Chapter 4

SEGMENTS OF THE ONLINE SHOPPERS

4.1 Identifying the Factors

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4.3 The Inter Cluster Dissimilarity in Prominence Attached to the e-SQ Factors

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4.5 A Summary of the Segment Profiles

This Chapter presents a segmentation analysis of the online shoppers by first applying factor analysis across all the 43 (forty three) e-SQ variables discussed in the previous Chapter and then using cluster analysis to identify homogenous segments of the shoppers. Later the segments of shoppers have been profiled according to the demographic and psychographic variables as mentioned in the Chapter on methodology.

4.1 Identifying the Factors:

Reducing the number of dimensions into minimum possible number of factors is necessary to extract meaningful segments of the respondents. Thus, the technique of factor analysis has been employed for reducing the 43 dimensions and summarizing the factors. Before proceeding for factor analysis, it has been tested whether factor analysis is appropriate for the data set. In order to do so, two measures are employed. Firstly, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is done to compare the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. Whereas a value greater than 0.5 is desirable for factor analysis (Malhotra 616), the value for this data set is found to be 0.93, indicating appropriateness for applying the technique. Secondly, the Bartlett's test of sphericity to test the hypothesis that the variables are uncorrelated in the population, is found to be up to the requirements of factor analysis, by rejecting the null hypothesis (with $p = 0.00$). The data were also checked for Normality by using Shapiro-Wilk tests which tested the null hypotheses that the data for each variable are normally distributed. The tests returned *p* values less than 0.05 for all the variables, signifying that the data are not normally distributed. But it was decided to proceed with parametric tests like ANOVA *etc*. since 864 (no. of samples in this study) is an adequately large number (Norman 628).

After ensuring the appropriateness of factor analysis, the Principal Component Analysis approach is employed to generate the factors. This approach is being

considered since the primary concern here is to determine a minimum number of factors that will account for maximum variance in the data for use in subsequent multivariate analysis. Then the Principal Component Analysis with Varimax rotation is run on the 43 e-SQ variables to unearth the underlying factors (the Rotated Component Matrix is shown in Appendix B). Only those factors with eigenvalues greater than 1 are extracted. As a result, 9 (nine) factors are generated which accounted for 59.51 % of the total variance, an acceptable measure when rounded off to 60% (Malhotra, 619). This is represented in the Table 4.1 below.

Table 4.1: Total Variance Explained

Component	Initial Eigenvalues	% of Variance	Cumulative %
1	11.914	27.770	27.770
2	2.844	6.613	34.383
3	2.406	5.594	39.977
4	1.947	4.527	44.504
5	1.639	3.812	48.316
6	1.443	3.355	51.671
7	1.282	2.981	54.652
8	1.085	2.524	57.176
9	1.005	2.338	**59.514**

Extraction Method: Principal Component Analysis

Further, the reliability of the factors has been assessed through Cronbach's alpha. All the factors except factor no. 8 have shown Cronbach's alpha of around 0.7 (Table 4.2). The Cronbach's alpha of factor 8 is 0.595 which can roughly be taken as 0.6 or 60%. Therefore, all the factors can be said to possess reliability of satisfactory level (Malhotra 285). Hotelling's T-Squared Test is also used to check that all the items on the scale do not have the same mean. For interpreting the factors, factor loadings of 0.30 or more have been considered (Hair *et al.* 111). The factors are shown in Table 4.2 along with the factor loadings for each item and the Cronbach's alpha (reliability coefficient) for each of the factors. Factors have also been given a particular name that commonly reflects the items (dimensions) it possesses.

Table 4.2: All Nine Factors and Underlying Dimensions (Items)

Functionality	Loadings	Responsiveness	Loadings
1. Rectification of mistake	0.751		
2. Availability of items in inventory	0.739	1. Tracking the shipments	0.752
3. Ease of cancellation	0.736	2. Clear return policy	0.705
4. Accurate transaction record	0.732	3. Compensation for mistakes	0.681
5. Presence of security symbols	0.731	4. Many choices of payment	0.639
6. In-transit damage insurance	0.703	5. Immediate response to query	0.635
7. Response to emergency order	0.659	6. Correct refund	0.626
8. Less transaction links	0.570	7. Sincere interest in problem solving	0.513
9. Presence of reputed brands	0.529	8. Follow up confirmation	0.474
10. Ease of understanding product info	0.408		
11. Clear mention of delivery time schedule	0.375		
Cronbach's alpha = 0.894		*Cronbach's alpha = 0.878*	
Usability		**Reliability**	
1. Speed of transaction	0.679	1. Correct representation of the product	0.682
2. Ease of navigation	0.674	2. Warranty	0.668
3. Easy check out	0.638	3. Correctness of the info	0.640
4. Error free transaction	0.626	4. Product free from damage	0.589
5. Clarity of instructions	0.506	5. Delivered in ordered quantity	0.540
		6. Delivered in promised time	0.373
Cronbach's alpha = 0.730		*Cronbach's alpha = 0.731*	
Personalization		**Empathy**	
1. Maintaining product wishlist	0.778	1. Admission of mistake	0.662
2. Maintaining free homepage	0.774	2. Ease of communication with CCP	0.635
3. Searching history of previous dealings	0.688	3. CCP's ability to solve problems	0.635
4.Ease of remembering the site URL	0.682		
Cronbach's alpha = 0.763		*Cronbach's alpha = 0.825*	
Aesthetics		**Tangibility**	
1. Artistic look of the site	0.814	1. Minimum ads in the site	0.709
2. Attractive look of the shopping site	0.797	2. Virtual Demo of products	0.593
Cronbach's alpha = 0.720		*Cronbach's alpha = 0.595*	
Security			
1. Privacy	0.474		
2. Safety and security	0.409		
Cronbach's alpha = 0.669			

As per common convention, the factors are named based on most striking variables contained in a particular factor. Following paragraphs describe the same.

The first factor, containing 11 items, is given the name 'Functionality' as it contains dimensions relating to the functionality of the shopping site like lesser transaction links, rectification of mistakes, ease of cancellation of orders *etc*. It has got high reliability of 89.4% and accounts for 27.77% of total variance explained. The factor loadings of most of the 11 items are also significantly high.

The second factor termed 'Responsiveness' explains 6.61% of the total variance. It has 8 items like getting immediate response to a query, tracking the shipments, follow up confirmation of the order/transaction made online, clear return policy which ensures the responsiveness of a online marketer. The reliability of this factor is 87.8%.

Likewise, the third factor with 73% reliability, is given the name 'Usability' since it relates to items which enhance the usability features in online shopping like ease of navigation, having clear instructions, easier check out process *etc*. This factor has five items in it and explains 5.59% of the total variance of the data.

The fourth factor is labeled 'Reliability' as it has items that contribute towards enhancing the reliability of the online service like warranty of the products, delivery in ordered quantity and promised time, product being free from damage/mutilation *etc*. This factor contains six items with a Cronbach's alpha of 0.73 and explaining 4.53% of the variance.

The next factor contains items like maintaining product wishlist, free homepage, searching history of previous dealings and is named 'Personalization'. The items in this factor relates to the personalized features of the shopping site. It has four items explaining 3.81% variance and with 76.3% reliability.

The sixth factor is named 'Empathy' as it contains three items that pertains to the ability of the customer contact persons to understand and solve the customer's problems. It explains variance of 3.36% and with 82.5% reliability.

The seventh factor with two items relating to the look of the shopping site, arrangement of products, links *etc*. is named 'Aesthetics'. This factor accounts for 2.98% variance of the data and with a Cronbach's alpha of 0.72.

The last two factors, eighth and the ninth, labeled 'Tangibility' and 'Security' possess reliability of 59.5% and 66.9% respectively. Having minimum number of advertisements in the site as well as providing virtual demonstration of product features enhances the tangibility of the site. While the items in the ninth factor regarding the safety, security, privacy features of the site are self explanatory. These two factors explain variances of 2.52% and 2.34% respectively.

