whenever they purchase a product. Buyer's decision can vary due to the presence of warranty. On consumers purchase decision the intrinsic and the extrinsic cues of product have great influence. Warranty is a very common phenomena and an important extrinsic cue for the product especially for the electronic products (Cai et al. 2004). Many companies, whether they are established and reputed or new and non-reputed are offering different types of warranty to the target market. But the question is whether this warranty has any significant influence over the purchasing decision considering other intrinsic and extrinsic

factors. The objective of this study is to find out the answer to this question.

## 2. Background of the Study

Literature defines warranty as “a written assurance that the manufacturer of a product will guarantee the quality and reliability of a product in terms of correcting any legitimate problems with the product at no additional cost, for some expressed or implied period of time or use” (Pecht 2006). Although regulations seem to be the reason for manufacturers to offer warranty, literature reveals that warranty is dictated more by customer and market competition. Warranty is an obligation attached to products (items or systems) that requires the warranty issuers (manufacturers or suppliers) to provide compensation to consumers according to the warranty terms when the warranted products fail to perform their pre-specified functions under normal usage within the warranty coverage period. Based on this definition, a warranty contract should contain at least three characteristics: the coverage period (fixed or random), the method of compensations, and the conditions under which such compensations would be offered (Pham 2006). The last characteristic is closely related to warranty execution since it clarifies consumers’ rights and protects warranty issuers from excessive false claims. From the costing perspective, the first two characteristics are more important to manufacturers because they determine the depth of the protection against premature failures and the direct cost related to those failures.

In industrialized societies, new products are appearing in the marketplace at an ever-increasing pace (Blischke and Murthy 1995). Their introduction is either market driven – a result of increasing customer expectations and needs – or technology driven – resulting from advances in technology. In addition, the complexity of products tends to increase with each new generation. A further complicating factor is that customers are uncertain about, and have no easy way to research new product performance. Two items that are becoming more critical and important in the customer purchase decision process are:

1. Pre-purchase services – including information regarding product performance, useful life, cost of operation, etc., and
2. Post-purchase support services – including training in product use, availability of spares, maintenance, assistance with problems, etc.

Customers want assurance that the product will perform at a satisfactory level during the useful life of the product. Manufacturers not only need to provide this assurance, but more importantly, need to ensure customer satisfaction as well. Without this, survival in a fiercely competitive global market environment would be impossible. Warranties play an important role in this context. The use of warranties is widespread and they serve many purposes. These include legal protection for manufacturer and buyer, signals of product quality, assurance that the product will perform at a satisfactory level, providing a means of compensating buyers when a purchased item does not perform as promised and resolving disputes between buyer and manufacturer. Many different types of warranties have been studied in detail from various points of view. A warranty of any type, since it involves an additional service associated with a product, will lead to potential costs beyond those associated with the design, manufacture and sale of the product. These costs, in fact, are unpredictable future costs and have a significant impact on the total profits for a manufacturing business.

## 3. Literature Review

A warranty is a contractual agreement associated with the sale of a product that requires the manufacturer to either rectify or compensate for any failures over the warranty period. The cost associated with the servicing of the warranty per item sold is a random variable of considerable importance to manufacturers (Jack and Murthy 2001). Blischke and Murthy (1995) summarized most of the literature on warranty servicing. Different types of cues in the environment allow us to predict the simultaneous effects of manufacturer reputation, retailer reputation, and product warranty on consumer perceptions of product quality. Undoubtedly, manufacturer reputation would have a direct impact on consumer judgments of

product quality. For this reason manufacturer decides to offer a warranty that is better than its competitors. Because of its good reputation, the manufacturer has no incentive to send a false signal to customer—that is, offer a better warranty on a low-quality product. If anything, the manufacturer will hurt its good reputation and incur substantial costs if it sends a false signal. On the other hand, if the manufacturer has a poor reputation, there may be an incentive to send a false signal for at least two reasons. First, the likelihood of such manufacturers being fly-by-night operators is relatively high (Boulding & Kirmani 1993). As such, the perceived likelihood of such manufacturers honoring warranty obligations may be remote to nonexistent. Second, a manufacturer with a poor reputation has nothing to lose by offering a better warranty. In fact, consumers may perceive that given the manufacturer's poor reputation, it needs to compensate by offering a better warranty. Said differently, the low-scope cue (product warranty) is diagnostic when the valence of the high-scope cue (manufacturer reputation) is positive but not when it is negative. This implies that the low-scope cue is more likely to be used in product quality judgments when the high-scope cue is positive and less likely when the high-scope cue is negative. Thus, a better warranty is more likely to affect perceptions of product quality when it is offered by a reputed manufacturer. Indeed, Boulding and Kirmani (1993) found that a better warranty led to higher perceptions of quality when the manufacturer offering the warranty was reputed to manufacture high-quality products. A better warranty coverage did not influence perceptions of quality when the manufacturer had a poor reputation.

