

# Preference on Quality Dimensions when Purchasing Undergarments: A Case Study of Dhaka City in Bangladesh

\*Tanvir Ahmed Chowdhury, Md. Mominur Rahman, Alamgir Hossain, S.M. Mahub U1 Haque Majumder

Department of Textile Engineering, Daffodil International University

Email: tahmed@daffodilvarsity.edu.bd

**Abstract:** The Bangladeshi garments manufacturers are emphasizing on local market besides exporting with reputation. Undergarments are a very common product for both male and female. The main objective of this study was to find out the perception of consumers of Dhaka city while buying undergarments. Specifically, this study tried to discover the impact of gender and age group of customers on dimensions of quality during purchasing undergarments in Dhaka city, Bangladesh. To conduct this work, Dhaka city was divided into two parts-DNCC and DSCC. A total 766 male and 750 female customers were interviewed face-to-face perfectly. To get the desired objectives of this study, logistic regression analysis was done. It was found that about 75% of female customer prefers fiber type, hand feel and outer appearance. Again, about 80% male favor fiber type and hand feel like female but unlike female they prefer elasticity instead of outer appearance. Most of the customers of aged 12 to 18 years prefer hand feel, outer appearance and elasticity whereas greater share of age group (19 to 30) years, (31 to 50) years and above 50 years prefer fiber type instead of outer appearance although the percentages of customer are different in choosing the mentioned aspects of quality. This study discovered that the preferences to dimensions of quality differ not only among genders but also among customers of different ages. As a result, manufacturers should take it into consideration while producing undergarments.

**Keywords:** Preference, Dimensions of Quality, Undergarments, Customers, Dhaka City.

## 1. INTRODUCTION

Shu-Hwa Lin [1] studied that the manufacturing industries are going through huge competition due to globalization of markets and their quick developments. Manufacturers of garments are facing extreme challenge due to fast change of business environment with respect to market performance, global contest and changing technology.

There is complex relation between dressing and also the plan of individual expression. Many people express their feelings of their mind wearing dresses of particular contrasts and colors. Hence, the buying of apparel is greatly dependent on the properties of

product like comfort, design, individuality, etc. which may differ depending on some factors, primarily on gender [2]. G. Raj Kumar and V. Krishnaveni [3] investigated that Performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality are the eight major dimensions of quality. Helena M.De Klerk and Stephna Lubbe [4] divided the Quality of garments into two dimensions like physical dimension and behavioral dimension where first dimension indicates what the garments product is and second dimension expresses what the product can achieve. Chaykowsky's [5] study on UK consumers found that fit, size, quality, color, durability, originality, fabric, comfort and print type are determining factors to buy a garments. The consumers' personal characteristics like age, occupation, economic conditions, lifestyle, personality and self-concept have an influence on the buying behavior of consumers [6].

Rosanna [7] made a survey for better understanding of the men's underwear consumer is needed, a qualitative research design was developed, with the in-depth interview used as the primary data collection method. A total of 15 participants, eight males and seven females, aged 23-55 were interviewed. The interview method is the most direct way to obtain specific information from the consumers. Kavisha et al.[8] carried out a survey in Australia. Two focus groups were conducted with young adult fashion apparel consumers in Perth, Western Australia. One had ten female participants, while the other had ten male participants. Participants felt style attributes, such as fit, fashionableness and color, influenced their purchase decisions. Amit [9] conducted a survey in India and revealed that age group of 15-20 Indian consumers; buy less than age group of 21-25 and this trend exists because 21-25 is the age where people start to work. Buying behaviors towards type of brand by the consumer's mainly depend upon their awareness, perceived quality and brand loyalty about the brand. On an average, 63 percent of the consumers prefer domestic brand, which was followed by international brand (37 percent). Elizabeth and

