



## EFFECTS OF PRODUCT'S WARRANTY ON CUSTOMERS' PREFERENCES: EMPIRICAL FINDINGS ON REVERSE LOGISTICS MODELS

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**ABSTRACT. Background:** IT products are now becoming the part of every one's life. Since Pakistan didn't manufacture IT products, so the customers had to purchase the products that are available in the markets. During such purchase, customers not only gave preference to brand or price or both but they also consider its warranty so that they are secured with the post purchase risks.

**Methods:** This study was aimed to identify the impact of the warranty on customers' preferences towards brand and price. A conceptual framework was made on the basis of available literature and then data was collected. It was collected from 298 respondents through survey questionnaire and after applying Factor Analysis, One Way MANOVA was applied on the factors.

**Results and conclusions:** The study found that the product's warranty has a significant impact on preferences towards brand, concern for price and price intentions whereas the impact on willingness to pay was found insignificant. The results conclude that Pakistani customers need a branded IT product on competitive prices, which give more in less along with the warranty so that they can enjoy the same quality of the product for a period of time whereas, they are not willing to pay any additional amount for the product just because of Warranty.

**Key words:** product warranty, customers' preferences, brand, price, reverse logistics models.

### INTRODUCTION

Purchasing an Information Technology (IT) product is always an excitement for consumers. As the technology is rapidly changing, its products are now becoming the part of every one's life. Customers had recognized the IT products as need and now it is of importance for them to be technologically updated. In order to fulfilling that need, customers had frequent purchase of IT products, so that they can update themselves technologically. With an intense increase in competition by globalization, the availability of variety made consumers indifference between the products.

Kilic and Kendirli [2011] reported after collecting the data from 400 university students of Turkey and found that university students prefers global brands specifically related to IT products. This study also reveals the consumer attitude towards the theoretical characteristics of brand personality. Furthermore a positive relationship was also found in the demographic factors of the respondents with their attitudes and preference towards global brands. On the other hand, after analyzing the preferences of the consumers towards eight different product categories, consumers prefer brand and quality of the product which makes them brand conscious

whereas a segment was also found to be price seeking [Stamer & Diller, 2006].

Huysentruyt and Read [2012] reported that warranty support give consumers a peace of mind during their purchase decisions. It also helps the consumer to actually pay for the product. The study also reveals that people having cognitive skills are less likely to predict the benefits of the warranty and therefore they are still influenced by the product's warranty to buy that product. On the other hand, Hossain and AL Mahmud [2012] reported after examining different respondents from the city of Dhaka, Bangladesh that, respondents equally prefer brand and product's warranty. In fact the respondents believe that the better brand gives the better warranty and they also recommend that customer should give preference to the brand of the product so that they can get better warranty as well.

Chernev [2007] examined the impact of positioning strategies on the consumer choice, in which the consumer was given two options. The first option was differentiated by only one feature whereas the second option was having all the features. They proposed that consumer while purchasing give preference to the product on the basis of its overall attractiveness. It was also revealed that while purchasing that option which has all the features, consumers also acknowledge and appreciate the features which was not basically required.

Consumer preferences towards brand and price are found equally, depending upon the respondents and their attitudes. Different trends were observed in Pakistani customers stating different preferences. On one hand it was observed that customers preferred Price on Brand when they purchased a relatively cheaper Product. For instance, it has been observed that while purchasing key board or mouse which is relatively cheaper, customers normally purchase the cheaper products. On the other hand, while purchasing a product which is relatively expensive, they are willing to pay even high in order to get a quality product. For instance, while purchasing Web cameras, customers gave preference to the cameras that have high resolution in terms of pixels so that they can have better quality.

A trend is also observed among the Pakistani consumers that they prefer brand towards price, keeping them warranty secured for the future expected risks. For instance, while purchasing laptops, customers gave preference to the laptops of HP, DELL and Acer etc because these brands are familiar to them and are available with warranty. Therefore, considering all these current trends, this research will focused on the impact that whether the products' warranty affects the consumers' preferences towards Brand or Price or both while purchasing an IT product.

Keeping in mind the costs associated with the purchase of an IT related product, the comfort and satisfaction with the brand that customers feels and give, and the risks associated with the after purchase, company along with utilizing its marketing mix also used to give a warranty for a time period in order to attract the customers and minimize the post purchase risks. These are the factors from the sellers' perspective. From customer' perspective, product's warranty may or may not be considered as an important factor that influenced their purchase intension while purchasing an IT product. This research is aimed to fill this gap and to find out whether product's warranty plays any significant role in customers' preferences towards Brand and/or Price of the product.