After the factor analysis resulted in identifying 9 (nine) factors from the 43 e-SQ variables, the next step of this analysis is to calculate the factor scores which will be as used as input for cluster analysis. The use of factor scores has the advantage over the system generated scores as the resultant scores are uncorrelated (DiStefano *et al.* 2). As the use of derived factor scores in place of original item score has already been established in segmentation literature (Blamey and Braithwaite 29-45, Sarma 104-17), the factor score is calculated with the help of the formula given in the next page.

Factor loadings as assigned to the raw variables in the factor analysis process provide the correlation between the original variables and the factors, and the key to understanding the nature of a particular factor. Squared factor loadings indicate what percentage of the variance in a factor is explained by the respective variable. That is, the square of the loading offers an explanation as to what extent the raw variable is related to the principal factor. Hence this has been used as a weight for the variable.

The weighted means of the respondent's scores for each new factor have been calculated using the following formula, adapted from Sarma (104-117).

$$Weighted\ Factor\ Score = \frac{\sum\left(Loading\ V_{ij}\right)^2 \times Score\ V_{ij}}{\sum\left(Loading\ V_{ij}\right)^2}$$

where,

Loading V_{ij} = Loading of the variable i under Factor j

Score V_{ij} = Score of respondent against raw variable i under Factor j

The factor scores of the nine factors for all the respondents have been calculated in a separate Microsoft Excel worksheet by applying the above formula. Further, these scores have been imported into the main data sheet (SPSS for Windows) as nine new variables for using as input while performing cluster analysis. Now each respondent is allotted a set of factor scores which shall be used instead of 43 variables in the following analysis.

4.2 The Clusters of Respondents:

The factor scores obtained for the respondents have been used as variables to be used in cluster analysis. Now, as the objective of clustering is to group similar objects together, some measure is needed to assess how similar or different the objects are. The most common approach is to measure similarity in terms of distance between pairs of objects (Malhotra 641). Objects with smaller distances between them are more similar to each other than those at larger distances. To compute the distance, the Squared Euclidean Distance method has been applied which gives the sum of the squared differences in values of each variable. The next step involves

selecting a clustering procedure. Both the hierarchical and non-hierarchical clustering procedure has been used for deriving the clusters of respondents. An initial clustering solution is obtained using a hierarchical procedure. Among the hierarchical clustering technique, squared Euclidian distance method combined with Ward's method is the most commonly used (Malhotra 644) and has also been used in this study. The agglomeration schedule, generated by SPSS, is partially represented below in the Table 4.3.

Table 4.3: Partial Agglomeration Schedule (From the Bottom)

Stage	Cluster Combined		Coefficients	Difference between Coefficients
	Cluster 1	Cluster 2		
854	1	11	3508.676	115.937
855	3	29	3624.613	142.754
856	3	40	3767.367	152.308
857	2	14	3919.675	162.171
858	4	6	4081.846	176.470
859	23	309	4258.316	**305.592**
860	2	3	4563.908	**424.750**
861	1	4	4988.658	**695.623**
862	2	23	5684.281	**1228.189**
863	1	2	6912.470	

A quick look at the partial agglomeration schedule of hierarchical clustering gives the measures of squared Euclidean distance as the Coefficients. While looking from the bottom, the difference between the coefficients at each stage has been calculated in the last column of the Table 4.3. It is seen here that, the last large difference between the squared Euclidean distance occurs at Stage 859 or the fifth row from the bottom. Hence, five clusters are deemed suitable for clubbing the respondents (Gittleman and Howell 424; Dey 166-67).

Thereafter, non-hierarchical k-means cluster analysis is run. The number of clusters suggested by hierarchical clustering is being pre-specified in k-means cluster. This resulted in respondents being clubbed in five clusters with varied importance

assigned to all the nine factors of e-Service Quality. The k-means clustering results are shown in the Table 4.4.

Table 4.4: Final Clusters

	A	B	C	D	E
Clusters / Factors	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)
Functionality	4.46	3.66	4.23	2.30	2.18
Responsiveness	4.40	3.61	4.03	3.03	1.65
Usability	3.81	3.48	2.96	2.74	1.52
Reliability	4.05	3.56	3.43	2.98	1.88
Personalization	3.58	3.05	3.14	2.54	2.04
Empathy	4.41	3.44	4.00	2.74	1.86
Aesthetics	3.43	2.85	3.36	2.61	1.65
Tangibles	3.83	3.13	3.71	2.46	2.17
Security	4.56	3.96	2.14	2.52	1.73
Average Mean	*4.06*	*3.41*	*3.44*	*2.66*	*1.85*

After the application of both the hierarchical and non-hierarchical clustering procedures that resulted in five clusters, names are assigned tentatively based on their scores (as in Table 4.4) for each of the nine factors. The cluster scores are nothing but the relative importance attached by the clusters of respondents to different e-SQ variables forming the nine factors. Each of the five clusters is being discussed individually in the following portions.

4.2.1 Cluster 1: Apprehensive e-Shoppers

The first cluster with 306 respondents (nearly 36% of the total) is the largest of the five clusters. This cluster represents the highest average prominence to the e-SQ factors than the other clusters do. It is named Apprehensive e-Shoppers because of its high reliance on security concerns of the shopping site. Concerns are also expressed regarding the empathetic behavior displayed by the customer contact

persons. This concern scores more than that of the responsiveness of the online marketer. It is in sharp contrast to what the e-Shopping Enthusiasts (Cluster 2) do. The respondents of this cluster assign least importance to aesthetics of the site than they do to other e-SQ factors. The apprehensive nature of this cluster can also be gauged by its excessive prominence attached to ease of cancellation of orders, presence of security symbols and messages in the site coupled with privacy of the respondent's information with the site.

4.2.2 Cluster 2: e-Shopping Enthusiasts

The second largest cluster of the respondents with 292 online shoppers (33.8% of the total respondents) seeks responsiveness from the online marketer along with security and good functionality of the shopping site. This cluster attributes lower prominence to all the 9 factors of e-SQ than the previous cluster does. The respondents belonging to this cluster show concerns for security and privacy but at the same time express enthusiasm in tracking the shipment of products. That is the prime reason for them being labeled as e-Shopping Enthusiasts. This cluster of respondents think that dealing with products of reputed brands and its availability in the inventory is an important e-SQ dimension than the ease of navigation in the site and the clarity of instructions in the shopping site. They express higher enthusiasm in online shopping while expressing lesser concern about the delivery of the product and the warranty it carries. They also express least concern about the aesthetics of the shopping site as well as maintaining a free homepage or a product wishlist.

4.2.3 Cluster 3: Reluctant e-Shoppers

The next cluster (n=140) represents 16.2% of the total population of the respondents. It credits more prominence to the e-SQ dimensions than the e-Shopping Pioneers and the e-Shopping Enthusiasts do. This cluster attaches importance to the functionality and the responsiveness of the online marketer in the same vein as the e-Shopping Enthusiasts do but at the same time expresses more concern about the ease

of communication with the customer contact persons and their ability to solve problems. Therefore, some amount of reluctance can be suspected with respect to their attitude towards shopping online. Hence, they are being labeled as the Reluctant e-Shoppers. A noteworthy feature of this cluster is the very low prominence attached to security aspects of the shopping site than the other factors of e-Service Quality.

4.2.4 Cluster 4: Online Value Seekers

The fourth cluster comprising of 109 respondents express more or less equal importance to all the e-SQ factors. The range of the scores (i.e. the prominence attached to the factors, Table 4.4) across the factors is very low in case of this cluster. However, the respondents belonging to this cluster can be said to assign greater importance to responsiveness and reliability of the online marketer than they do to others. The prominence credited to all the e-SQ factors more or less in a similar way suggests that the respondents perceive quality in online shopping in a balanced manner. They seem to advocate online shopping as something giving them value for their time, effort and convenience. Hence, this cluster is named Online Value Seekers.

