

## A Discriminant Analysis Of High End And Budget Stores In Apparel Retail In India Using Retail Service Quality Scale Model

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**ABSTRACT:** Service Quality is a blend of two words, Service and Quality where we discover accentuation on the accessibility of value services to definitive users. RSQS scale has been used for identifying the discriminant service quality factors differentiating the consumer perception of high end apparel retail stores and budget apparel retail stores. All out 600 surveys were circulated, 300 for high end and 300 for budget apparel retail stores and that we got 548 complete surveys of which 258 were from consumers of high end apparel retail stores and 290 were from consumers of budget apparel retail stores which were utilized for examination. The high end stores included in the study include H&M, Veromoda, ONLY and Westside and budget stores included in the study include Trends, Max, FBB and Pantaloons. The discriminate function revealed a significant association between groups and all predictors, accounting for 64.5% of between group variability, the structure matrix revealed three significant predictors, namely Reliability, Physical Aspects and Policy with problem solving and personal interaction as poor predictors. The cross validated classification showed that overall 76% were correctly classified.

**KEYWORDS:** Apparel retail stores, RSQS Scale, Discriminant Analysis, Retail service quality

### INTRODUCTION

Service Quality is the client's judgment of generally speaking greatness of the service corresponding to the quality that was expected. Shopper's store inclinations are related with the nature of services conveyed by the retailer. It strongly affects cost, consumer loyalty, faithfulness and profitability. In retailing, the view of service quality is not the same as others in service industry. In retail locations there is a blend of product and service; retailers are probably going to have more effect on service quality than that of product quality.

In the course of the last fifteen years, research on service quality has developed broadly and considerably. The subject has pulled in enthusiasm among managers and analysts in view of the significant impacts of client perception of service quality have on the fulfillment and loyalty of clients, just as on brand value. Service quality research has likewise accomplished a really worldwide extension and criticalness and pulled in commitments from researchers from numerous other disciplines.

It is a blend of two words, Service and Quality where we discover accentuation on the accessibility of value services to definitive users. The term quality spotlights on standard or detail that a help producing quality service association guarantees. We can't have an obvious limit for quality. Logical developments and advancements clear the paths for the value generation. More frequency in innovations, less gap in the process of quality up-gradation.

It is all in all correct to make reference to that the service quality fulfillment is the result of the assets and exercises extended to offer help against the desires for clients from the equivalent. It is likewise opined that the service quality can be broken into technical quality and utilitarian quality to improve the degrees of the nature of service quality that can be offered. The service creating associations are required to distinguish the reasons involved behind mounting disappointment among the clients and to initiate proper measures (technical or utilitarian) to limit or control it.

The SERVQUAL model of measuring service quality is based on the spearheading work of Parasuraman, Zeithaml and Berry. The model talks around the way a client recognizes the benefit quality by comparing the anticipated benefit with the seen benefit. Based on SERVQUAL, Dabholkar et al. (1996:3-16) proposed an instrument, which measures retail benefit quality, particularly. The interesting characteristics of store retailing suggest that parameters that characterize service quality in retailing vary from any other benefit (Finn

& Sheep, 1991:483-490; Gagliano & Hathcote, 1994:60-69). In this manner, instrument that are created to degree service quality in "pure" benefit setups, might demonstrate to be risky when connected in a retail store setting. Hence RSQS model has been used here in our study.

## LITERATURE REVIEW

Different authors have defined one-of-a-kind factors of retail service quality. They discovered that buyers with excessive experience and lower fatalism have a tendency to count on high standard of service provider pleasant and discover that it was once delivered. Kimani (2012) forwarded that elements like deep assortment, exceptional prices for exclusive sizes, cleanliness and safety play an indispensable function in delivering service quality of stores and supermarkets.

Inquiries about having observationally tried RSQS in numerous nations and different retail designs and found the five measurements to be substantial. RSQS to begin with was tried by Boshof & Terblance(1997) for measuring the benefit of quality discernments of hypermarket customers in South Africa and found fitting. An examination by Leen (2004) on apparel store customers in Malaysia demonstrates the appropriateness of the scale in a diverse environment. Additionally, Das (2008) measured the service quality of departmental stores, discount stores and General stores, supermarkets of Kazakhstan and found empowering outcomes about RSQS appropriateness

The five components of the Retail Service Quality Scale are:

### **Physical Aspects:**

Dabholkar et al (1996) characterized the physical perspectives measurement as the presence of the store and store format that makes it advantageous for clients. This measurement has two sub-measurements: appearance and accommodation. As per Dabholkar et al (1996), the store picture, the neatness of the store, the tidiness of the open offices, the store format and capacity to discover items in the store are significant components of the physical perspectives of retail store in the past. This measurement was like the 'physical assets' measurement of service quality however incorporated extra things, for example, the comfort of the shop and the store design (Kim and Jin, 2002).