## LITERATURE REVIEW

In order to mitigate the post purchase risks that barred the customers from purchasing durable products, the sellers started giving their products a Warranty. Products' warranty is the part of Reverse Logistics of Supply Chain Management in which the information or products moves in a reverse direction which is from point of buyer to the point of seller. Products warranty is of two types. One is the basic warranty which the manufacturers used to give with the product itself as its part and which can't be purchased separately. The second is the extended warranty in which the seller at any level of the downstream intermediaries or manufacturer offered that for an additional charge and that type of warranty can be purchased separately depending upon the time period [Chu, Chintagunta, 2011].

The decision of purchase got difficult when the selection criterion is limited. The literature is filled with various factors that the customer prefers while purchasing a durable product but this study is primarily focused to the basic warranty of the product and the customers' preferences towards brand and price.

Teng, Ho, and Shumar [2005] reported that the warranty of the product is becoming an assurance of the product quality which ultimately increases the loyalty of the customers with the companies. With the immense increase in the competition between the manufacturers in the market, manufacturers have also incorporated the product warranty as the differentiation strategy which differentiates its product with the competitors. The study further investigated the classification of the warranty returns which is the part of the reverse logistics in Supply Chain Management by applying Discriminant Analysis and Logistics Regression Model, which helps the Original Equipment Manufacturers (OEMs) to have the accurate information for classifying the warranty returns which is helpful in minimization of costs that are associated with the warranty returns and the maintaining the efficient flow of the whole supply chain.

Lin, Kuo, Huang, Lin, and Ho [2007] reported that warranty plays an important role in order to increase the sale of the products because customers are willing to purchase the product which is reliable and durable and its warranty assures the reliability and durability. They also proposed a model for the fuzzy environment for determining the warranty period of the products so that optimum warranty can be given and maximum profit can be achieved.

Oumlil [2008] explored different types of warranty, use of warranty as the product differentiation strategy, a tool to compete and a sort of quality assurance related to product that the customers got in terms of warranty. The author also discussed different theories on warranty so that the right theory is adopted by the manufactures depending upon the product's nature, market competition and customers. A general framework was proposed for making a warranty policy containing two components

naming Planning and Development. The author conducted a case study on a multinational High Tech company and data from 49 employees were collected by using a survey questionnaire. It was found that making of the warranty policy should depend on the complexity. The results showed a difference between types of warranty which was based on the buyer's knowledge related to product. It was also found that the standardized warranty is easy to manage and its management becomes more complex with the diversity in product line.

Ambad and Kulkarni [2013] stated that the manufacturers having similar kind of products are using warranty as a tool that increases the customers' confidence towards the product, but at the same time this tool increases the costs on the manufactures as well. So a conceptual framework was proposed in which the technology and the other related issues are integrated on the manufacturing stage so that the expected warranty costs can be reduced. A model was also developed to optimize the warranty costs and tested on the data of an engine manufacturer, which showed a significant reduction in the warranty costs keeping in mind the reliability of the engines, the price level in the engines' market and the warranty policies.

Oumlil [2013] empirically investigated the issues related to the warranty policy formulation, management and its application by examining the survey from the employees of a large scale US based High Tech firm. The study revealed that the budgeted costs that are associated with the warranty should be allocated to the departments based on their activities. In addition to this, it was found that the employees are against the option of outsourcing the warranty to the third party as other companies have started. The study further resulted in making the warranty policy as per the markets and customers locally and internationally, whereas need of proper communication of the warranty policy and its understanding to the employees of the said firm was also observed which is helpful in increasing the productivity and reduction in warranty costs.

Stamer and Diller [2006] empirically investigated different consumer segments

related to price on eight consumer goods. A survey was conducted by using Likert scale questions related to the consumer preferences towards the prices of the eight products categories. Data was collected from 2621 shoppers and Factor Analysis was applied. The study revealed five segments of shoppers and their preferences towards price and quality. One segment is of the buyers who are brand conscious, who consider brand as the sign of high quality and are even willing to pay high for that brand, price seekers that are willing to purchase the products having low prices, optimizers who give equal preferences to price and quality, a segment who are only willing to purchase the product when offered on discounted prices irrespectively of brand or quality and lastly a segment who assume the high price as signal of quality and willing to purchase the product at high price that gives them high quality.

