Measuring the Relationship Between Product Quality Dimensions & Repurchase Intention of Smart Phone: A Case study On Chittagong City

Sultana Razia Chowdhury Assistant Professor Department of Marketing Faculty of Business Studies Premier University, Chittagong Email: sultanaraziachowdhury_puc@yahoo.com Contact: 880-01714380711

Abstract: The purpose of this study is to explore the relationships between product quality dimensions and purchase/ repurchase intention of smart phone in Chittagong city. In order to achieve the objectives of the study, a sample of 650 users of smart phone were taken by using non- probability (judgmental & convenience) sampling technique. It is conclusive & primary data based research. Structured questionnaire on Likert Five point scaling technique is used in this study. Additionally, it is used in Garvin's eight-dimensional framework for product quality measurement as performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. It was selected and analyzed during the use of descriptive, correlation and multiple regressions' analysis by using (SPSS) version 17.0. From the analysis, it is clear that the Garvin's eight-dimensional framework of smart phone which supported by descriptive, correlation & regression analysis for this study. Moreover, aesthetics dimension (Look, Feel & sound) of smart phone as the most important dimension among all and it also prime mover in repurchase intention of smart phone. The study recommended that the marketer of smart phone should consider the above mentioned dimension to pick the opportunity.

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Keywords: Product Quality Dimensions, Satisfaction, Repurchase Intention, Smart Phone and Chittagong.

1. Introduction

Quality is the ability of product to have the customer's expectation. Quality is the totality of features and characteristics of a product or service that bear on it's ability to satisfy stated or implied needs (definition, 2010). Product quality has major impact on product performance .So, higher level of product quality leads to higher level of customer satisfaction which supports higher prices and lower cost. (Philip, 2012) Customer satisfaction is one kind of phenomenon that gains more customers, more revenue and more profit. Because satisfied customer can create good word of mouth about their good experience and they have to buy again same brand or store's product and new customer have to buy this branded product for other's good word of mouth . If it is tangible goods (as smart phone), consequently it is easier than intangible goods for showing the causes of satisfaction to others. Smart phone market is full of competition in whole global, not only Bangladesh or Asia. Marketer of smart phone has to stay in market with product quality & innovative features. Smart phone buyers are no sensitive about price but they seek the quality. Practically, quality is the key weapon of the business organization. A firm can create strong and concrete place in customer's mind through quality product. Because most of shoppings are happened on their existing brand due to perceived quality which leads to customer satisfaction. Higher customer satisfaction can have a strong competitive position by resulting in higher market share and profitability. (Fornell, 1992) Generally, a highly satisfied customer stays loyal longer on their existing brand, buys more and more as new and modified products by the company, and talks favorably to other customer about the brand, product and company, and pay less attention to competitor's offering, less sensitive to the price and less cost to serve the product or service than new customers because transaction can become routine. (Christaian Homburg, 2005) In connection, if customer fills satisfaction on product quality dimensions of the brand during searching stages, after that he buys that brand of product. In that case there is no need of pre-experience but brand reputation, brand trust, store recommendations is essential. Finally,

customer satisfaction is crucial factor in business organization (Deng, 2009) which totally depends on perceived quality product or service.

2. Significance of the study:

At October 2016, our total population of Bangladesh was 160 million & 120.728 million were mobile phone users. According to the BTRC website, a total of 60.03 million people use internet services on their smart phones among the total number of internet subscribers is 63.91million at the end of July, 2016.It indicates that maximum people use smart phone & using internet from it. Because smart phone is more portable device than laptop as it performs all of essential functions as laptop. That's why the number of smart phone user is drastically increased due to low proliferation of local, low cost smart phones has changed the users habit over the last few years. There is no official statistics for smart phone users but as a rough estimate, 1 million people use smart phone. (The Business Habit Blog) So, Bangladesh is a larger market for smart phone due to fast the economic development.

Product quality is significant factor for selection of Smart Phone Brand or model especially in Bangladesh as Chittagong because it is an open market. All of the international brands are available in dealer, branded & non branded electronic shop in our country. This research paper helps to customer of smart phone in determining the level of quality perceptions influence to purchase /repurchase intention of smart phone in especially Chittagong.