Consequently, selling the product through a reputable retailer provides some assurance to consumers, particularly when the manufacturer reputation is poor. The perceived assurance is also bolstered by the fact that a reputed retailer is also more likely to provide redress in case of a product failure. The indirect effect comes from the positive inferences evoked by the high-quality retailer transferring over to the low-scope cue. Thus, the warranty becomes more diagnostic and the likelihood of it being used in quality judgments increases. This implies that regardless of manufacturer reputation, a better warranty coverage should lead to higher perceptions of quality when the product is sold through a high-quality retailer. In sum, the low-scope cue—product warranty—is relatively more diagnostic when at least one of the high-scope cues (manufacturer reputation or retailer reputation) is positive. This occurs because consumers are more likely to use warranty in their assessments of product quality when either high-scope cue is positive. The implication is that unless a manufacturer goes through a reputable retailer, it cannot convey improvements in product quality through a warranty.

In many situations, consumers do not know the true quality of competing products (or brands) before making their purchase decisions. Warranty that is to be offered for a product is an important marketing decision. It was understood quite early that a warranty possibly offers insurance against product failure to potential buyers (Heal 1977). However, Spence (1977) initiated a new stream of research by suggesting a signaling role for warranty. He argued that a high-quality product might provide a longer warranty to signal its quality to uninformed buyers. Facing high warranty costs in imitating such a strategy, a low-quality product would not follow suit, thus validating longer warranty as a signal of quality. The extent of warranty protection appears to bear no general relation to the overall performance of a product. That is, the sellers of more reliable brands of a particular product may offer more, equal, or even less warranty protection than sellers of less reliable brands. The formulation assumes that consumers are willing to pay more for higher reliability, and that higher types are willing to pay more for a given level of reliability. With reservation price being a linear function of the expected time between failures, we are assuming that consumers are risk-neutral. The consumer observes the warranties offered by the firms before purchase but does not observe the quantities produced. Since the consumer is fully informed about the incumbent's reliability, beliefs about it are not changed by the firms' warranties. However, the consumer may update beliefs about the entrant's reliability based on the firms' warranties, and the entrant may offer a warranty if it improves profitability through an increase in perceived reliability.

The development of effective marketing strategies requires an understanding of the process in which consumers perceive value among the available alternatives. Researchers of consumer behavior have developed a number of theories in the attempt to explain and predict consumers' perceptions of value (Bearden and Shimp 1982; Dodds and Monroe 1985; Dodds, Monroe et al. 1991; Teas and Agarwal 2000). These theories suggest that consumers' perceptions of value are generally formed on the basis of "an array

of cues" (Cox 1962). The consumer's task in evaluating any given product is to use cues from this array for making evaluative judgments about that product. These cues can mainly fall into two categories: intrinsic cues or extrinsic cues. Intrinsic cues refer to attributes that cannot be changed without changing the physical characteristics of the product. Extrinsic cues are attributes that are not part of the physical product (Olson and Jacoby 1972; Szybillo and Jacoby 1974). It is still unknown about which of the intrinsic attributes and/or extrinsic cues are chosen by consumers in forming their value in a deal, and why some cues are chosen while others are not. However, it is assumed that when a consumer confronts with a new product, s/he would consider salient attributes of the product and would form an opinion. In this process, the same attribute might have different effects depending on the environment in which it competes. The contrast effect assumes that the effect applies not only to single attributes but also to the tradeoffs between attributes. In addition to this evaluation process, extrinsic cues might influence consumers' product evaluations in a more global manner by serving as an evaluative context of liking or disliking for the new product. The information processing theory suggests that decision-makers have limitations on their capacity for processing information. It means that consumers cannot always articulate value between or among the alternatives. Such limitations include limited working memory and limited computational capabilities (Olson and Jacoby 1972). The consumer, for example, may lack the motivation to sort out the information that might lead to an objective determination of value in making the decision, may not have the ability to process it, or the information may simply be unavailable. The salience or accessibility of the brand associations depends on their strength in memory, as well as the retrieval cues provided (Keller and Aaker 1992; Lynch and Srull 1982).