Cynthia [10] carried out a survey on Mexican-American females. They found that intrinsic attributes are more important than extrinsic attributes, suggesting that product feature can be manipulated to satisfy customer demands. Attributes seems to different for buying different garments. Fit/ sizing is an important feature of customer demand. Lee, J., & Nguyen, M. J [11] conducted a study on Vietnamese consumers. This study found a significant relationship between Vietnamese consumers' subjective norm in purchasing American fashion brands and their preference for American fashion brands, of American fashion brands, which they do not find from local brands. However, they might not want to purchase from American fashion brands due to its high cost. Price is an important attribute of the product among Vietnamese consumers, being rated as extremely important or important by 66% of the participants. On the other hand, Vietnamese consumers perceive that American fashion brands as offering higher quality and more prestigious products than local brands. Naayema and Nabila[12] conducted a survey in Bangladesh on consumer behavior towards clothing. They revealed that Consumers pursue benefits in terms of some *material or functional attributes*, i.e., value for money (price, quality, customer service), shopping time (time in product selection, incompetence in bargain shopping) and some *psychological or symbolic attributes*, i.e., distinctiveness (uniqueness, experiment on aesthetic design, personal identity, personality, self-image), ethnicity (organic handloom, creativity with sound fabric sense, manifestation of cultural values, heritage).Nurunnobi et al.[13] revealed fashion attributes about the young Bangladeshi customer perception for t-shirt and denim pant. The results show that 35.2% customer give priority to color in purchasing t-shirt where 33.2% customer prefer black color and 31.2% to white color t-shirt. On the other hand, 50.8% customers want comfortable t-shirt where 60% customers want medium weight (130-160 GSM) fabric for body fabric of t-shirt. Most of the customers (32%) want printed (image) t-shirt and 46% customers like neck with body fabric type t-shirt. 42.8% customers want quality full denim pant where 55% customers give attention to the performance (washing fastness, light fastness, durability etc.) of denim pant.. Undergarments are such products which are unavoidable for both male and female customers. It was found in the literature review that no study has been conducted in Bangladesh to identify the requirements of Bangladeshi customers when they purchase undergarments. The purpose of this study was to find out the preferences to dimensions of quality by the consumers of Dhaka, the capital city of Bangladesh while buying undergarments.

## 2. MATERIALS & METHODS

**A. Design:** Although the main concern of the study was to conduct a survey on perception of a representative sample of consumers in Dhaka city during buying undergarments to provide quantitative data, qualitative tools of data collection was also essential. As the Dhaka city is divided into Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC), consumers of both city corporations has been covered in this study. All categories of markets in the mentioned two city corporations taken into consideration to get various types of customers.

**B. Qualitative data:** To deliberate information needs with main stakeholders and to prepare draft questionnaire, ask feedback and to settle questionnaire, a number of (8) individual interviews (Key Informant Interview) and 3 FGDs (Focus Group Discussion) has been conducted. KII and FGDs were organized with focal persons involved with selling undergarments and academicians of quality management. The size of FGDs was 6 to 8 per FGD ensuring representation of both sellers of undergarments and quality management experts.

**C. Sampling Method:** The sampling was done in the markets of both DNCC and DSCC. The sampling units for this study were markets of Dhaka city while the unit of analysis was customer of undergarments. It was thought that two stage stratified sampling would be suitable for selecting the sample respondents in this study.

**D. Two stage stratification:** It was planned to use stratification of DNCC and DSCC as two strata. Five markets from each of the regions were chosen by "lottery method" at the first stage. At the second stage, required number of male and female customers from each of the selected markets was taken by simple random sampling.

**E. Sample Size:** A representative number of samples were taken to report the output level of indicators. Since the number of total male and female customers was unknown, the following formula was used to determine the sample size.

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where, n=sample size, p is the proportion of the population having the characteristics, d=degree of precision. Assuming p=0.5 (since the population is unknown), at 95 % confidence level (value of z score is 1.96) and 5% marginal error, the sample size became=384.16 $\approx$ 385 for each of the male and female groups in each of the regions.

Hence the sample size in each region was  $385 \times 2 = 770$  and total sample size in both regions was 1540.

Now, since five (5) markets from each of the regions were selected, the number of respondents from each market became  $(770/5) = 154$  out of which 77 were male and 77 were female.