3. Objectives:

This paper aims to identify the relationship between product quality dimensions & repurchase intention of smart phone. In order to achieve this objective at first the study has to achieve following sub objectives which are given below:

- 1. To find out the product quality dimensions of Smart phone,
- 2. To find out the relationship between product quality dimensions with purchase/ repurchase intention and
- 3. To find out the relationship between satisfaction with purchase/repurchase intention.

4. Literature Review:

Smart Phone

A smart phone is a mobile phone with an advanced mobile operating system which combines features of a personal computer operating system with other features useful for mobile (Scoop, 2011) Additionally, a smart phone has the abilities to make and receive voice calls and messages, create and receive text messages, an event calendar, media player, video game, GPS navigation, digital photo and video camera, internet access, color display with a graphical user interface. Moreover, display of the Smart phone is a touch screen, which enables the user to use a virtual keyboard to type words and numbers and press on screen icons to activate "app" features. (WikiPedia)

Product Quality Dimensions:

Product quality are represent six dimensions as reliability, durability, easy maintenance, ease of use, a trusted brand name and low price in USA (McDaniel, 2011). Product quality was also measured by three attributes such as characteristics, benefits, and image (Lefkoff-Hagius, 1993), According to Garvin, there are eight critical dimensions or categories of quality that can serve as a framework for strategic analysis: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. Some of these are always mutually reinforcing; some are not. A product or service can rank high on one dimension of quality and low on another depends on customer desire (Garvin, 1987) .Several research papers have used Garvin's eight-dimensional framework (performance, reliability, conformance and durability), this four dimension used in (Alhire, 1996), (features and reliability), two dimension used in (Mandu, 1985), (reliability, aesthetics and performance), three dimension used in (Tamimi N.Sebastianelli, 1996).Now this study followed by Garvin's eight dimensional framework for identifying relationship between product quality dimension with purchase intention of smart phone.

Performance

Performance is product's primary operating characteristics. It is involved measurable attributes; brands can usually be ranked objectively on individual aspects of performance. Overall performance rankings, however, are more difficult to develop, especially when they involved in benefits that is not every consumer's needs. (Garvin, 1987)

Features

Features are secondary aspect of performance. It is additional or supplement their basic functioning. (Garvin, 1987)

Reliability

This dimension reflects that a product will not fail within a specific time period. (Menonijoti kalita, 2014) Among the most common measures of reliability are the mean time to first failure, the mean time between failures, and the failure rate per unit time. Reliability normally becomes more important to consumers as downtime and maintenance become more expensive. (Garvin, 1987)

Conformance

Conformance dimension is the degree which is a product's design and operating characteristics meet established standards. (Garvin, 1987)

Durability

Durability measures the length of product's life (Menonijoti kalita, 2014). Its dimension has two different individual dimension both economic and technical dimensions. Technically, durability can be defined as the amount of use one gets from a product before it deteriorates. Economically, consumer must evaluate the expected cost, in both dollars and personal inconvenience, of future repairs against the investment and operating expenses of a newer and more reliable model (Garvin, 1987).

Serviceability

Serviceability dimension is indicated the speed, courtesy of service personnel, proficiency of service organization and ease of repair (Garvin, 1987).

Aesthetics

How a product appeals to our five senses. Aesthetics is the subjective dimension—how a product looks, feels, sounds, tastes, or smells—is clearly a matter of personal judgment and a reflection of individual preference. (Garvin, 1987)

Perceived Quality

Perceived quality is also a subjective dimension but it is indicated the brand image and reputation of other product under the brand or company. Because the quality of products today is similar to the quality of products yesterday or the quality of goods in a new product line is similar to the quality of a company's established products.