Short Term Warranty and Long Term Warranty portray different perceptions in consumers mind. For those products warranty is given for a period of 6 months to 3 years is considered as short term warranty. On the other hand, for those products warranty is given for a period of 3 years to 7 years is considered as long term warranty. Short term warranty is acceptable to customers to some extent and whereas long term warranty has a little bit confusion in consumer's mind regarding the reliability. Branded product has a generic acceptance and reputation among customers. User acceptance and reliability from word of mouth works for branded product. To attain the customer's focus manufacturer of non- branded product tag warranty with product offering. This tagging creates a positive impact in the mind of customers for making purchase decision.

Large segments of the population in developing countries are facing difficulties to lead their daily life. Income level of the people of Bangladesh is not high compare to the developed countries. Electronic products are used by people all over the world. There are different brands of electronic products available in Bangladesh. As choices vary person to person, many people choose either brand or non-brand products. There is a huge demand for electronic products in Bangladesh. As a result, both branded and non-branded electronic products are available in the market of Bangladesh. Generally people of middle income group and high income group of Bangladesh choose branded electronic products. On the other hand, low income group people of Bangladesh choose non branded electronic products. Usually non branded products are priced lower than branded products. Same is true also for electronic products. Optimal performance from the low cost electronic products depends on many related factors. Electronic products have a highly potential sector for Bangladesh. Bangladeshi people have a strong mental ability to visualize the actions of unseen abstract designs as demanded by electronic products. And it is a known fact that electronic products that strong mental abstraction is needed to understand the inner unseen working of electronic products. In other words, Bangladeshi people have a natural ability for electronics which gives it a strong advantage over many nations. This sector has been initiated by relatively educated group of people, particularly people with science and engineering background. This is good sign for potential product innovation and quality. As mentioned above, labors in Bangladesh are easy to train as they have a natural mental ability. They can produce high quality products given necessary facilities and incentive. Potential exists for high quality indigenous product design. Existing local electronic products are better in quality than many items imported from neighboring countries; it is the reason for their survival in spite of negative Tax and VAT policies that favor importing against local production. This sector needs a very small fixed investment. Products needed for calibration or automation of other process industries can be designed and fabricated. Mostly innovators

have turned into entrepreneurs. This is behind all significant industrial growth in the global industry. Local support industries for transformers and cabinets help reduce the cost of products. Warranty is attached with electronic products in order to attract the customer (Note 1). Whenever customers find that no warranty is tagged with electronic products then purchase decision turns in to dilemma. So warranty has a great impact on purchase decision for electronic products.

#### 4. Conceptual Framework

The conceptual framework has been developed which is one of the relative construct of this study.

<Figure 1>

#### 5. Hypotheses

Based on the Research Question, the following hypotheses have been developed-

- H<sub>1</sub>: Warranty ensures service providers accountability and responsibility
- H<sub>2</sub>: Warranty initiates reliability and durability in the mind of the customer
- H<sub>3</sub>: Long-term warranty of the product has a positive influence on purchase decision of the consumer.
- H<sub>4</sub>: Short-term warranty of the product has a positive influence on purchase decision of the consumer.
- H<sub>5</sub>: Branded product with warranty ensures better service experience for the consumer.
- H<sub>6</sub>: Non-Branded product with warranty ensures better service experience for the consumer.
- H<sub>7</sub>: Extrinsic que (Country of origin, price) has a positive influence on purchase influence of the consumer.
- H<sub>8</sub>: Warranty acts as risk reliever for the consumer when they make the purchase decision.