4.2.5 Cluster 5: e-Shopping Pioneers

Representing a miniscule of the respondents (hardly 2%), the e-Shopping Pioneers attach greater prominence to tangibility and personalization features in a shopping site than to other factors. This cluster, however, assigns the least prominence to all the dimensions of e-SQ in comparison to that of other clusters. This group of respondents attaches more importance in having virtual demonstration of products and personal homepage, wishlist *etc*. than for reliable and empathetic nature of the shopping site. They are also indifferent in their attitude towards any possible mistake that may have taken place in the shopping process as well as the ramifications of it. They are probably the frontrunners in shopping online as they are comparatively less bothered about either the delivery of the product or the warranty it

carries. Given their low apprehension and concern in shopping online, they have been labeled e-Shopping Pioneers.

4.3 The Inter Cluster Dissimilarity in Prominence Attached to the e-SQ Factors:

It is already seen in Table 4.4 that the importance attached to the nine e-SQ factors varies in case of the five clusters of respondents. However, a statistical test like ANOVA is being felt necessary to establish if the mean of the importance attached actually vary across the five clusters of respondents. Further, post-hoc multiple comparison analysis tests like Bonferroni (where equal variance in the data can be assumed) and Games-Howell (where equal variance in the data cannot be assumed) are performed to ascertain if there exist any pair wise differences among the clusters of respondents. Levene's test of homogeneity of variance is conducted to arrive at the decision of performing either of the two post-hoc tests. Levene's test is the usual *F*-test for equality of means (Carroll and Schneider 191). However, Levene's test for equality of variances is found to be robust under non-normality (Brown and Forsythe 364, Glass 188, Lim and Loh 287). On the other hand, *F*-tests are quite sensitive to departures from normality (Levene 278). Since, the data set used in this study is not found to be normally distributed (refer p. 76), Levene's test, is preferred to *F*-test while proceeding for post-hoc multiple comparison analysis. The ANOVA result is being produced in Table 4.5.

Table 4.5: ANOVA across the e-SQ Factors

Sl. No	Clusters / Factors	Apprehensive e-Shoppers	e-Shopping Enthusiasts	Reluctant e-Shoppers	Online Value Seekers	e-Shopping Pioneers	**ANOVA P-value**
1	Functionality	4.46	3.66	4.23	2.30	2.18	**0.000**
2	Responsiveness	4.40	3.61	4.03	3.03	1.65	**0.000**
3	Usability	3.81	3.48	2.96	2.74	1.52	**0.000**
4	Reliability	4.05	3.56	3.43	2.98	1.88	**0.000**
5	Personalization	3.58	3.05	3.14	2.54	2.04	**0.000**
6	Empathy	4.41	3.44	4.00	2.74	1.86	**0.000**
7	Aesthetics	3.43	2.85	3.36	2.61	1.65	**0.000**
8	Tangibles	3.83	3.13	3.71	2.46	2.17	**0.000**
9	Security	4.56	3.96	2.14	2.52	1.73	**0.000**

The result of the ANOVA, as shown in the Table above, establishes beyond doubt the dissimilarity in the mean of importance attached to each of the nine factors by the five clusters of respondents. Also, the Levene's test of homogeneity of variance (at 0.05 level of significance) results show that the data set has equal variance in case of only two factors. They are *aesthetics* (factor 7) and *tangibles* (factor 8). Therefore, Bonferroni post-hoc test is performed for these two factors. On the other hand, equal variance cannot be assumed in case of the rest seven factors and hence, Games-Howell post-hoc test is conducted.

The results are represented in the Table 4.6. For each of the factors, the segments have been arranged according to the increasing mean score. Segments showing similarity have been merged together, while the others without any similarity in mean scores have been put separately.

Table 4.6: ANOVA Post-hoc Multiple Comparison of the Segments

Sl. No.	Name of the Factor	Segments (Mean scores ranging from *Low* to *High*)				
1	Functionality	e-Shopping Pioneers & Online Value Seekers		e-Shopping Enthusiasts	Reluctant e-Shoppers	Apprehensive e-Shoppers
2	Responsiveness	e-Shopping Pioneers	Online Value Seekers	e-Shopping Enthusiasts	Reluctant e-Shoppers	Apprehensive e-Shoppers
3	Usability	e-Shopping Pioneers	Online Value Seekers & Reluctant e-Shoppers		e-Shopping Enthusiasts	Apprehensive e-Shoppers
4	Reliability	e-Shopping Pioneers	Online Value Seekers	Reluctant e-Shoppers & e-Shopping Enthusiasts		Apprehensive e-Shoppers
5	Personalization	e-Shopping Pioneers & Online Value Seekers		e-Shopping Enthusiasts & Reluctant e-Shoppers		Apprehensive e-Shoppers
6	Empathy	e-Shopping Pioneers	Online Value Seekers	e-Shopping Enthusiasts	Reluctant e-Shoppers	Apprehensive e-Shoppers
7	Aesthetics	e-Shopping Pioneers	Online Value Seekers & e-Shopping Enthusiasts		Reluctant e-Shoppers & Apprehensive e-Shoppers	
8	Tangibles	e-Shopping Pioneers & Online Value Seekers		e-Shopping Enthusiasts	Reluctant e-Shoppers & Apprehensive e-Shoppers	
9	Security	e-Shopping Pioneers, Reluctant e-Shoppers & Online Value Seekers			e-Shopping Enthusiasts	Apprehensive e-Shoppers

Post-hoc multiple comparison analyses throw up further interesting findings. The Apprehensive e-Shoppers, e-Shopping Enthusiasts and the Reluctant e-Shoppers express prominence of varying degree so far as *functionality* dimensions are concerned. This means that the respondents belonging to these three clusters differ from the other cluster in their prominence attached to the *functionality* dimensions. However, the Online Value Seekers and the e-Shopping Pioneers can be treated as having expressed similar prominence for *functionality* dimensions as per the results of Games-Howell test. When the multiple comparisons are done for the second factor *Responsiveness*, the mean of the importance assigned by all the five clusters differ from each other. In other words, the preferences for such dimensions are different in case of all the five clusters of respondents. A similar trend is also seen in case of the sixth factor i.e. *empathy* where all the clusters manifest differences with each other in regards to the prominence attached to such dimensions.

Reluctant e-Shoppers and the Online Value Seekers behave in similar way while assigning importance to the *usability* dimensions. Rest three clusters express differences with each other while doing the same. Likewise, the *reliability* dimensions are sought in a similar manner by the clusters named e-Shopping Enthusiasts and Reluctant e-Shoppers while differences are seen in case of the other three.

Similarity is seen in two pairs of clusters so far as prominence attached to *personalization* dimensions are concerned. The Online Value Seekers and the e-Shopping Pioneers attach importance in the same way as the e-Shopping Enthusiasts and the Reluctant e-Shoppers do. But the Apprehensive e-Shoppers manifest significant differences with each of the other four clusters. The *security* dimensions are preferred in a similar way by three clusters namely, Reluctant e-Shoppers, Online Value Seekers and the e-Shopping Pioneers. On the other hand, rest two clusters express dissimilarity with all the other clusters in prominence attached to the *security* dimensions.

As the data set has equal variance in case of two factors – *aesthetics* and *tangibles*, Bonferroni tests is conducted for post-hoc multiple comparisons. Here also, two pairs of clusters are seen to have expressed similar prominence for the *aesthetic* dimensions. They are e-Shopping Enthusiasts and Online Value Seekers and the second pair is that of Apprehensive e-Shoppers and Reluctant e-Shoppers. On the contrary, e-Shopping Pioneers show dissimilarity with all other clusters while attaching prominence to the *aesthetic* dimensions. *Tangibility* is sought in a similar manner by again two pairs of clusters – 'Apprehensive e-Shoppers and Reluctant e-Shoppers' and 'e-Shopping Pioneers and Online Value Seekers'. The prominence for *tangible* dimensions attached by the e-Shopping Enthusiasts show difference with each other cluster of respondents.