**F. Research tools:** The instruments of this study were prepared based on the objectives and scope of the work. A well-structured questionnaire was formed by which the consumers expressed their first preference to dimension of quality while purchasing undergarments including demographic background (like- age, gender and residence). The following two major categories of study instruments as stated below were developed to gather data from different informants:

**TABLE I. INSTRUMENT USED IN RESEARCH WORK**

Instrument	Informant
1. KII and FGD guidelines	Undergarments sellers and quality management experts
2. Interview questionnaires	Customers of undergarments

**G. Data collection and data analysis tools:** The data were collected from the respondents by 10 groups of well-trained data collectors where each of the groups were formed with two male and two female members. The group members took face-to-face interview and before taking the interview they describe the procedure of filling the form and dimensions of quality. It was taken 20 to 25 minutes for each interview.

After data entry, data consistency was checked by frequency analysis. In case of any inconsistencies, data were verified with the questionnaire of the study. Data analysis was carried out using software SPSS and appropriate statistical tools were developed for describing the influence of demographic background of consumers on the dimensions of quality during buying undergarments. Descriptive statistics were used to calculate the percentages of different variables of dimensions of quality with respect of gender and age group of the customers while buying under garments. Then Chi-Square test was performed for testing the association between dimensions of quality and gender of customers as well as between dimensions of quality and age group of customers where the significance level of p-values was set at  $<0.05$ . Finally, logistic regression analysis was done to identify potential predictors of buying nature of under garments of customers of Dhaka city. For this study, the dependent variable is a binary variable representing the dimensions of quality of under garments.

### 3. RESULT & DISCUSSION

In this study, a total of 1516 out of 1540 customers responded accurately where male and female was 766 and 750 respectively. Among the total number of respondents there were four age groups of (12-18) Years, (19-30) Years, (31-50) Years and above 50 Years. The frequency of respondents in different age groups was 15.20%, 42.50%, 35.00% and 7.30% respectively.

**A. Preference of Hand Feel:** The overall preference of hand feel was 27.4 % where female customer prefers hand feel more than male. But it is not significant at  $p < 0.05$ , so there is no association between gender and hand feel while they buy undergarments [Table II]. Again in terms of age groups p value 24.239 shows that there are association between age groups and hand feel thus (12-18) Years customers prefer hand feel more (39.6%) than any other age groups where above 50 years customers prefer minimum (18.2%) than others while other two age groups are very close though (31-50) Years age group prefers more (27.5%) hand feel than (19-30) Years age group (24.7%) [Table III]. Again Table 3 of logistic regression shows, (12-18) Years age group prefer maximum hand feel which is 2.946 times while (19-30) Years and (31-50) Years age group prefer 1.472 and 1.706 times hand feel than Above 50 Years age group [Table III].

**B. Preference of Durability:** Overall 3.3% customers prefer durability as one of the dimensions of quality during buying under garments where female customers gives higher priority on the durability aspect and p value shows that there is significant difference in durability in terms of gender [Table II]. Again, in terms of age group  $p < 1\%$  represents there is association thus we found above 50 Years age group prefers durability mostly (10.9%) and 7.2% customers of (31-50) prefer durability as their desired one of the quality dimensions while other two age groups are not interested of durability to their under garments buying [Table II]. Logistic regression in Table 3 shows that all other age groups gives less preference on durability as their expected dimension of quality than Above 50 Years while they buy under garments.

**C. Preference of Fiber Type:** Table II shows that 27.4% customers choose their undergarments on the basis of fiber type where 29.7% and 25.2% respectively female and male customers give priority on fiber type [Table II]. As p values for both gender and age groups with respect to fiber type is respectively significant at 5% and 1% which represents the association as female customers give

more preference on fiber type than male customers as well as all other age groups give less preference on fiber type than above 50 Years age group [Table II, III, IV]. Again Table 3 shows that above 50 Years customers (33.6%) give more preference on fiber type while (12-18) Years customers (2.6%) give less

preference on fiber type, and other two age groups (19-30) and (31-50) Years are very close which lies between 31.8% to 31.6% respectively [Table III].