#### 6. Methodology

Findings of the exploratory research revealed the insight of the consumer about the warranty service with an electronic product. 8 factors were selected from the findings of the exploratory research. Thirty Three questions were developed for the conclusive research questionnaire. Five point Likert scale was used to collect data from the respondents. The respondents were asked to rate on several statements on the questionnaire using the scale between Strongly Agree and Strongly Disagree. The questionnaire was pre-tested in order to maintain proper wording, length and sequencing of the questions. The data were collected from the university students of the Dhaka city, Bangladesh. To select the sample, non-probabilistic sampling method i.e. convenient sampling was used. A sample size of 100 students was used to conduct the research. At first the students were asked whether they had purchased any product with warranty. A total of 29 items were constructed to get the data on nine variables where eight were independent and the remaining one was dependent. Reliability and internal consistency of the multi item scales for each of the constructs were measured using Cronbach Coefficient Alpha. The minimally acceptable reliability for primary research should be in the range of point five to point six. (Nunnally, 1967) Based on the assessment a total of 28 items measuring the constructs were finally retained for final use. Cronbach Coefficient alpha values were computed for each construct separately which ranged from point 0.4764 to 0.7010.

<Table 1>

## 7. Data Analysis & Findings

Once the reliability analysis was done, exclusion of one question from the seventh independent variable (Extrinsic que) ultimately improved the alpha value. Then, the mean value of dependent variables and independent variables were calculated. Finally, the process was completed by conducting regression analysis.

Among the respondents, 50 % was male and 50% was female. The ratio of male to female respondents in the research was 1:1. 90% of the respondents purchased product for their family. Most of the respondent regularly purchased daily and necessary products for their family. 65% of the respondents said that they purchased any product with warranty within last three month. Most of the respondents had the idea about warranty with given to the product. 21% of the respondents wanted warranty with a refrigerator and 16% of the respondents wanted warranty with television and computer. Most of the respondents want warranty with the electronic products. 37% of the respondents had said that they considered brand name when they purchase a product. 16% of the respondents had said about the warranty. Warranty was not the main influencing factor in the time of purchasing whereas brand name was the most influencing factors. 48% of the respondents said that they wanted warranty for both new and reputed brand. 35% of the respondents wanted warranty with established reputed brand. 40% of the respondent all the time considered warranty when they purchase any product. 35% of the respondent sometime considered warranty when they purchase a product. Most of the time people considered warranty when they purchase any product. 61% of the respondents said that when the price of the product is very high then they prefer warranty. Whenever price of a product is very high then it will work well in the future according to the expectation or not consumer always aware of it. So they prefer warranty in this case. 95% of the respondents said that length of warranty should long-term warranty. Long-term warranty is perceived as warranty for most of the people. 80% of the respondents said that short-term warranty means 6 months to 1 year period warranty. Short-term warranty is perceived as 6 months to 1 year warranty. 65% of the respondents said that long-term warranty means 3 to 5 year period warranty. Long-term warranty is perceived as 3 to 5 year warranty. Most of the people do not think long term warranty means it is more than 5 years. 16% of the respondents said that short-term warranty should be provided for Printer. 12% of the respondent thought that with Cell phone short-term warranty should provide. Different consumer had different choice for short-term warranty according to their product preference and requirements. 31% of the respondent had said that long-term warranty should be provided with refrigerator. 21% of the respondent has said that long-term warranty should provide with television. It was found in one of previous analysis that most of the consumer wanted warranty with refrigerator and from this particular finding they perceive long-term warranty with the refrigerator. 85% of the respondents said that they have utilized opportunity of warranty service from the manufacturer. Consumers were aware about the utilization of warranty from the service providers.

### 7.1. Hypothesis Testing

In this section hypothesis based on the eight factors that has an effect on purchase decision are being analyzed.

<Table 2>

First hypothesis was  $H_1$ , Warranty ensures service providers accountability and responsibility. The observed table shows that service provider's accountability has a positive influence on the purchase decision. We can see that P value (.030) is smaller than alpha value (.05) so  $H_1$  is accepted. Second hypothesis was  $H_2$ , Warranty initiates reliability and durability in the mind of the customer. The observed table shows that reliability has a positive influence on the purchase decision of the consumer. We can see that P value (.033) is smaller than alpha value (.05) so  $H_2$  is accepted. Third one was  $H_3$ , Long-term warranty of the product has a positive influence on purchase decision of the consumer. The observed table shows that long-term