Suki [2013] examined the relationship between features of products, its price, brand name and the social influence with the demand of smart phones by university students of Malaysia. The students were considered as well aware with the smart phones and its usage. The sample consists of 320 University students and Structural Equation Modeling (SEM) was applied. The study revealed that the students demand has a significant impact of the name of the brand and social influence whereas the impact of the price is found insignificant. The study also recommends that the smart phones manufactures should also increase the features, operating system, software and hardware of the smart phones so that it can also have a significant impact on the consumer demand for smart phones.

Karjaluoto et al. [2005] examined various factors that influence the choices of consumers while purchasing new mobile phones for the first time and switching to other mobile phones by two different studies. In the first study, focused group interview technique was used and the sample consists of 79 graduate students. The study shows that the only factor that influences the consumer choice for purchasing the new mobile phone for the very first time is the need recognition for the technology. On the other hand, a survey questionnaire was used in the second study in

which 179 respondents were considered valid. By the help of Factor Analysis, the results revealed that while switching and changing to new mobile phones, prices of the mobile phones have found strong influence and brands have found medium influence on the consumer choice.

Perez, Padgett, and Burgers [2011] investigated the impact of the Intergenerational Influence (IGI) on the brand preferences on Mexican females (mothers and daughters). The sample consists of 300 mothers and daughters and Z- statistic was used. The study revealed that the intergenerational influence in family life cycle have stronger impact on the brand preferences rather than the amount of time the daughters live apart from their mothers.

Miremadi and Faghani [2012] empirically examined the factors that affect the consumer buying attitude and the factors that consumer preferred while purchasing a branded shampoo in the Iranian fast moving consumer goods (FMCGs) market. By the help of a survey questionnaire, valid data from 374 respondents were considered for the Regression Analysis. The study shows that the attractive packaging, anti dandruff and shiny are the attributes that influenced the consumer buying attitude whereas the sustainability, price and quality are the factors that affect consumer preference while purchasing a branded shampoo.

Mendez, Oubina, and Rubio [2011] examined the factors that form consumer brand preferences. Factors include packaging and price as extrinsic cues and taste as intrinsic cue with respect to brand on the two food products which are cola products and stuffed olives. The research was conducted on three different products in each product category of which two are internationally recognized manufacturer brands and one is the locally recognized store brand by conjoint analysis. The study was conducted in a way that at first, respondents were asked to use the products without knowing its brand, this is known as blind test and then the brands were revealed to them. The response was recorded at both stages. The result revealed that consumer gave different preference to the brands in both categories. Since the consumers are well aware with cola products that are highly

differentiated so the brand names and taste formed their preference. In the case of stuffed olives, price and taste are the factors that have strong influence on the consumer preferences and since this product category is not have much differentiation between brands so even after revealing brands consumer gave preference to the store brands.

Walley, Custance, Taylor, Lindgreen, and Hingley [2007] examined various factors that affect the customer's preferences while purchasing a tractor in United Kingdom. The researchers identified five factors namely brand, price, service quality of dealer, dealer proximity and buyers' experience with respect to dealer. Data was collected from 428 contractors and farmers and conjoint analysis was applied on the data. The results revealed that the most important factor that respondent prefer while purchasing the tractor is the brand followed by price. The study suggest the manufacturers and marketers to have a proper brand management whereas price can be of premium so that the expenses of branding can easily be managed by charging higher in UK since customers preferred brand mostly.

Sardar [2012] examined the factors that affect consumer preference towards brand in the passenger car market of the Aurangabad District of Maharashtra (India). The sample consists of 150 respondents by using convenience sampling technique. The study revealed that most important factor customer preferred towards brand is the brand status whereas the second most important factor is price. The study also reveals that personal factors which is also known as demographic factors consist of age, gender, education, occupation and income status; have significant influence on the brand preference. The study suggests that the Indian consumers are much more price conscious and are fuel efficient so the manufacturers must have low price and high fuel efficient passenger cars which helps them to increase their market share and revenues.

Mokhlis and Yaakop [2012] investigated the various factors that the Malaysian University students consider before selecting Mobile Phones. Data was collected from 376 students through survey questionnaire having

7point Likert scale, on which factor analysis and Friedman test was applied. Factor Analysis generates 7 factors which were named as Innovative features, image, price personal recommendations, durability and portable aspects, media influence and post sale service. Friedman test was further applied on the factors which show that university students give more importance to innovative features, followed by personal recommendations. The third rank was given to the price whereas durability and post sale service was ranked as fourth and fifth. The students was least influenced by the media influence and image which ranked as sixth and seventh respectively.