### **Reliability:**

Dabholkar et al (1996) recommended that the unwavering quality measurement was like the dependability measurement of SERVQUAL, as the capacity of a retailer to keep guarantees, doing things right, the accessibility of items and to give guaranteed service constantly and precisely (Parasuraman et al. 1988). Dabholkar, Thorpe and Rentz (1996) called attention to that keeping guarantees and doing it right were recognized during their meetings and were significant sub measurements. Another contrast between the reliability measurement in the SERVQUAL and the RSQS was that the accessibility of items was a piece of the measurement in the RSQS however not in the SERVQUAL. In their investigation of created and creating nations, Malhotra et al (1994), found that the dependability measurement adjusted more to condition with cutting edge innovation, prosperity and rivalry, while service quality in creating markets ought to stress on the work force parts of service.

### **Personal Interaction:**

It incorporated the activities of the retail service people, and how they associate with store clients (Dabholkar et al 1996). It included moving certainty and politeness/support as sub measurements. This measurement was a mix of the 'responsiveness' and 'confirmation measurement' of SERVQUAL and incorporated the representative's assistance and the capacity to give trust (Kim and Jin, 2002). This measurement was proposed as a different measurement since interviews uncovered the significance of feeling of assurance, feeling pleasant when shopping at the store and the assistance provided to the clients of the store Dabholkar et al (1996). The individual communication pointers included proficient, affable salesmen, and the speed of service given (Dabholkar et al 1996; Siu and Cheung, 2001).

### **Problem Solving:**

It was the way where store individuals handle client protests, or the capacity of workers in giving over returns and to manage grievances. This was another measurement that was diverse to the components of SERVQUAL and was included as a piece of service recuperation (Kim and Jin, 2002). This measurement had no sub-measurements and was added to manage the connection between the store workers and the clients, and the way wherein issues were dealt with. Literature survey additionally proposed the significance of returning and trading things and the manner in which workers tackle those issues (Dabholkar et al 1996). This measurement lined up with the progressive system esteem in that the authenticity of the store, as the retailer of merchandise, made the store answerable for selling products that proceed as guaranteed.

### **Policy:**

The last RSQS measurement was policy. It incorporated the measure of accessible parking, store strategy, for example, working hours, the sorts and nature of product completed and installment strategies, etc. This was likewise another measurement, which was not like any of the SERVQUAL measurements as it had no sub-measurements and estimated the service quality that was influenced by the store approaches, for example, the opening times of the store and nature of items etc.

## **RESEARCH METHODOLOGY**

While leading a relative investigation of selected clothing retail locations, an organized structured questionnaire was utilized to gather information from respondents. The point of the survey was to have understanding into retailing service quality and the service quality discrimination factors between high end retail and budget retail stores.

Random method of sampling was utilized for information assortment. The poll contains 5 retailing service quality measurements created by Dabholkar, Thorpe and Rentz (1996). The respondents were approached to rate retailing service quality utilizing a seven-point Likert Scale for high end retail stores and budget retail stores. Here we have utilized a 7-point Likert scale for the examination, as opposed to a 5-point Likert scale since 7-point scale expands the precision rate and nature of the reactions (Prayag, 2007; Buttle, 1996). Accordingly, all announcements utilized a seven-point scale since it would give a superior ordinary spread of perceptions. Segment data like sexual orientation, age, marital status, occupation and pay were likewise gathered. All out 600 surveys were circulated, 300 for high end and 300 for budget apparel retail stores and that we got 548 complete surveys of which 258 were from consumers of high end apparel retail stores and 290 were from consumers of budget apparel retail stores which were utilized for examination. The high end stores included in the study include H&M, Veromoda, ONLY and Westside and budget stores included in the study include Trends, Max, FBB and Pantaloons.

## **DATA ANALYSIS AND INTERPRETATION**

**H1:** Physical aspects is the discriminatory factor distinguishing between high end apparel retail store and budget apparel retail store.

**H2:** Reliability is the discriminatory factor distinguishing between high end apparel retail store and budget apparel retail store.

**H3:** Personal Interaction is the discriminatory factor distinguishing between high end apparel retail store and budget apparel retail store.

**H4:** Problem Solving is the discriminatory factor distinguishing between high end apparel retail store and budget apparel retail store.