warranty has a positive influence on the purchase decision of the consumer. We can see that P value (.021) is smaller than alpha value (.05) so  $H_3$  is accepted. Number fourth hypothesis was,  $H_4$ , Short-term warranty of the product has a positive influence on purchase decision of the consumer. The observed table shows that short-term warranty has a positive influence on the purchase decision of the consumer. We can see that P value (.011) is smaller than alpha value (.05) so  $H_4$  is accepted. Fifth hypothesis was  $H_5$ , Branded product with warranty ensures better service experience for the consumer. The observed table shows that branded product with warranty has a positive influence on the purchase decision of the consumer. But it is very low and it is not statistically significant as we can see that P value (.784) is greater than alpha value (.05) so  $H_5$  is rejected. Number sixth hypothesis was  $H_6$ , Non-Branded product with warranty ensures better service experience for the consumer. The observed table shows that short-term warranty has a negative influence on the purchase decision of the consumer. We can see that P value (.013) is smaller than alpha value (.05) so  $H_6$  is accepted. Seventh hypothesis was  $H_7$ , Extrinsic que has a positive influence on purchase influence of the consumer. The observed table shows that extrinsic que has a positive influence on the purchase decision of the consumer. But it is very low and it is not statistically significant as we can see that P value (.114) is greater than alpha value (.05) so  $H_7$  is rejected. Last hypothesis was  $H_8$ , Warranty acts as risk reliever for the consumer when they make the purchase decision. The observed table shows that risk reliever has a negative influence on the purchase decision of the consumer. We can see that P value (.000) is smaller than alpha value (.05) so  $H_8$  is accepted.

## 7.2. Regression Analysis

<Table 3>

From the regression analysis, the value of R Square is found 0.309, meaning that the independent variables (Service Provider, Reliability, Long-term warranty, short-term warranty, branded product, non-branded product, extrinsic que and risk reliever) have 30.9% impact over the dependent variable (Purchase decision). In this study of regression model analysis of the influence of warranty service on consumer purchase decision tries to find out the factors which affect the purchase decision of the consumer when warranty service is given to them. The 8 factors are Service Provider, Reliability, Long-term warranty; short-term warranty, branded product, non-branded product, extrinsic que and risk reliever are tested by conducting a Regression analysis. The result indicates that six out of eight factors (Service Provider, Reliability, Long-term warranty, short-term warranty, non-branded product, and risk reliever) have direct positive and significant influence on Customer service experience. Only branded product and extrinsic que did not show any significant influence on the purchase decision of the consumer. Perhaps Consumers give less attention to branded product and extrinsic que when warranty is given with the product.

## 7.3. Limitation

The study had some limitations. Firstly the study used convenience sampling; more specifically, the university students of Dhaka city, Bangladesh. There are many arguments, both in favor and against the convenience sampling method. Several authors have enumerated the dangerous of using student samples in research (Beltramini 1983; Oakes 1972). The  $R^2$  (0.309), is comparatively low which suggest other factors can also influence the purchase decision of the consumer when warranty was given to them. Further study should include other factors except those considered here. Also quite unexpectedly, branded product and extrinsic que are rejected in this study. So, further research should focus into branded product and extrinsic que.

## 8. Conclusion & Recommendation

Many products come with a warranty promising repair or replacement for months or years or life of product.

The primary role of a warranty is to ensure a post purchase remedy for consumers. It offers protection when an item, properly used, fails to perform as intended or as specified by the manufacturer. Often customers are uncertain about product performance. Here warranties play an important role in providing product assurance to customers and different types of warranties are offered depending on the product and buyer. Consumer purchase decision depends on many factors. Naturally product attributes and features have influence on consumer buying decision. At the same time other supplementary service and information like warranty can instigate consumers buying decision. Product warranty brings reliability for the consumer. Warranty is a source of market power not because of the actual repairs that are done but because of the perception by the customer that the company is willing to perform needed repairs. A product with fewer errors will reduce the requirement for limited warranty claims. If this occurs, and the product holds up as expected, the extra cost of an extended warranty is a good source of added revenue for the company. Service Provider's accountability and responsibility should be ensured when warranty service is provided. When warranty service is provided other information about the product should not be overlooked. When the consumers purchase products, both branded and non-branded, they should consider the warranty services. Period of the long-term warranty and short-term warranty should be specified. Warranty should be given with the electronics product and warranty transactions should be reasonable one as well in order to build up a long-term, profitable relationship with the consumers.