Mokhlis [2012] comparatively analyzed that whether there is a difference exists between different ethnic subculture while evaluating a product on the basis of its attributes and whether different customers having different ethnic subculture have different preference to a product while purchasing. The researcher use mobile phone as the product and the respondents were asked to give importance to its different attributes on 7-point Likert scale by a survey questionnaire. The respondents consist of Malay, Chinese and Indian students studying in Malaysian University, totaling sample of 371. After using Factor Analysis, seven factors were generated of which four have shown a significant difference in ranking by the three subculture groups. These are image, post sale service, influence by reference group and influence by media. The study further gives Marketers an idea to have different strategies while targeting different groups.

Pankhania and Modi [2011] investigated that what factors should the organizations must incorporate while targeting the desired target market so that companies can increase their revenues and can easily penetrate in the market. The data was collected by the industrial employees from top, middle and lower management of Vitthal Udyognagar which is in Anand District of Gujarat (India). The respondents were asked to rate the importance on Likert scale in Survey questionnaire having 14 scales related to brand, packaging, price, discounts, service, warranties and guaranties etc. The sample size

of 156 employees was considered for Factor Analysis. The result shows four factors which explain 64.013% of variation of the data. On the basis of this result, the researchers suggested that the companies should consider and give preference to convenience, quality and service, discounts and price and guaranty while targeting any market.

Queenette and Jerome [2011] explored the factors that respondents prefers while procuring the computer hardware and software. Data was collected from the 6 respondents of Edo and Delta states of Nigeria by the questionnaire and the results were evaluated on the basis of simple percentages. The study revealed that respondents prefer factors like memory, speed, costs, durability, brand, reliability and warranty before acquiring computer hardware. On the other hand, while purchasing computer software, respondents prefer factors like reliability and past record of the vendors, technical support and service, costs and compatibility with the existing software.

Gajghate and Khorgade [2013] examined that what factors significantly influence the purchase decision of the consumers while considering laptop purchase. Student market was found to be potential for laptop purchase by the researchers therefore convenience sampling technique was used and by the help of survey questionnaire, sample of 200 students from Nagpur City was taken and 25 factors were presented to them including Brand, Price, Brand Ambassador, Social Influence, Warranty, after Sale Service etc. From those 25 factors, 18 factors were considered for Factor Analysis. The analysis generates 8 factors which were named as Brand, Offer, Design, Hardware, Original Software, Components, Advertisement and Innovation. The impact of these factors was found significant on the purchase preference of consumers while considering the Laptop purchase. The study further suggested that the marketers should work on the communication of Warranty and Insurance whereas Components must also have separate offers as per the students' requirements.

Jain & Hundal [2007] explored the factors that the people of rural areas prefer while

purchasing a new mobile phone and the mobile phone service. The researchers collected the data from 1357 respondents from the rural areas of Punjab (India) by the survey questionnaire. The questionnaire includes 18 statements in order to analyze the preference towards mobile phone purchase and 18 statements for preference towards mobile phone service. Factor Analysis was applied on the data which resulted in making four factors for preference towards mobile phone purchase and five factors for preference towards mobile phone service respectively. For preference towards mobile phones, the factors were named as Convenience and Assistance, Price Consciousness, Brand Choice and Influential Persons, whereas for the mobile phone service the factors were named as Facilitating, Effectiveness, Dexterity, Relative advantage and Influential persons. The researchers suggested that more research is needed towards the rural areas because of being new emerging market for Information Technology Products. It was further suggested that marketers should adopt marketing techniques and strategies which must be aligned with the rural culture as the marketing, advertising on electronic media, print media etc was found to be insignificant because of the fact that the rural residents are less educated and they heavily rely on the suggestions and recommendations of friends, family and relatives etc.

In the light of the above reviews, it is evident that researchers are in agreement of considering Products' warranty as the sign of the quality, reliability and durability from customers' point of view and is helpful in making customers loyal to their products, increase in sales and profits from manufacturers' point of view [Lin et al. 2007, Oumlil 2008, Teng et al. 2005]. In addition to this, it was also found that customers are indifference with the choice with respect to brand and price. Both have created a tradeoff in which if customers go with the brand then they have to pay more and vice versa [Sardar 2012, Stamer, Diller 2006, Suki 2013, Walley et al., 2007]. On the other hand, while considering durable products, the researchers consider the product's warranty, brand and price along with other factors as important in order to evaluate the customer's preference, when purchasing a durable product as per their

target population [Gajghate, Khorgade 2013, Jain, Hundal 2007, Mokhlis, Yaakop 2012, Pankhania, Modi 2011]. Since the IT related products are becoming a necessity from luxury, so keeping in mind the customer's tradeoff between brand and price and to the best of researcher's knowledge, no work has been done or published yet on evaluating the impact of product's warranty on the customer's preferences in Pakistani context, which is a gap that needs to be filled. Therefore, the objective of this study, as mentioned earlier, is to find out that the product's warranty influences the customers' preferences towards brand and price.