(Garvin, 1987) On other hand, product quality has two different perspectives as objective quality and perceived quality (Brunso, 2005)

Customer Satisfaction:

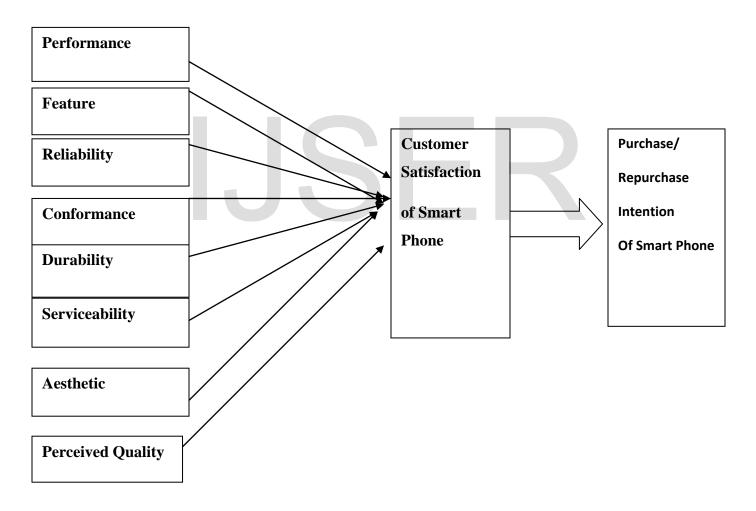
Customer satisfaction is a fulfillment response, it is a judgment that a product or service feature or the product or service itself, provide a pleasurable level of consumption related fulfillment. (Oliver, 1997)"It is the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product" (Tse, 1988) If the

performance falls short of expectation, the consumer is dissatisfied. If the performance exceeds expectation, the customer is highly satisfied or delighted. (Glenmick, 1999) Although consumer satisfaction tends to be measured at a particular point in time as if it were static, satisfaction is a dynamic, moving target which may evolve over time, influence by a variety of factors. (Mick, 1999). Customer satisfaction is influenced by specific product or service feature, perception of product or service quality and price. (Zeithaml A Valarie, 2011)

Purchase or Repurchase Intention

If the customers are satisfying, they will be loyal and repeat purchase, also have positive word of mouth, then the company will get more new customers. (Zeithaml, 2012). TARP found that 96% of the customer who are "very satisfied" and said they will "definitely repurchase" from the same company. The number drops sharply to only 52% for those customers who are "some what satisfied". Only 7% of customers who are "neutral" or very "dissatisfied" and said they will "definitely repurchase" (TARP World wide, Inc, 2007)

Proposed model: Relationship among Product Quality Dimension, Customer satisfaction & purchase/repurchase intention of Smart Phone



Hypotheses:

Ho1: Performance dimension of product quality has a positive influence on Purchase/ Repurchase Intention of Smart Phone.

Ho2: Feature dimension of product quality has a positive persuade on Purchase/ Repurchase Intention of Smart Phone.

Ho3: Reliability dimension of product quality has a positive influence on Purchase/ Repurchase Intention of Smart Phone.

Ho4: Conformance dimension of product quality has a positive persuade on Purchase/ Repurchase Intention of Smart Phone.

Ho5: Durability dimension of product quality has a positive effect on purchase/ Repurchase Intention of Smart Phone.

Ho6: Serviceability dimension of product quality has a positive connection on Purchase/ Repurchase Intention of Smart Phone.

Ho7: Aesthetic dimension of product quality has a positive association on Purchase/ Repurchase Intention of Smart Phone.

Ho8: Perceived Quality dimension of product quality has a positive relationship on Purchase/ Repurchase Intention of Smart Phone.

Ho9: Satisfaction has a positive relationship on Purchase/ Repurchase Intention of Smart Phone.

5. Methodology:

The paper is based on conclusive research and primary data. Questionnaire has two parts, first part carries personal information about respondent and second part carries research objective related questions. The questionnaire is precoded, structured & close ended. Likert Five point scaling technique has followed in this study, 1= Strongly Disagree, 2= Agree, 3=Neutral, 4= Agree, 5= Strongly Agree. Primary data has collected from 650 users of Smartphone on different brand in Chittagong city by direct personal interview since August, 16 to November, 16 with six groups of research students. Non-probability (Judgmental & Convenience) sampling technique has used for sample selection.

Statistical Package for Social Science (SPSS) version 17.0 used for data transcribing, analyzing and interpretation. Frequency analysis, descriptive analysis, correlation & multiple regression analysis used to elicit meaningful information.