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### Notes

1. <http://www.jobstrust.org/jobsproject/content/SWOT%20for%20electrical%20&%20Electronic%20SME.pdf>

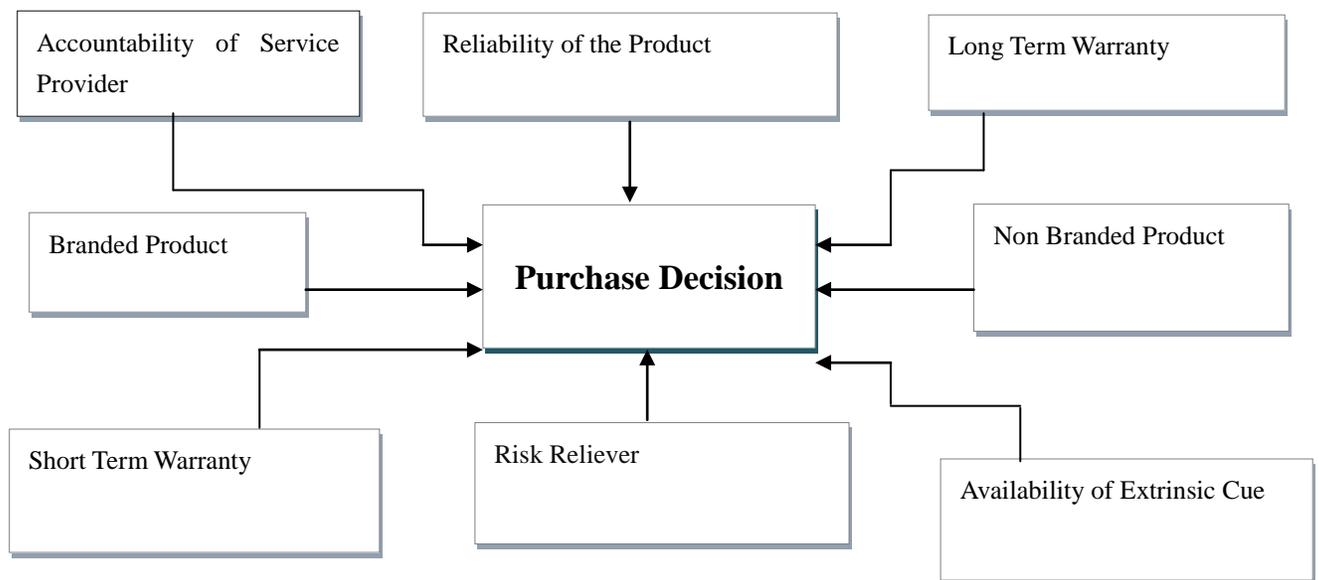


Figure-1: A Conceptual Model of Factors Influencing the Consumers' Purchase Decision of Electronic Products

Table- 1: Reliability Tests

<b>Dimension</b>	<b>Number of Items</b>	<b>Alpha Values</b>
Purchase Decision (Dependent)	3	0.6440
Reliability of the product (independent)	3	0.5519
Long-term Warranty (independent)	3	0.5707
Short-term Warranty (independent)	3	0.4764
Branded Product (Independent)	3	0.6215
Non-branded Product (Independent)	3	0.4908
Service Provider's Accountability (independent)	3	0.7010
Extrinsic que (Independent)	3	0.4835
Risk Reliever (Independent)	3	0.6176

Table- 2: Hypothesis Testing

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
	(Constant)	1.368	.897		1.525	.131	-.414	3.150
	ServiceProvider	.227	.103	.198	2.198	.030	.022	.432
	Reliability	.195	.090	.197	2.165	.033	.016	.374
	LongTermWarranty	.203	.086	.215	2.350	.021	.031	.375
	ShortTermWarranty	.431	.120	.403	3.599	.001	.193	.669
	BrandedProduct	.028	.103	.029	.275	.784	-.177	.233
	NonBrandedProduct	-.233	.092	-.237	-2.541	.013	-.416	-.051
	ExtrinsicQue	.153	.096	.148	1.595	.114	-.037	.343
	RiskReliever	-.437	.112	-.429	-3.886	.000	-.660	-.213

Dependent Variable: PurchaseDecision

Table- 3: Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.556(a)	.309	.248	.55523	.309	5.080	8	91	.000

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