## CONCEPTUAL FRAMEWORK

With an increase in the availability of substitutes and alternatives of the products, customer needs had also changed. They had started giving preference to other value added

options along with the product itself [Mokhlis, Yaakop 2012]. Earlier studies had shown an agreement in evaluation of different factors that customer preferred while purchasing durable products. The findings of such studies showed that customers prefer brand, price and warranty along with the other factors while purchasing [Gajghate, Khorgade 2013, Jain, Hundal 2007, Pankhania, Modi 2011]. The researchers had considered the Product's Warranty a significant factor in addition to other factors, but none of them reported its impact on customers' preferences towards brand and price.

Stamer and Diller [2006] identified three dimensions to measure consumer preferences towards Price. These are Concern for price, Willingness to pay and Price intentions. Therefore, considering the available literature, a conceptual framework is made which will be followed in this study. It is shown in Figure 1.

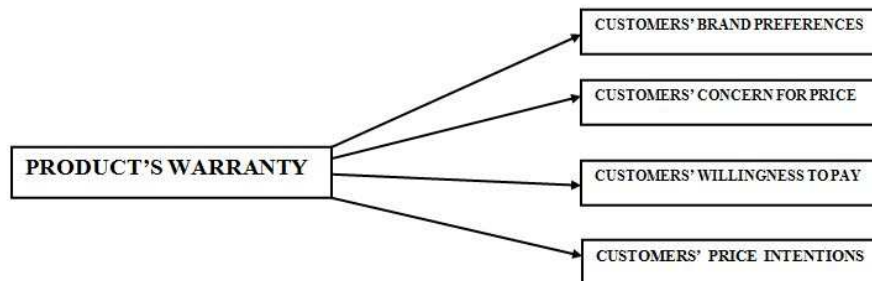


Fig. 1. Conceptual Framework of the study  
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Hence based on the literature and proposed conceptual framework, four hypotheses were developed given as follows:

H1: Product warranty has a significant impact on Customers' Brand Preferences.

H2: Product warranty has a significant impact on Customers' Concern for price.

H3: Product warranty has a significant impact on Customers' Willingness to pay.

H4: Product warranty has a significant impact on Customers' Price intentions.

## METHODOLOGY

Keeping in mind the benefits of a quantitative research [Bhat 2013], quantitative approach was selected for this study. In addition to this, considering the relationship between the variables as evident by the reviews, this study aims to

identify the causal relationship between the variables. This complements the problem statement which is to study that whether product's warranty plays a significant role in customers' preferences.

For the purpose of data collection, convenience sampling technique was used. The reasons for selecting this type of technique are that it was time saving, cost saving, the researcher can have direct interaction with the respondent and large sample can easily be collected through this. Data was collected from 298 business students from a private university of Karachi. The respondents were including males and females, age ranging from less than 20 to more than 40, belongs to nuclear family or joint family, having monthly income up to PKR 50,000 to above PKR 100,000.

A structured survey questionnaire was used for data collection. This questionnaire was divided in two sections. First section was having questions for measuring the variables whereas the second section includes the questions for respondents' general information. In first section, all questions are on a five point Likert Scale ranging from 1 "Strongly Disagree" to 5 "Strongly Agree". This questionnaire was developed by adapting scales and dimensions for the dependent and independent variables.

Huyentruyt and Read [2008], identified the items by which responses for Product's Warranty were measured. Stamer and Diller (2006) identified three dimensions to measure customers' preferences towards Price. 1) Concern for Price, 2) Willingness to Pay, and 3) Price Intentions. Moreover, Singhanian [2006], developed the scale to measure the respondents' preferences towards Brand.

After the development of survey instrument, questionnaire was evaluated by two panels for face and content validation. Firstly, it was evaluated by the panel of two academic experts so that it was checked that for the desired variables whether it is as per academic concepts considering the Pakistani environment. They suggested replacing the subject terminologies like Brand Loyalty with the easily understandable phrases. After incorporating the suggestion by them, it was

evaluated by three IT market Professionals separately so that they can validate it as per current IT consumer market trends. After the approval from them, it was required to do a Pilot Study.