**TABLE II. ASSOCIATION BETWEEN DIMENSIONS OF QUALITY AND GENDER OF CUSTOMERS**

Dimensions of Quality	Gender (%)			Chi- Square Value
	Male	Female	Total	
Hand Feel	25.7	29.2	27.4	2.308
Outer Appearance	0.4	16.1	8.2	125.035**
Durability	0.1	6.5	3.3	48.711**
Fiber Type	25.2	29.7	27.4	3.919*
Brand	18.1	10.7	14.4	17.154**
Elasticity	30.4	7.7	19.2	125.723**

\*p<0.05, \*\*p<0.01

**TABLE III. ASSOCIATION BETWEEN DIMENSIONS OF QUALITY AND AGE GROUP OF CUSTOMERS**

Dimensions of Quality	Age (%)				Chi- Square Value
	(12-18) Years	(19-30) Years	(31-50) Years	Above 50 Years	
Hand Feel	39.6	24.7	27.5	18.2	24.239**
Outer Appearance	20.9	9.1	2.4	3.6	76.368**
Durability	0	0	7.2	10.9	74.604**
Fiber Type	2.6	31.8	31.6	33.6	84.158**
Brand	9.6	16	15.3	11.8	6.539
Elasticity	27.4	18.4	16	21.8	14.159**

\*\*p<0.01

**D. Preference of Brand:** Overall 14.4 % customers prefer brand under garments, as association between gender and brand shows p<0.01 thus 18.1% male customers prefer brand which is greater than female customers (10.7%) [Table II]. Again, association between brand and different age groups represents that it is no significance at p<0.05 so there is no difference of preference in terms of hand feel for different age groups though 31.3% customers of (19-50) Years give preference on brand while buy their undergarments [Table IV]. Logistic regression shows that with respect to female customers, male customers prefer branded undergarments 1.857 times [Table IV].

**E. Preference of Elasticity:** As p value 125.723 is highly significant thus represents male customers (30.4%) prefer elasticity more than female customers (7.7%) while overall 19.2% customers prefer elasticity as their desired dimensions of quality during buying their undergarments [Table II]. On the other hand, in terms of different age groups p value of 14.159 is highly significant which represents most 27.4% of (12-18) Years customers prefer elasticity while 21.8%, 18.4% and 16 % customers give preference on elasticity of above 50 Years, (19-30) Years and (31-50) Years consecutively [Table II]. Again, logistic regression shows that with respect to above 50 Years customers (12-18) Years customers give 1.572 times preference on elasticity but other age groups give

less preference, besides male customers give 5.539 times preference on elasticity than female customers while buying undergarments [Table IV].

**TABLE IV.** LOGISTIC REGRESSION OF DIMENSIONS OF QUALITY, AGE GROUP AND GENDER OF CUSTOMERS

Age and Gender	Hand Feel		Outer Appearance		Durability		Fiber Type		Brand		Elasticity							
	Exp (B)	95 % C.I. for Exp (B)		Exp (B)	95 % C.I. for Exp (B)		Exp (B)	95 % C.I. for Exp (B)		Exp (B)	95 % C.I. for Exp (B)							
		Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper						
(12-18) Years	2.946	1.696	5.116	7.512	2.549	22.142	0.000	0.000	.	0.052	0.021	0.127	NA	NA	NA	1.572	0.891	2.773
(19-30) Years	1.472	0.878	2.468	2.341	0.813	6.736	0.000	0.000	.	0.897	0.584	1.380	NA	NA	NA	0.919	0.547	1.544
(31-50) Years	1.706	1.014	2.872	0.688	0.215	2.201	0.302	0.302	1.307	0.918	0.593	1.421	NA	NA	NA	0.640	0.376	1.089
Male	NA	NA	NA	0.020	0.006	0.064	0.013	0.002	0.095	0.763	0.604	0.964	1.857	1.381	2.496	5.539	4.050	7.577