The post-hoc multiple comparison analysis enables to arrive at the decision whether the segments of respondents can be treated as similar or different based upon the pair-wise results. The above section shows exactly the same regarding such similarity / dissimilarity in pair wise comparisons. Thus, one can find out the segments which can be treated similarly with respect to a particular e-SQ factor whereas certain segments may be treated differently. There also exist segments of shoppers which need to be treated exclusively.

The result of the cluster analysis has thrown up light on segments of online shoppers based on the prominence attached to different e-service quality dimensions. The five clusters delineated in Section 4.2 above are the distinct segments of respondents on the basis of e-service quality factors.

4.4 The Cluster Profiles:

The segments of the respondents (i.e. the five clusters) are further introspected upon in order to have a detailed description of them. The segments are profiled in the lines of some other variables which are related to the demographic and psychographic characteristics. The interpretation of the segments is done with the help of cross-tabulation and other statistical tests like Pearson's chi-square (in case of variables measured in nominal and ordinal scale) and T-test and ANOVA (for variables measured in interval scale). The following section presents the profile of the respondents.

4.4.1 Profiling on Demographic Lines:

The demographic variables used in this study are measured in categorical scales and hence chi-square test is conducted to check if there are any statistical differences amongst the five segments of online shoppers. The result of this test, as noted in Table 4.7, shows that significant differences exist between the segments (at 0.05 significance level) in case of six variables. These are place of residence, age, education, occupation, monthly family income and family life cycle stage. The gender of the respondent, however, fails to show any such differences. The presence of statistical differences between the segments of the respondents on the six above mentioned variables implies that the result can be applied to the population as a whole.

Table 4.7: Pearson's Chi-square for Demographic Variables

Demographic Variables	Pearson's Chi Square	Sig.
Place of Residence	78.342	**0.000**
Gender	4.416	0.353
Age	28.356	**0.000**
Education	42.946	**0.000**
Occupation	63.322	**0.000**
Monthly Family Income	29.129	**0.004**
Family Life Cycle Stage	49.850	**0.007**

The following portions of this analysis delve further into the demographic variables and show frequency of occurrence among the segments of the respondents.

4.4.1.1 Place of Residence and Segments:

Table 4.8: Place of Residence and Segments

	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)
Bangalore	**81 (26.5%)**	47 (16.1%)	35 (25%)	16 (14.7%)	2 (11.8%)
Delhi	60 (19.6%)	67 (22.9%)	27 (19.3%)	19 (17.4%)	2 (11.8%)
Guwahati	75 (24.5%)	37 (12.7%)	**50 (37.7%)**	**34 (31.2%)**	3 (17.6%)
Kolkata	44 (14.4%)	**75 (25.7%)**	9 (6.4%)	18 (16.5%)	2 (11.8%)
Mumbai	46 (15%)	66 (22.6%)	19 (13.6%)	22 (20.2%)	**8 (47.1%)**

Note: The figures in parentheses indicate the percentage within the segment.

The respondents of this study are residents of five Indian cities of Bangalore (20.9%), Delhi (20.3%), Guwahati (23%), Kolkata (17.1%) and Mumbai (18.6%). Table 4.8 shows that the Apprehensive e-Shoppers are mostly from Bangalore whereas it is on the lower side in Kolkata and Mumbai. The biggest chunk of e-Shopping Enthusiasts resides in Kolkata while they are rare in Guwahati. On the contrary, Reluctant e-Shoppers exhibit the reverse trend. The Online Value Seekers also reside mostly in Guwahati while Bangalore has the lowest population of them.

Finally the e-Shopping Pioneers come mostly from Mumbai (i.e. nearly half of them).

4.4.1.2 Age of the Respondents and Segments:

As only 1.5% of the total respondents belonged to the age groups of 55 years and above, they are clubbed into the age group 45 to 54 years and renamed as 45 years and older. Moreover, about three-fourth of the respondents are between 18 to 30 years of age.

Table 4.9: Age and Segments

	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)	Total
Between 18-30 years	224 (R= 35.8% & C= 75.4%)	206 (R= 32.9% & C= 72.5%)	112 (R= 17.9% & C= 81.8%)	79 (R= 12.6% & C= 75.2%)	5 (R= 0.8% & C= 55.6%)	626 (74.9%)
Between 31-44 years	72 (R= 43.9% & C= 23.9%)	53 (R= 32.3% & C= 18.7%)	19 (R= 11.6% & C= 13.9%)	16 (R= 9.8% & C= 15.2%)	4 (R= 2.4% & C= **44.4%)**	164 (19.6%)
45 years and older	5 (R= 10.9% & C= 1.7%)	**25** (R= **54.3%** & C= 8.8%)	6 (R= 13% & C= 4.4%)	10 (R= 21.7% & C= 9.5%)	0	46 (5.5%)

Note: The figures in parentheses indicate the percentage within the age group (R) and the segment (C) respectively. (*Excludes missing values*)

Of the respondents who are 45 years and older in age, more than half of them forms the segment called e-Shopping Enthusiasts. In rest of the segments, the frequency pattern does not show any remarkable deviation except in case of the e-Shopping Pioneers where about half of them are 31 years and above in age.

4.4.1.3 Education of the Respondents and Segments:

As the respondents are classified into four groups as per the level of education they have, it is evident from Table 4.10 that the respondents who have read upto Class XII form bulk of the segments of e-Shopping Enthusiasts and Online Value

Seekers. But, within the largest segment of Apprehensive e-Shoppers, the number of persons who have read up to Class XII are proportionately lower.

Table 4.10: Education and Segments

	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)	Total
Upto Class XII	**5** (R= 10.2% & C= 1.7%)	**20** (R= **40.8%** & C= 7.1%)	6 (R= 12.2% & C= 4.4%)	**18** (R= **36.7%** & C= 17.5%)	0	49 (5.9%)
Graduate	118 (R= 36.4% & C= 39.5%)	114 (R= 35.2% & C= 40.3%)	51 (R= 15.7% & C= 37.5%)	38 (R= 11.7% & C= 36.9%)	3 (R= 0.9% & C= 33.3**%)**	324 (39%)
Post-Graduate	160 (R= 39.6% & C= 53.5%)	131 (R= 32.4**%** & C= 46.3%)	65 (R= 16.1% & C= 47.8%)	42 (R= 10.4% & C= 40.8%)	**6** (R= 1.5% & C= **66.7**%)	404 (48.7%)
Others	16 (R= 30.2% & C= 5.4%)	18 (R= 34% & C= 6.4%)	14 (R= 26.4% & C= 10.3%)	5 (R= 9.4% & C= 4.9%)	0	53 (6.4%)

Note: The figures in parentheses indicate the percentage within the education type (R) and the segment (C) respectively. (*Excludes missing values*)

4.4.1.4 Occupation of the Respondents and Segments:

Table 4.11: Occupation and Segments

	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)	Total
Student	**55** (R= **22.6%** & C= 18.4%)	**107** (R= **44%** & C= 37.7%)	35 (R= 14.4% & C= 26.1%)	45 (R= 18.5**%** & C= 41.7%)	1 (R= 0.4% & C= 9.1%)	243 (29.1%)
Service	**221** (R= **41.5%** & C= 73.9%)	163 (R= 30.6% & C= 57.4%)	86 (R= 16.2% & C= 64.2%)	54 (R= 10.2% & C= 50%)	8 (R= 1.5% & C= 72.7**%)**	532 (63.6%)
Self-employed	4 (R= 21.1% & C= 1.3%)	5 (R= 26.3**%** & C= 1.8%)	2 (R= 10.5% & C= 1.5%)	**6** (R= **31.6%** & C= 5.6%)	**2** (R= 10.5% & C= **18.2%)**	19 (2.3%)
Others	19 (R= 45.2% & C= 6.4%)	9 (R= 21.4% & C= 3.2%)	11 (R= 26.2% & C= 8.2%)	3 (R= 7.1% & C= 2.8%)	0	42 (5%)

Note: The figures in parentheses indicate the percentage within the occupation level (R) and the segment (C) respectively. (*Excludes missing values*)

Here also, the respondents with occupation as housewives and retired are clubbed with others as they formed less than 1% of the total respondents. Almost two third of the respondents are service holders followed by the students with 29.1% of all. The students are mostly the e-Shopping Enthusiasts while service holders are mostly Apprehensive e-Shoppers. Similarly, self-employed people form bulk of the Online Value Seekers. The e-Shopping Pioneers are more in self-employed than students even though the overall number of student respondents is much higher.