After pilot study, the instrument was distributed using Google Drive and hardcopies of questionnaire. This resulted in the successful collection of sample of 298 respondents. After data collection, Researcher used Factor Analysis and MANOVA for the analysis of data. Researchers consider these techniques as a statistical tool for explaining the most preferred customers' factors and for filtering out the least preferred scales [Gajghate, Khorgade 2013, Jain, Hundal 2007, Karjaluoto et al. 2005, Pankhania, Modi 2011].

## **FINDINGS AND DISCUSSION**

### *Profile of the Respondents*

Out of 298 respondents, 216 were male which constituted 72.5% of the data whereas females were only 82 (27.5%). On the other hand, 24 respondents (8.1%) were having age of 20 years or less, 199 respondents (66.8%) were having age between 21 to 25 years, 71 respondents (23.8%) were having age between 26 to 35 years whereas only four respondents (1.3%) were having age more than 36 years. The demographic characteristics of respondents summarized in table 1.

### *Inferential Statistics*

Factor Analysis produced five factors as per literature and these five factors explained 61.423% out of total variation. The final items which were load in the five factors as made by the Factor Analysis. The component 1 was named as Brand Preferences, component 2 as Warranty, component 3 as Concern for Price, component 4 as Willingness to pay and component 5 as Price intentions, respectively. Table 2 shows the items which were load in the five respective factors. Hence five variables were made as they were named and desired.



Table 1. Profile of Respondents  
 Tabela 1. Profil badanych

Descriptive Profile		Frequency	Percent
Gender	Male	216	72.5
	Female	82	27.5
Age	20 years or less	24	8.1
	21 to 25 years	199	66.8
	26 to 35 years	71	23.8
	36 to 40 years	2	0.7
	41 to 45 years	1	0.3
	More than 45 years	1	0.3
Family Income PKR (Monthly)	Upto 50,000	105	35.2
	50,001 to 75,000	68	22.8
	75,001 to 100,000	47	15.8
	Above 100,000	78	26.2
Family kind	Nuclear family	153	51.3
	Joint family	145	48.7

Table 2. Factor Analysis Results Summary  
 Tabela 2. Wyniki analizy wskaźnikowej

	Component					Cumulative Percent
	1	2	3	4	5	
Brand is more important than any other factor while purchasing	.793					14.96%
Brand is more important than price	.713					
Brands play an important role in decision making	.698					
Warranty gives peace of mind		.771				13.78%
Protection of warranty is comforting		.766				
Won't take risk to purchase product without warranty		.691				
Prior to purchasing collect large amount of information on Price			.757			12.84%
While purchasing Consider large no of alternatives brands			.724			
Do in-depth effort to get information on consumer brands			.710			
Only pay normal price				.845		10.71%
Prepared to pay max price				.722		
Firms usually set fair prices					.783	9.72%
Very low price means low quality					.721	
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 5 iterations.						

Table 3. Multivariate Statistics Summary  
 Tabela 3. Analiza wieloczynnikowa

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.526	81.416 <sup>a</sup>	4.000	293.000	.000
	Wilks' Lambda	.474	81.416 <sup>a</sup>	4.000	293.000	.000
	Hotelling's Trace	1.111	81.416 <sup>a</sup>	4.000	293.000	.000
	Roy's Largest Root	1.111	81.416 <sup>a</sup>	4.000	293.000	.000
Warranty	Pillai's Trace	.143	12.200 <sup>a</sup>	4.000	293.000	.000
	Wilks' Lambda	.857	12.200 <sup>a</sup>	4.000	293.000	.000
	Hotelling's Trace	.167	12.200 <sup>a</sup>	4.000	293.000	.000
	Roy's Largest Root	.167	12.200 <sup>a</sup>	4.000	293.000	.000