NA=No Association

#### 4. CONCLUSION

Overall analysis reveals that in case of both gender and age groups, when customers buy under garments they prefer hand feel, fiber type and elasticity mostly where three fourth of total customers prefer hand feel, fiber type and elasticity during buying under garments whether female customers prefer fiber

type and hand feel more which is near about 60%, though they also prefer outer appearance as their third preference. On the other hand, above 80% male customers prefer elasticity, fiber type and hand feel as their preference but they are not so much interested with outer appearance like female whether they are opt to brand during buying under garments. Despite of gender factor in case of different age groups above 85% customers of (12-18) Years prefer hand feel, elasticity and outer

appearance while (19-30) Years customers mostly prefer fiber type (31.8%) which is little bit higher (33.6%) in case of above 50 Years customers. Besides male customers are more aware about brand than female but female are more opt to outer appearance and durability. Again, for most cases preferences to fiber types and durability is gradually increased though customers of below 30 years age are not concerned about durability whether outer appearance preference is gradually decreased with respective to age. So, this study reveals the customer preferences of quality dimensions regarding buying under garments in Dhaka City which is closely related to local garments production and marketing though the economic status of the customers is not considered here.

### REFERENCES

- [1] Lin, S.H., Kincade, D.H. and Warfield, C. Productivity and production in the apparel industry. *International Journal of Clothing Science and Technology*, 1994, 6(1), 20-27. doi: <https://doi.org/10.1108/09556229410054477>
- [2] Fischer, E. and Arnold, S.J. Sex, gender identity, gender role attitudes, and consumer behavior. *Psychology & Marketing*, 1994, 11(2), 163-182. doi: <https://doi.org/10.1002/mar.4220110206>
- [3] G. Raj Kumar and V. Krishnaveni, (2009), Coimbatore, Apparel Quality Inspection, Kumaraguru College of Technology.
- [4] De Klerk, H.M. and Lubbe, S. Female consumers' evaluation of apparel quality: exploring the importance of aesthetics. *Journal of Fashion Marketing and Management: An International Journal*, 2008,12(1), 36-50.
- [5] Chowdhury, T.A. and Akter, T. Fashion attributes preferred by young Bangladeshi consumers while buying casual clothes: A multi-dimensional approach. *Journal of Fashion Marketing and Management: An International Journal*, 2018,22(4), 540-556. doi:<https://doi.org/10.1108/JFMM-02-2018-0018>
- [6] Rani, P. Factors influencing consumer behavior. *International Journal of Current Research and Academic Review*, 2014, 2(9), 52-61.
- [7] Hale, R. and Hodges, N., 2013. Men's branded underwear: an investigation of factors important to product choice. *Qualitative Market Research: An International Journal*, 2013, 16(2), 180-196. doi: <http://dx.doi.org/10.1108/13522751311317585>
- [8] Jegethesan, K., Sneddon, J.N. and Soutar, G.N. Young Australian consumers' preferences for fashion apparel attributes. *Journal of Fashion Marketing and Management: An International Journal*, 2012,16(3), 275-289. doi: <http://dx.doi.org/10.1108/13612021211246044>
- [9] Chakrapani, A. Consumer behavior and preferences of Indian consumers towards apparel purchase in retail markets of India. *Innovative Journal of Business and Management*, 2015, 4(04), 94-100. doi:<https://doi.org/10.15520/ijbm.vol4.iss4.31.pp94-100>
- [10] Hopfer, E.N. and Istook, C. The importance of apparel attributes among young Mexican-American female consumers. *Journal of Textile and Apparel, Technology and Management*, 2016,10(1).
- [11] Lee, J. and Nguyen, M.J. Product attributes and preference for foreign brands among Vietnamese consumers. *Journal of Retailing and Consumer Services*, 2017, 35, 76-83. doi:10.1016/j.jretconser.2016.12.001
- [12] Ahmed, N. and Ahmed, N. Consumer behavior towards clothing apparel of designer brands: a study on the boutiques and fashion houses in Bangladesh. *Journal of Business Studies*, 2013, 34(3), 197-217.
- [13] Nurunnobi, N., Prasad, R. and Arifuzzaman, M. Buying behavior of young customers in Bangladesh—a movement towards investigation of their fashion attributes. *International Journal of Textile Science*, 2016, 5(1), 19-24. doi: 10.5923/j.textile.20160501.03