Table 01: Different Brand of Smart Phone Users:

Brand	HTC	Huawei	iPhone	Oppo	Sam	Sym	Walt	Total
Name					sung	phony	on	
Users	35	40	50	125	125	125	150	650
Percentage	5.4	6.2	7.7	19.2	19.2	19.2	23.1	100

Table 02: Demographic Discussion of Respondent:

Demographic (Characteristics	Frequency	Percentage
Gender:	Male	464	71.4
	Female	186	28.6
	Total	650	100.0
Lives In :	Urban area	586	90.2
	Rural area	64	9.8
	Total	650	100.0
Marital Status:	Married	157	24.2
	Single	493	75.8
	Total	650	100.0
Age:	Less than 20 years	40	6.2



20 years to less than 30 years	466	71.7
30 years to less than 40 years	109	16.8
40 years to less than 50 years	27	4.2
50 years to less than 60 years	8	1.2
Total	650	100.0
Education: S.S.C. Completed	62	9.5
H.S.C. Completed	224	34.5
Under graduation completed (BA, B.Sc, BBA, MBBS	265	40.8
etc)		
Graduation completed (MA, M.Sc, MBA, MDS etc)	78	12.0
Post graduation completed (MPhil, PhD etc)	8	1.2
other	13	2.0
Total	650	100.0
Income: less than taka 30000	150	23.1
taka 30000 to less than taka 50000	212	32.6
taka 50000 to less than taka 70000	181	27.8
taka 70000 to less than taka 100000	77	11.8
taka 100000 or above	30	4.6
Total	650	100.0
Occupation: Student	396	60.9
Govt. organization	17	2.6
Private company	93	14.3
Businessmen/women	77	11.8
House wife	44	6.8
other	23	3.5
Total	650	100.0
Sources: September –October, 2016		

Analysis: Table 2 indicates that maximum respondents are male (71.2%), city/ urban (90.2%) & single (75.8%). Additionally, 71.7 % & 16.8% of the respondents are 20 years to 30 years old, 30 years to 40 years old respectively. Moreover, 34.5 % and 40.8% respondents are H.S.C. and under graduation completed respectively. 32.6% and 27.8% respondent's income are 30,000 taka-50,000 taka, 50,000 taka -70,000 taka respectively. Additionally, maximum respondents are student (60.9%) and employed in private organization (14.3%). It indicates that most of the respondents are 20 to 40 years, male, urban area, H.S.C. and under grade students & 30,000 to 70,000 taka earn in monthly.

6. Study Findings:

Product quality dimension	Ν	Mean	Std. Deviation	Rank
Average of Performance	650	3.9657	.75677	7
Average of Feature	650	3.9681	.69560	3
Average of Reliability	650	3.8827	.68257	2
Average of Conformance	650	4.0133	.74421	6
Average of Durability	650	3.8623	.81343	8
Average of Serviceability	650	3.8826	.71790	4
Average of Aesthetic	650	3.9991	.66630	1
Average of Perceive quality	650	3.9441	.71938	5

Analysis: This study found from above descriptive statistics table that Aesthetic achieves first ranked among various factor of Smart Phone. It is also found from the literature review, customers have choices about the smart phone on base of looks, feels & sound that represent Aesthetic. Reliability has stood in second position on factors to influence customer satisfaction. Normally, customers evaluate the brand of smart phone on the bases of consistency of product functions that represent reliability. Feature has stood third position on product quality dimension Because customers take purchase decision of smart phone on the bases of different innovative features. Serviceability has achieved fourth position on product quality dimension. Causes customers also look at organizational proficiency of service quality & speed. Perceived quality has achieved fifth position on product quality dimension. Moreover, perceived quality means customer's psychological position after using the product which is called experience. If customer's experience is well, then he buys same branded product again. Conformance quality of product has stood sixth position on product quality dimension. Because conformance quality means that meet the promised performance of the product which also considers buying smart phone. Performance and Durability have stood seventh and eight positions respectively. Generally, customers provide less attention on performance & durability than others dimension on product quality of smart phone. Presently, smart phone is a fashion product that the customers buy when new model or versions of the product is available in the market.