Table 4. Fitness of Model  
 Tabela 4. Dopasowanie modelu

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	brand_preference	15.204 <sup>a</sup>	1	15.204	30.005	.000
	concern_for_price	9.625 <sup>b</sup>	1	9.625	19.723	.000
	willingness_to_pay	.011 <sup>c</sup>	1	.011	.016	.900
	price_intentions	4.159 <sup>d</sup>	1	4.159	6.865	.009
Intercept	brand_preference	33.975	1	33.975	67.049	.000
	concern_for_price	39.561	1	39.561	81.071	.000
	willingness_to_pay	68.023	1	68.023	96.381	.000
	price_intentions	47.651	1	47.651	78.653	.000
warranty	brand_preference	15.204	1	15.204	30.005	.000
	concern_for_price	9.625	1	9.625	19.723	.000
	willingness_to_pay	.011	1	.011	.016	.900
	price_intentions	4.159	1	4.159	6.865	.009
Error	brand_preference	149.988	296	.507		
	concern_for_price	144.441	296	.488		
	willingness_to_pay	208.908	296	.706		
	price_intentions	179.328	296	.606		
Total	brand_preference	4485.556	298			
	concern_for_price	4187.444	298			
	willingness_to_pay	3263.000	298			
	price_intentions	3848.000	298			
Corrected Total	brand_preference	165.192	297			
	concern_for_price	154.066	297			
	willingness_to_pay	208.919	297			
	price_intentions	183.487	297			
a. R Squared = .092 (Adjusted R Squared = .089)						
b. R Squared = .062 (Adjusted R Squared = .059)						
c. R Squared = .000 (Adjusted R Squared = -.003)						
d. R Squared = .023 (Adjusted R Squared = .019)						

Table 5. Parameter Estimates  
 Tabela 5. Wylczenie paramterów

Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
brand_preference	Intercept	2.291	.280	8.188	.000	1.741	2.842
	warranty	.366	.067	5.478	.000	.235	.498
concern_for_price	Intercept	2.473	.275	9.004	.000	1.932	3.013
	warranty	.291	.066	4.441	.000	.162	.420
willingness_to_pay	Intercept	3.242	.330	9.817	.000	2.592	3.892
	warranty	-.010	.079	-.126	.900	-.165	.145
price_intentions	Intercept	2.714	.306	8.869	.000	2.112	3.316
	warranty	.191	.073	2.620	.009	.048	.335

The table 3 shows the fitness of the One Way MANOVA because of the explanation of significant variation in the Warranty. Table 5 shows that the Wilks' Lambda = .857,  $F(4,293) = 12.2$ ,  $p < .05$ . Since significance value is less than .05, therefore it was concluded that there is a significant variation in dependent variables by Warranty.

Table 4 shows the models that were generated. It was found that out of four, three models were significant whereas one was found insignificant. Brand preference, concern for price, price intentions have significant

impact on warranty,  $F(1,296) = 30.005$ ,  $p < 0.05$ ;  $F(1,296) = 19.723$ ,  $p < 0.05$  and  $F(1,296) = 6.865$ ,  $p < 0.05$  respectively. On the other hand, willingness to pay has an insignificant impact on warranty  $F(1,296) = 0.016$ ,  $p > 0.05$ .

The Table 5 shows the testing of the four hypotheses which were developed earlier in the study. Four models had been generated in Table 4, having Warranty as an independent variable in all four models and brand preference, concern for price, willingness to

pay and price intentions as dependent variable respectively.

By the help of Table 5, again it was found that Sig values of the 3 models having brand preference, concern for price and price intentions as dependent variables are  $<0.05$  which stated the rejection of the Null Hypotheses and found that warranty has a significant impact on brand preference, concern for price and price intentions. In addition to this, the model in which willingness to pay was a dependent variable has shown the Sig value of 0.900, therefore in this model Null hypothesis is accepted (because sig value is  $> 0.05$ ) and the impact of warranty on willingness to pay was found insignificant.

In earlier studies warranty, brand and price were identified as preferred factors but since no study reported the impact of warranty on the customers' preferences towards brand and price, therefore this study has of significance importance. It was found a significant impact of Product warranty on Customers' Brand Preferences. It was observed in the IT product market that Customers used to give preference to the Brands having warranty while purchasing IT related products. For example, since Smart Phones of HTC are available without warranty but Samsung Galaxy series and Nokia Lumia series have been offered with warranty so customers usually prefer to buy Nokia or Samsung Smart Phones.

To sum up, customers, these days, need IT related products which has a warranty but it has to be branded, offered on competitive price, have more in less price but they are not willing to pay any additional amount for that product just because of the warranty. This seems logical and is also suggested to Pakistani manufacturers and marketers.

It is suggested to the future researchers that this study needed to be done in the other regions of Pakistan as well because their preferences might be different from the Karachi. In addition to this, it is also suggested to incorporate more factors other than brand and price into the research. On the other hand, it is also suggested to apply this study on other durable products like electronic items, machinery, automobiles and motor

vehicles etc. Lastly, it is also suggested to explore the dimensions of this research by dissecting the IT products category wise.