4.4.1.5 Family Income of the Respondents and Segments:

Table 4.12: Family Income and Segments

	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)	Total
Below Rs. 20,000	**24 (**R= **31.2%** & C= 8.1%)	**29 (**R= **37.7%** & C= 10.4%)	7 (R= 9.1% & C= 5.3%)	17 (R= 22.1**%** & C= 16.8%)	0	77 (9.4%)
Rs. 20,001 to Rs. 50,000	137 (R= 36.2% & C= 46.1%)	131 (R= 34.7% & C= 46.8%)	65 (R= 17.2% & C= 48.9%)	44 (R= 11.6% & C= 43.6%)	1 (R= 0.3% & C= 9.1**%**)	378 (46%)
Rs. 50,001 to Rs. 99,999	**76 (**R= **33.2%** & C= 25.6%)	**87 (**R=**38%** & C= 31.1%)	37 (R= 16.2% & C= 27.8%)	24 (R= 10.5% & C= 23.8%)	**5** (R= 2.2% & C= **45.5%)**	229 (27.9%)
More than Rs. 1 lakh	**60 (**R= **43.5**% & C= 20.2%)	**33 (**R= **23.9**% & C= 11.8%)	24 (R= 17.4% & C= 18%)	16 (R= 11.6% & C= 15.8%)	**5** (R= 3.6% & C= **45.5**%)	138 (16.8%)

Note: The figures in parentheses indicate the percentage within the income level (R) and the segment (C) respectively. (*Excludes missing values*)

Respondents with low monthly family income (below Rs. 20,000) come from the segment e-Shopping Enthusiasts and Online Value Seekers proportionately more than the segments of Apprehensive e-Shoppers and Reluctant e-Shoppers respectively (Table 4.12). Also the proportion of e-Shopping Enthusiasts in higher middle income level (i.e. Rs. 50,001 to Rs. 99,999) is higher than that of corresponding proportion of Apprehensive e-Shoppers. On the contrary, when it comes to income level of more than 1 lakh, Apprehensive e-Shoppers are much larger in number than other segments

at the same income level. Also the e-Shopping Pioneers come mostly from the higher income groups.

4.4.1.6 Family Life Cycle Stage of the Respondents and Segments:

Table 4.13: Family Life Cycle Stage and Segments

	Apprehensive e-Shoppers (n=306)	e-Shopping Enthusiasts (n=292)	Reluctant e-Shoppers (n=140)	Online Value Seekers (n=109)	e-Shopping Pioneers (n=17)	Total
Single living with family	103 (R= 34.4% & C= 34.8%)	86 (R= 28.8**%** & C= 30.3%)	59 (R= 19.7% & C= 44.7%)	47 (R= 15.7**%** & C= 43.9%)	**4** (R= 1.3% & C= 36**.4%)**	299 (36%)
Married without child in joint family	15 (R= 34.9% & C= 5.1%)	14 (R= 32.6% & C= 4.9%)	**4** (R= **9.3%** & C= 3%)	**8** (R= **18.6%** & C= 7.5%)	2 (R= 4.7% & C= 18.2**%**)	43 (5.2%)
Single alone	106 (R= 36.9% & C= 35.8%)	104 (R= 36.2% & C= 36.6%)	42 (R= 14.6% & C= 31.8%)	33 (R= 11.5% & C= 30.8%)	2 (R= 0.7% & C= 18.2%)	287 (34.6%)
Married without child in nuclear family	**19 (**R= **26.4%** & C= 6.4%)	**32 (**R= **44.4%** & C= 11.3%)	14 (R= 19.4% & C= 10.6%)	6 (R= 8.3% & C= 5.6%)	1 (R= 1.4% & C= 9.1%)	72 (8.7%)
Married with young child in joint family	**23 (**R= **54.8%** & C= 7.8%)	11 (R= 26.2% & C= 3.9%)	4 (R= 9.5% & C= 3%)	2 (R= 4.8% & C= 1.9%)	2 (R= 4.8% & C= 18.2%)	42 (5.1%)
Married with young child in nuclear family	24 (R= 38.7% & C= 8.1%)	27 (R= 43.5% & C= 9.5%)	7 (R= 11.3% & C= 5.3%)	4 (R= 6.5% & C= 3.5%)	0	62 (7.5%)
Married with grown up child	5 (R= 29.4% & C= 1.7%)	5 (R= 29.4% & C= 1.8%)	1 (R= 12.5% & C= 0.8%)	6 (R= 35.3% & C= 5.6%)	0	17 (2%)
Married with married child	1 (R= 12.5% & C= 0.3%)	**5 (**R= **62.5%** & C= 1.8%)	1 (R= 12.5% & C= 0.8%)	1 (R= 12.5% & C= 0.9%)	0	8 (1%)

Note: The figures in parentheses indicate the percentage within the family life cycle stage (R) and the segment (C) respectively. (*Excludes missing values*)

The two family life cycle stages of 'retired people living with children and living alone' has only three respondents and therefore are discarded for this analysis. Of the respondents who are 'married without child in joint family', Online Value Seekers are proportionately higher than the Reluctant e-Shoppers (Table 4.13). Similarly those who are 'married without child in nuclear family', the proportion is higher in the segment of e-Shopping Enthusiasts than that of Apprehensive e-Shoppers. More than half of the respondents who are 'married with young child in

joint family' are found in the segment of Apprehensive e-Shoppers. The e-Shopping Pioneers are mostly 'single living with their family' and 'single alone'.

4.4.2 Profiling on Psychographic Lines:

Similarly, the study has seven psychographic variables which are measured in interval scale. Therefore, ANOVA is performed to check the presence of any statistical difference among the five segments of online shoppers with respect to their responses for such variables. The respondents were asked to give their responses for various psychographic dimensions of shopping online in a *Likert* type five point scale ranging from *Strongly agree* to *Strongly disagree* with assigned values between +2 and -2. Table 4.14 below notes the result of the test. It is seen that different segments of shoppers respond differently for almost all such variables except one (this is evident from the ANOVA significance value of less than 0.05).

Table 4.14: ANOVA for Psychographic Variables

Psychographic Variables	Sig.
Shop without spending much time	**0.001**
Confident in making online purchase	**0.087**
Try out new things/products	**0.019**
Technology savvy	**0.005**
Comfort in shopping	**0.003**
Sense of accomplishment	**0.005**
Excitement in online shopping	**0.001**

Thus, test results throw up six psychographic variables, response for which differs across the segments of online shoppers. They are – *shop without spending much time, try out new things/products, technology savvy, comfort in shopping, sense of accomplishment* and *excitement in online shopping.* On the contrary, shopper segments do not differ significantly (at α= 0.05) in expressing *confidence in making online purchase*. The presence of statistical differences between the segments of the

respondents in case of the six psychographic variables imply that the result can be applied to the population as a whole.

The following is an attempt to look further into these dimensions and note how different segments of shoppers responded differently to them. The statistical tests used are primarily ANOVA and T-test. Further, post-hoc multiple comparison tests like Bonferroni and Games-Howell are also conducted.