 Table 04: Correlation Table: Product Quality Dimensions of Smart Phone with Purchase/ Repurchase

 Intention of Smart Phone:

Product Quality Dimensions	Purchase/ Repurchase Intention
Average of Performance	.527**
Average of Feature	.585**
Average of Reliability	.612**
Average of Conformance	.654**
Average of Durability	.601**
Average of Serviceability	.667**
Average of Aesthetic	.644**
Average of Perceived quality	.637**
Average of Satisfaction	.746**

*** Correlation is significant at 0.01 level of Significance (2- tailed test), N=650

Analysis: Correlation table reveals that product quality dimensions of smart phone are highly correlated with purchase/repurchase intention of it. Six factors of product quality dimensions are highly correlated with purchase/repurchase intention of smart phone. Pearson correlation coefficient of serviceability, conformance, aesthetic and perceived quality, reliability and durability of smart phone are highly associated with purchase/repurchase intention are 0.667, 0.654, 0.644, 0.637, 0.612 and 0.601 respectively. Additionally, other two factors as feature & performance of smart phone have moderately associated with purchase/repurchase intention are 0.585 and 0.527 respectively. Moreover, customer satisfaction has highly positive correlation with purchase/repurchase intention of smart phone. Finally, this study has indicated that each dimension of product quality leads to influence purchase/ repurchase intention of smart phone. It also specify that customer satisfaction after buying or satisfaction in shopping also guide to purchase/ repurchase intention of smart phone.

Table 05: Multiple regression results of dependent and independent variables:

Anova							
Model 1 Sum of Squares df Mean Square F Significance							
Regression	237.102	8	29.638	114.387	.000 ^a		

R square 0.588, Adjusted R Square 0.583, R 0.767, Standard Error 0.50902

Coefficients							
Model 1	Un standardized		Standardized	t	Sign.		
	Coef	ficients	Coefficients				
	В	Stand	Beta				
		Error					
(Constant)	.081	.136		.549	.600		
Average of Performance	031	.041	030	.448	759		
Average of Feature	018	.051	016	.724	354		
Average of Reliability	.064	.047	.055	.176	1.354		
Average of Conformance	.170	.045	.160	.000	3.756		
Average of Durability	.136	.037	.141	.000	3.727		
Average of Serviceability	.309	.045	.282	.000	6.934		
Average of Aesthetic	.109	.053	.092	.039	2.069		
Average of Perceive quality	.246	.044	.224	.000	5.583		

b. Dependent Variable: Average of Purchase/ Repurchase Intention

Anova

	Model 2	Sum of Squares	Df	Mean Square	F	Significance	
	Regression	224.289	1	224.289	812.413	.000 a	
n	D.G.,, 0.55(A.F						

R Square= 0.556, Adjusted R Square =0.556, Error=0.525

|--|

Model 2	Un standardized Coefficients		Standardized Coefficients	Т	Significance	
	В	Std. Error	Beta			
Average of Satisfaction	0,984	.035	.0.746	28.503	0.000	
Denoted W. 11. A second CD at a / Denoted by Letter						

a. Dependent Variable : Average of Purchase/ Repurchase Intention

Analysis: In this paper, there are eight independent variables named performance, feature, reliability, conformance, durability, serviceability, aesthetic and perceived service quality considered to influence the purchase/ repurchase intention of smart phone. Before analyzing the data by multiple regressions, it is appropriate to test the presence of multicollinearity among the independent variables. In Model 1, calculated value of R square 0.588 is greater than table value of R square 0.4, it has indicated that the multicollinearity relationship exist in among the independent variables. The adjusted R square 0.583 indicates 58% of variances in purchase /repurchase intention of smart phone can be predicted by the eight variables used in this research study. On other hand, there are other variables that influence purchase/ repurchase intention of smart phone users is represented by the remaining 42%. In Model 2, the adjusted R square 0.556 indicates 55% of variances in purchase /repurchase intention of smart phone can be predicted by the customer satisfaction which is used in this research study. Now the study will prove the hypotheses by above regression analysis in following tables:

Table 06: Hypotheses test on the bases of Regression analysis:

Table 00. Hypotheses test on the bases of Regression analysis.					
Null Hypotheses	Calculated	Accepted/	Alternative Hypotheses		
	Value of t	Rejected			
Ho1: Performance has positive influence on	759	Rejected	Ha1: Performance has no positive influence		
Purchase/ Repurchase Intention.			on Repurchase Intention.		
Ho2: Feature has positive persuade on Purchase/	354	Rejected	Ha2: Feature has no positive persuade on		
Repurchase Intention.		_	Repurchase Intention		
Ho3: Reliability has positive influence on	1.354	Rejected	Ha3: Reliability has no positive influence on		
Purchase/ Repurchase Intention.			Repurchase Intention		

Table Value of t =2.00 at P value 0.05

Null Hypotheses	Calculated Value of t	Accepted/ Rejected
Ho4: Conformance has positive persuade on Purchase/ Repurchase Intention.	3.756	Accepted
Ho5: Durability has positive effect on Purchase/ Repurchase Intention.	3.727	Accepted
Ho6: Serviceability has positive connection on Purchase/ Repurchase Intention.	6.934	Accepted
Ho7: Aesthetic has positive association on Purchase/ Repurchase Intention.	2.069	Accepted
Ho8: Perceived Quality has positive relationship on Purchase/ Repurchase Intention.	5.583	Accepted
Ho9: Satisfaction has positive relationship on Purchase/ Repurchase Intention.	28.503	Accepted

Table Value of t =2.00 at P value 0.05

Analysis: The above table reveals that first three Hypotheses are rejected due to calculated value of t is less than the table value of t at p value 0.05. It indicates that there are no positive & liner relationships among performance, feature & reliability with repurchase intention of smart phone. It means that our users have not considered performance, feature and reliability dimension of smart phone in purchase situation. Moreover, last five Hypotheses of Model 1 has accepted due to calculated t value 3.756, 3.727, 6.934, 2.069 & 5.583 respectively are greater than table value of t=2.00. It indicates that conformance, durability, serviceability, aesthetic & perceived quality dimensions of smart phone have positively & liner relationship with purchase/ repurchase intention of smart phone. Additionally, Hypotheses Ho9 is also accepted due to calculated value of t 28.503 at level of significance P 0.000 is greater than table value of t 2.00 at level of significance P 0.05. It indicates that customer has satisfied on product quality dimensions after using the product or alternative search stage in decision making process, the customer will buy the product and vice versa. Finally, this paper reveals that the majority of the variance in purchase/ repurchase intention of smart phone can be predicted by the five variables as conformance, durability, serviceability, aesthetic and perceived service quality and customer satisfaction is also indicator of purchase/ repurchase intention of smart phone can be predicted by the five variables as conformance, durability, serviceability, aesthetic and perceived service quality and customer satisfaction is also indicator of purchase/ repurchase intention of smart phone .

7. Conclusion:

The objective of this research has to investigate the relationships that determine the repurchase intention of smart phone. According to the descriptive statistics, aesthetic quality dimension has more priority in repurchase intention of smart phone. It indicates that customers emphasis on looks, feels & sound, when they buy smart phone, because they are young & smart.

Moreover, according to the Pearson correlation results reveals that serviceability, conformance, aesthetic and perceived quality, reliability and durability of smart phone are the dominating dimension to repurchase intension of smart phone. Additionally, regression analysis reveals that conformance, durability, serviceability, aesthetic & perceived quality dimensions are positive & liner relationship with repurchase intention. Moreover, customer has satisfied on product quality dimensions after buying the product or before buying the product, the customer will buy the product. Finally, this paper reveals that all of the dimensions are positively correlated with repurchase intention but few dimensions are more important to purchase intention as aesthetic quality, conformance quality, durability, serviceability, perceived quality which is supported by descriptive, correlation & regression. So, it has seen from the above discussion that there are eight dimensions of product quality customers consider before/after choosing brand of smart phone. That's why, marketer play significant contribution on Garvin's eight-dimensional framework of product quality of smart phone that leads to future purchase intention.

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