## CONCLUSION

Whenever a buyer purchases a product that is of high involvement, he always thinks about the risks that are associated with the purchase specially the post purchase risks. Such post purchase risks made the background to conduct this study. Therefore, the aim of this study was to identify the significance of the Product's warranty on Customers' preferences. Dimensions were identified from the available literature and on that basis four hypotheses were developed as evident in the conceptual framework in Figure 1. After applying the One Way MANOVA, it was found that warranty has a significant impact on customers' brand preferences, concern for price and price intentions whereas insignificant impact was found on customers' willingness to pay.

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## WPŁYW ISTNIENIA GWARANCJI NA ZACHOWANIE SIĘ KONSUMENTÓW: ANALIZA ODWRÓCONYCH MODELI LOGISTYCZNYCH

**STRESZCZENIE. Wstęp:** Wyroby IT stały się nierozwiązalną częścią naszego życia. W Pakistanie nie ma produkcji tych wyrobów, w związku, z czym, klienta są zmuszeni do zakupu produktów pochodzących z innych rynków. W trakcie zakupu klienci zwracają uwagę nie tylko na markę wyrobu i jego cenę, ale także na oferowaną gwarancję, która daje bezpieczeństwo w użytkowaniu produktu po zakupie.

**Metody:** Celem pracy było ocenienia wpływu istnienia gwarancji na preferencje zakupowe klientów w stosunku do marki i ceny produktów. Stworzono koncepcję badania na podstawie przeglądu literaturowego i następnie zebrano odpowiednie dane. Zostały one uzyskane od 298 respondentów w formie ankiety. Dane następnie poddano analizie statystycznej przy zastosowaniu Factor Analysis i One Way MANOVA.

**Wyniki i wnioski:** Stwierdzono, że istnienie gwarancji na istotny wpływ na preferencje zakupowe na wybór marki, choć stwierdzono istotnej zależności między istnieniem gwarancji a gotowością zapłacenia za produkt wyższej ceny. Na podstawie uzyskanych wyników stwierdzono, że pakistańscy klienci oczekują branżowych wyrobów IT w konkurencyjnych cenach, posiadające gwarancję jednak z drugiej strony nie są chętni do ponoszenia dodatkowych kosztów istnienia tej gwarancji..

**Słowa kluczowe:** gwarancja produktu, preferencje klientów, marka, cena, odwrócone modele logistyczne.

## EINFLUSS VON GARANTIE-LEISTUNGEN AUF DAS VERHALTEN DER VERBRAUCHER: ANALYSE DER REVERSIBLEN LOGISTIK-MODELLE

**ZUSAMMENFASSUNG. Einleitung:** IT-Produkte sind ein untrennbarer Teil unseres Lebens geworden. In Pakistan werden solche Produkte nicht hergestellt, daher sind die Kunden dazu gezwungen, die in anderen Ländern produzierten Ausrüstungen einzukaufen. Beim Einkauf von IT-Produkten nehmen die Verbraucher nicht nur Marke und Preis des jeweiligen Erzeugnisses sondern auch die angebotene Garantie-Leistung, die eine sichere Benutzung des Produktes nach dem Einkauf gewährleistet, wahr.

**Methoden:** Das Ziel der Arbeit war es, den Einfluss des Bestehens von Garantie-Leistungen auf die Einkaufspräferenzen der Kunden im Verhältnis zur Marke und zum Preis dieser Art Produkte zu beurteilen. Auf Grund einer Literaturrecherche wurden ein Forschungskonzept angenommen und dann entsprechende Daten erfasst. Sie wurden von 298 Respondenten in Form eines Umfrage-Bogens gewonnen. Nachfolgend wurden die Daten einer statistischen Analyse unter Anwendung von Factor Analysis und One Way MANOVA unterzogen.

**Ergebnisse und Fazit:** Man stellte fest, dass das Bestehen von Garantie-Leistungen die Einkaufspräferenzen und die Auswahl der Marke in einem wesentlichen Ausmaße beeinflusst, wobei man keinen wesentlichen Zusammenhang zwischen dem Bestehen der Garantie-Leistung und der Bereitschaft der Kunden zum Einkauf von Produkten zu einem durch die Garantie-Leistung bedingten, höheren Preis ermittelt hat. Auf Grund der gewonnenen Ergebnisse stellte man eindeutig fest, dass die pakistanischen Kunden das Angebot der IT-Erzeugnisse zu konkurrenzfähigen Preisen samt der Garantie gern wahrnehmen, jedoch andererseits nicht bereit sind, zusätzliche Kosten für die betreffenden Garantie-Leistungen in Kauf zu nehmen.

**Codewörter:** Produkt-Garantie, Kundenpräferenzen, Marke, Preis, reversible Logistik-Modelle

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