4.4.2.1 Shopping Without Spending Time and Segments:

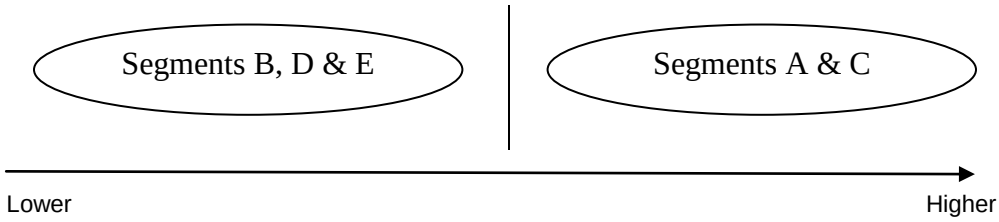
The urge to shop online primarily to save time is lowest in the segment e-Shopping Enthusiasts (Segment B) while the same is highest among Apprehensive e-Shoppers (Segment E).

Table 4.15: Shopping Time & Segments' Mean

	Shopper Segments	Mean (*Responses within +2 & -2*)
A	Apprehensive e-Shoppers	1.05
B	e-Shopping Enthusiasts	0.72
C	Reluctant e-Shoppers	1.02
D	Online Value Seekers	0.83
E	e-Shopping Pioneers	0.80

When the segments are compared with each other with the help of Games-Howell test for multiple comparison, it is seen that the mean of the response for Segment A differs from that of Segment B as well as Segment C. Hence, it can be said that Segment A behaves differently from that of Segment B & C. Also, upon doing Independent sample T-test, the means of Segment D & E do not show any variance with that of Segment B. So, it can also be inferred that these three segments behave similarly as far as this particular variable is concerned.

Fig 4.1: Distinct Groups of Time Spending Behavior



It is seen that two distinct groups emerge within the five segments as a result of this analysis so far as the segments' urge to save time through online shopping is concerned. Hence, it is observed that the e-Shopping Enthusiasts (B), Online Value Seekers (D) and e-Shopping Pioneers (E) desire to shop online in order to save time in shopping is lower than that of Apprehensive e-Shoppers (A) and Reluctant e-Shoppers (C).

4.4.2.2 Trying New Things / Products Online and Segments:

The e-Shopping Pioneers' (E) indulgence in online shopping to try out new things and products is highest among other segments while the same is lowest in case of the Apprehensive e-Shoppers (A).

Table 4.16: Trying New Things & Segments' Mean

	Shopper Segments	Mean (*Responses within +2 & -2*)
A	Apprehensive e-Shoppers	0.21
B	e-Shopping Enthusiasts	0.33
C	Reluctant e-Shoppers	0.49
D	Online Value Seekers	0.50
E	e-Shopping Pioneers	0.76

However, the shopper segments fail to show any significant difference upon doing post-hoc multiple comparison analysis. Hence, it is not possible to pinpoint particular segments regarding their preference towards this variable.

4.4.2.3 Technology Savvy-ness and Segments:

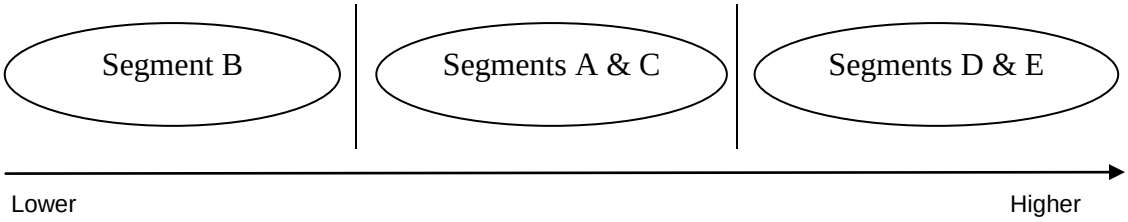
The e-Shopping Pioneers (E) consider themselves to be tech savvy the most. On the other hand, the e-Shopping Enthusiasts (B) are the least tech savvy if their opinion is to be considered.

Table 4.17: Technology Savvy-ness & Segments' Mean

	Shopper Segments	Mean (*Responses within +2 & -2*)
A	Apprehensive e-Shoppers	0.44
B	e-Shopping Enthusiasts	0.24
C	Reluctant e-Shoppers	0.49
D	Online Value Seekers	0.58
E	e-Shopping Pioneers	0.94

When post-hoc multiple comparison analysis (Games-Howell, in this case) is done, it is seen that the mean of Segment B significantly differs from that of Segment D. Hence, these two segments can be said to behave differently. Further, when Independent sample T-test is done among the segments, three distinct groups emerge as shown in the following figure.

Fig 4.2: Distinct Groups of Technology Savvy-ness



Therefore, three groups can be seen so far as their technology savvy-ness is concerned. They exhibit tech savvy-ness which is in three categories: low (e-Shopping Enthusiasts (B)), middle (Apprehensive e-Shoppers (A) & Reluctant e-Shoppers (C)) and high (Online Value Seekers (D) & e-Shopping Pioneers (E)).

4.4.2.4 Comfort Seeking Behavior and Segments:

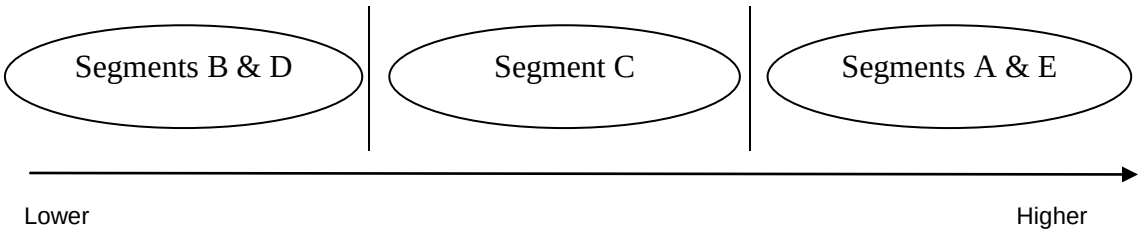
The e-Shopping Pioneers (E) like in the previous cases, shop online since they want comfort in shopping more than the other segments.

Table 4.18: Comfort & Segments' Mean

	Shopper Segments	Mean (*Responses within +2 & -2*)
A	Apprehensive e-Shoppers	0.96
B	e-Shopping Enthusiasts	0.71
C	Reluctant e-Shoppers	0.86
D	Online Value Seekers	0.65
E	e-Shopping Pioneers	1.19

Post-hoc multiple comparison analysis (Games-Howell), suggests that there exists significant difference in the mean of responses of Segment A and Segment B. Hence they can be said to behave differently while seeking comfort in shopping. Again, when Independent sample T-test is conducted, three groups emerge.

Fig 4.3: Distinct Groups of Comfort Seeking Behavior



Segment C (Reluctant e-Shoppers) tends to show similarity towards both the other groups but it is decided to put it as a distinct group since it exhibits a mean score which is in between the other two groups. Therefore, Apprehensive e-Shoppers (A) and e-Shopping Pioneers (E) seek greater comfort in shopping via online mode than the e-Shopping Enthusiasts (B) and Online Value Seekers (D).

4.4.2.5 Sense of Accomplishment and Segments:

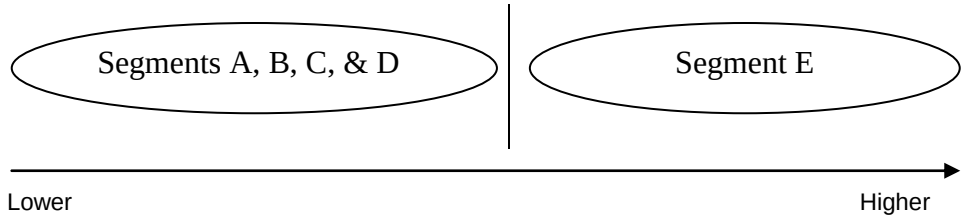
A higher mean score is seen here also in case of the e-Shopping Pioneers (E). Games-Howell test suggests that the Segment E differs from all other segments in experiencing a sense of accomplishment while shopping online.

Table 4.19: Sense of Accomplishment & Segments' Mean

	Shopper Segments	Mean (*Responses within +2 & -2*)
A	Apprehensive e-Shoppers	0.14
B	e-Shopping Enthusiasts	0.17
C	Reluctant e-Shoppers	0.28
D	Online Value Seekers	0.06
E	e-Shopping Pioneers	1.06

Hence, the segments can be put into two distinct groups based on the post-hoc multiple comparison analysis. Independent sample T-test also confirms that the Segments A, B, C & D behave similarly so far as this variable is concerned.

Fig 4.4: Distinct Groups of Sense of Accomplishment



Therefore, all the four segments of online shoppers except the e-Shopping Pioneers (E) exhibit a very low sense of accomplishment after shopping online. But then, it is also to be kept in mind that the number of respondents belonging to the Segment E is very low (n=17).

4.4.2.6 Excitement and Segments:

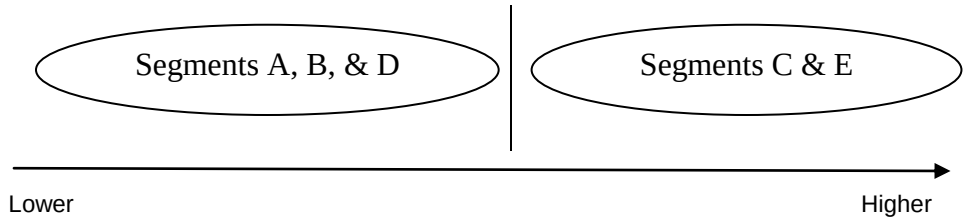
The Online Value Seekers (D) are definitely not the ones who sense a great deal of excitement while shopping online. The e-Shopping Pioneers (E) behave the opposite though.

Table 4.20: Excitement & Segments' Mean

	Shopper Segments	Mean (*Responses within +2 & -2*)
A	Apprehensive e-Shoppers	0.12
B	e-Shopping Enthusiasts	0.18
C	Reluctant e-Shoppers	0.51
D	Online Value Seekers	0.06
E	e-Shopping Pioneers	0.88

The post-hoc multiple comparison test (Bonferroni, in this case) suggests that Segment C behaves differently from Segment A, B & D in experiencing a bit of excitement in online shopping. Further, after conducting Independent sample T-test among the segments, two distinct groups can be figured out (as depicted below).

Fig 4.5: Distinct Groups of Excitement



Therefore, it is seen that the Apprehensive e-Shoppers, e-Shopping Enthusiasts and Online Value Seekers exhibit a lower sense of excitement in online shopping while the Reluctant e-Shoppers and the e-Shopping Pioneers display a higher sense of excitement in shopping online.

Hence, it is observed that the segments of shoppers have expressed their preferences for various psychographic variables in varying degrees as has been the case with the demographic variables. The psychographic behavior of certain segments

is similar to a few others while at the same time, few of them behave differently from each other. Thus, the shopper segments may be treated similarly or differently in formulating marketing decisions based upon the psychographic characteristics.

4.5 A Summary of the Segment Profiles:

The previous sections deliberated upon how the five segments of online shoppers express distinctive behavior so far as the demographic and psychographic variables are concerned. Now, a summary of the five online shopper segments are being presented in the following sections.

4.5.1 Apprehensive e-Shoppers – Profile:

The first segment of the online shoppers is found to exhibit the following features.

i. They form the largest segment of shoppers with 35.4% of the total respondents.
ii. Apprehensive e-Shoppers have mostly come from Bangalore while those from Kolkata and Mumbai are on the lower side.
iii. The number of Apprehensive e-Shoppers is proportionately higher in the age group of 31 to 44 years than that of all shoppers taken together.
iv. More than 98% of the Apprehensive e-Shoppers are either graduate or post graduate.
v. The proportion of the Apprehensive e-Shoppers who are students is lower than the corresponding figure for all shoppers whereas the same for service holders is slightly higher.
vi. The Apprehensive e-Shoppers whose monthly family income is more than Rs. 1 Lakh are larger in proportion whereas the same for lowest income shopper (i.e. below Rs. 20,000) is slightly lesser.

vii. The Apprehensive e-Shoppers who are married without child in nuclear family are lesser in proportion. On the other hand, those who are married with young child in joint family are proportionately higher.

viii. The Apprehensive e-Shoppers' urge to shop online to save time is found to be highest amongst all other segments.

ix. On the contrary, their willingness to try out new things / products online is found to be the lowest.

x. Here, the shoppers' technology savvy-ness is neither high nor low.

xi. The Apprehensive e-Shoppers' comfort seeking behavior is on the higher side.

xii. On the contrary, the Apprehensive e-Shoppers' sense of accomplishment and excitement in shopping online is on the lower side.

xiii. This segment's shopping basket is bigger for tickets / reservations.

xiv. About two-third of the Apprehensive e-Shoppers have shopped within the last month while the overall value for the last six months is above 80%.

xv. Even though the monetary value of a single purchase is up to Rs. 2,500 for about two-third of the Apprehensive e-Shoppers, it is seen that they have purchased for a higher value only sometimes, whereas, mostly they have shopped for lower values.

4.5.2 e-Shopping Enthusiasts – Profile:

A summary of the profile of the e-Shopping Enthusiasts is enumerated in the following portion.

i. It is the second largest segment of online shoppers representing around 33.79% of the total respondents.

ii. Kolkata has the highest number of e-Shopping Enthusiasts (25.7%) while Guwahati the lowest (12.7%).

iii. The age profile of the e-Shopping Enthusiasts exhibits similar trend as seen in case of the total respondents with about three-fourth of them below the age of 30 years.

iv. Like in the case of age profile, the various levels of education of the e-Shopping Enthusiasts fail to show any significant difference as seen in the case of overall shoppers' levels of education. Nevertheless, about 87% of the e-Shopping Enthusiasts have graduation or higher educational qualification.

v. 37.7% of the e-Shopping Enthusiasts are students (as against the overall students among the shoppers being 29.1%).

vi. The e-Shopping Enthusiasts consists of 33.8% of the total shoppers, but for those having monthly family income of more than a lakh rupees, e-Shopping Enthusiasts are only around 23.9%.

vii. e-Shopping Enthusiasts who are married and living in nuclear families outnumbers the corresponding figure for all the shoppers taken as a whole.

viii. The urge to shop online primarily to save time is lowest in case of the e-Shopping Enthusiasts.

ix. Also the propensity of the e-Shopping Enthusiasts to try out new things / products online is on the lower side.

x. e-Shopping Enthusiasts perceives that their technology savvy-ness is the lowest.

xi. Further, this segment's comfort seeking behavior, sense of accomplishment in shopping online as well as its excitement in shopping online is on the lower side.

xii. The e-Shopping Enthusiasts shop more for apparels / accessories than the corresponding share of all the shoppers taken as a whole. On the other hand, they shop lesser, on an average, for books, tickets / reservations, electronic equipments *etc*.

xiii. More than half of the shoppers of this segment have shopped online within the last one month.

xiv. The monetary value of a single purchase of e-Shopping Enthusiasts mostly falls in the range of Rs. 500 to Rs. 1,000 but at the same time more than 72% of them have shopped for up to Rs. 2,500. Again at least 43.8% of them have shopped for Rs. 5,000 and above.

4.5.3 Reluctant e-Shoppers – Profile:

A summary profile of the Reluctant e-Shoppers is listed below.

i. It is the third largest segment of online shoppers (16.2%) but with about half the number of shoppers as found in the previous segment.

ii. Reluctant e-Shoppers mostly come from Guwahati (37.7%) whereas they are scarcely found in Kolkata (6.4%).

iii. The number of Reluctant e-Shoppers who are below the age of 30 years are more than the overall percentage in that age bracket while those within 31 to 44 years are less than the corresponding share.

iv. The share of Reluctant e-Shoppers who have educational qualifications like professional degrees, PhD *etc*., is proportionately higher than that of other segments.

v. Similarly, the proportion of Reluctant e-Shoppers who are retired, homemakers *etc*., is higher than the corresponding share.

vi. The percentage of Reluctant e-Shoppers who have monthly family income of less than Rs. 20,000 is low.

vii. Reluctant e-Shoppers who are married and living in joint families are lesser in number than the corresponding figure for this segment.

viii. The Reluctant e-Shoppers urge to shop online to save time is on the higher side.

ix. Here, the shoppers' indulgence in trying out new things / products is neither high nor low.

x. The technology savvy-ness of the Reluctant e-Shoppers as well as their comfort seeking behavior shows a value in the middle range.

xi. The Reluctant e-Shoppers have a lower sense of accomplishment whereas their excitement in shopping online is on the higher side.

xii. In contrast to the previous segment, the Reluctant e-Shoppers shop less for apparels / accessories but more for tickets / reservations *etc*.

xiii. About 80% of the shoppers have purchased something in the last six months.

xiv. About two-third of them have purchased within Rs. 1,000 but those having bought for more than Rs. 5,000 is less than one-third.

4.5.4 Online Value Seekers – Profile:

The Online Value Seekers are found to exhibit the following features:

i. This is the second smallest segment with 109 respondents (12.6%) but its size is considerably larger than the smallest segment i.e. the e-Shopping Pioneers.

ii. The largest chunk of Online Value Seekers comes from Guwahati and the lowest from Bangalore.

iii. The proportion of Online Value Seekers who are at least 45 years of age or older are more than the corresponding figure for all shoppers taken together.

iv. The online shoppers who have read up to Class XII are more likely to be Online Value Seekers.

v. Again, the proportion of Online Value Seekers who are either students or self-employed, is higher than the corresponding share.

vi. A higher proportion of these shoppers would also have monthly family income of below Rs. 20,000.

vii. Likewise, the proportion of Online Value Seekers who are either single living with family or married without child in joint family or married with grown up child is on the higher side.

viii. Their urge to shop online to save time is on the lower side.

ix. The Online Value Seekers' indulgence in trying out new things / products is neither significantly high nor low.

x. These shoppers consider their tech savvy-ness on the higher side.

xi. The Online Value Seekers' comfort seeking behavior, sense of accomplishment and the excitement in online shopping is the lowest amongst all other segments.

xii. Online Value Seekers' shopping basket for tickets / reservations is significantly smaller (at 53.2%) than the corresponding figure for all shoppers taken together (which is 72%).

xiii. Only about 30% of the Online Value Seekers have shopped within the last month while the same for last six months just crosses the half-way mark (at 52.29%).

xiv. Just like the previous segment, about two-third of them have purchased within Rs. 1,000 but those having bought for more than Rs. 5,000 is less than one-third.

4.5.5 e-Shopping Pioneers – Profile:

The e-Shopping Pioneers are found to exhibit the following characteristics. However, with only 17 respondents belonging to this segment, there exist reservations as to whether the results can be used to draw a general summary of the segment.

i. It is the smallest segment of shoppers representing only 1.97% of the total respondents.

ii. About 47.1% of the e-Shopping Pioneers reside in Mumbai, while the percentage of shoppers belonging to this segment in the other four cities are found to be more or less equal.

iii. While around three-fourth of the total shoppers fall within the age bracket of 18 to 30 years, the corresponding share in the same bracket is just more than 50% in case of e-Shopping Pioneers.

iv. Two-third of the e-Shopping Pioneers are Post-Graduates while none of them are below the level of graduation.

v. More than 90% of the e-Shopping Pioneers are either engaged in some service or are self-employed.

vi. Similarly, more than 90% of them have a monthly family income which is more than Rs. 50,000.

vii. The share of total online shoppers who are single is slightly more than 70%, but the corresponding share in case of e-Shopping Pioneers is about 54.6%.

viii. The e-Shopping Pioneers' urge to shop online to save time is lower.

ix. The indulgence in trying out new things / products online is highest in case of the e-Shopping Pioneers amongst the five segments of shoppers.

x. The e-Shopping Pioneers consider themselves to be the most tech-savvy.

xi. The e-Shopping Pioneers would also show the highest comfort seeking behavior as well as sense of accomplishment in shopping online.

xii. The e-Shopping Pioneers shop online lesser for books and tickets / reservations than the corresponding shopping basket of all shoppers taken as a whole. On the other hand, they shop more for apparels / accessories and electronic equipments / gadgets.

xiii. About half of the e-Shopping Pioneers have shopped online during the last six months whereas the corresponding figure for all shoppers stands at around three-fourth.

xiv. The monetary value of a single purchase of e-Shopping Pioneers mostly falls in the range of Rs. 500 to Rs. 1,000 while they have shopped less for values higher than Rs. 5,000. When the whole lot of shoppers is considered, a similar trend is observed.

References

Blamey, R K and V A Braithwaite. "A Social Values Segmentation of the Potential Ecotourism Market." *Journal of Sustainable Tourism* 5.1 (1997): 29-45. Print.

Brown, Morton B and Alan B Forsythet. "Robust Tests for the Equality of Variances." Journal of the American Statistical Association 69.364 (1974): 364-67. Print.

Carroll, Raymond J and Helmut Schneider. "A Note on Levene's Tests for Equality of Variances." Statistics & Probability Letters 3 (1985): 191-94. Print.

Dey, Banasree. "Segmenting and Profiling the Leisure Travelers: A Study in North-east India." Diss. Tezpur University, 2007. Print.

DiStefano, Christine, Min Zhu and Diana Mîndrilă. "Understanding and Using Factor Scores: Considerations for the Applied Researcher." *Practical Assessment, Research & Evaluation* 14.20 (2009): 1-11. Print.

Gittleman, Maury B and David R Howell. "Changes in the Structure and Quality of Jobs in the United States: Effects by Race and Gender, 1973-1990." *Industrial and Labor Relations Review* 48.3 (1995): 420-40. Print.

Glass, Gene V. "Testing Homogeneity of Variances." American Educational Research Journal 3.3 (1966): 187-90. Print.

Hair, Joseph F, Rolph E Anderson, Ronald L Tatham and William C Black. *Multivariate Data Analysis*, 3rd ed. New York: Macmillan, 1992: Print.

Levene, Howard. "Robust Tests for the Equality of Variances." Contributions to Probability and Statistics. Ed. Ingram Olkin et al. E-book. Retrieved from https://books.google.co.in/books?hl=en&lr=&id=ZUSsAAAAIAAJ&oi=fnd&pg=PA278&dq=f-test+and+levene%27s+test&ots=GchQnyqKYT&sig=GV59a2xCO8BysP33nwu2U4CQSjk#v=onepage&q&f=false on 01.06.2016

Lim, Tjen-Sien and Wei-Yin Loh. "A comparison of tests of equality of variances." Computational Statistics & Data Analysis 22 (1996): 287-301. Print.

Malhotra, Naresh K and Satyabhusan Dash. *Marketing Research An Applied Orientation*. 5th ed. Delhi: Pearson Prentice Hall, 2010. Print.

Norman, Geoff. "Likert scales, levels of measurement and the ''laws'' of statistics." *Adv in Health Sci Edu*, 15 (2010): 625-32. Print.

Sarma, Mrinmoy Kumar, "Towards positioning a tourist destination. A study of North East India." *ASEAN Journal of Hospitality and Tourism* 2.2 (2003): 104-17. Print.