**H5:** Policy is the discriminatory factor distinguishing between high end apparel retail store and budget apparel retail store.

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Discriminant or discriminant work investigation is a parametric strategy to ascertain which weightings of quantitative factors or indicators best separate between at least 2 than 2 gatherings of cases and show improvement over possibility (Cramer, 2003). The investigation makes a discriminant work which is a direct mix of the weightings and scores on these factors. The greatest number of capacities is either the quantity of indicators or the quantity of gatherings short one, whichever of these two worth is the minuscule.

Discriminant Function Analysis (DA) embraces a similar assignment as multiple linear regression by foreseeing a result. Be that as it may, the equation is restricted to situations where the reliant variable on the Y axis is a dependent variable so the blend of indicators will, through the equation, produce assessed mean numerical Y esteems for given estimations of weighted mixes of X values. In any case, many factors are categorical, for example, ideological group casting a ballot goal, transient/non-transient status, making a benefit or not, holding a specific charge card, possessing, leasing or paying a home loan for a house, utilized/jobless, fulfilled versus disappointed workers, which clients are probably going to purchase an item or not accepting and so forth. DA includes the assurance of a direct condition equation that will foresee which bunch the case has a place with. The type of the condition or capacity is:

$$D = v_1X_1 + v_2X_2 + v_3X_3 + \dots + v_nX_n + a$$

Where D = discriminate function

v = the discriminant coefficient or weight for that variable

X = respondent's score for that variable

a = a constant

i = the number of predictor variables

This capacity is like a regression equation. The v's are unstandardized discriminant coefficients undifferentiated from the b's in the equation. These v's boost the distance between the means for the measure (subordinate) variable. Normalized discriminant coefficients can likewise be utilized like beta load in regression. Great indicators will in general have enormous loads. What you need this function to do is boost the distance between the classifications, for example think of a condition that has solid discriminatory force between different groups. In the wake of utilizing a current arrangement of information to compute the discriminant work and characterize cases, any new cases would then be able to be grouped. The quantity of discriminant capacities is one less the quantity of groups. There is just one function for the fundamental two group discriminant investigation.

Prior to continuing with the examination, we need to part the example into 2 segments. One is known as the analysis sample which is typically greater in extent when contrasted with the holdout test which can be trivial. There is no standard parting esteem yet a 70% examination test and 30% holdout test is normally utilized while a few specialists go to the degree of 50:50. This is accomplished by parting the example whereby we build up a function utilizing the analysis and afterward utilize that function to foresee in the holdout test to check the prescient exactness of the model we have created (Ramayah et al., 2004; Ramayah et al., 2006).

Based on the data gathered, the five factors of RSQS scale was used for differentiation between the consumers of High end retail stores and consumers of budget retail stores. These factors were the personal interaction, policy, problem solving, reliability and physical aspects. The details of 205 consumers of budget retail stores and 180 high end retail store customers at random were initially evaluated for identifying the most discriminating factor and the discriminant score. Using the discriminant model the remaining 30% customers of both the stores were used for out-of-sample performance to test the validity of the model and calculating the model accuracy.

### *Group statistics tables*

In discriminant examination we are attempting to foresee a gathering enrollment membership, so initially we look at whether there are any noteworthy contrasts between groups on every one of the independent factors utilizing group means and ANOVA results information. The Group Statistics and Tests of Equality of Group Means tables give this data. On the off chance that there are no huge grouping contrasts it isn't advantageous continuing any

further with the examination. The thought of factors that might be significant can be gotten by assessing the group means and standard deviations.

For example, mean differences between Reliability and Physical Aspects depicted in Table 1 suggest that it may be good discriminator as the separations are large. Similarly, policy and problem solving factors also the score of high end is slightly higher than budget stores. For the personal interaction factor the score for budget (4.67) is slightly higher than that of high end stores (4.44).

**TABLE 1:**

HighEnd_Budget		Mean	Std. Deviation	Valid N (listwise)	
				Unweighted	Weighted
HighEnd	Reliability	6.44	1.944	9	9.000
	Physical_Aspects	6.01	1.765	9	9.000
	Policy	5.78	1.986	9	9.000
	Problem_Solving	5.22	2.108	9	9.000
	Personal_interaction	4.44	1.424	9	9.000
Budget	Reliability	5.05	2.000	9	9.000
	Physical_Aspects	4.93	1.987	9	9.000
	Policy	4.63	1.803	9	9.000
	Problem_Solving	4.63	1.414	9	9.000
	Personal_interaction	4.67	1.936	9	9.000
Total	Reliability	5.75	2.608	18	18.000
	Physical_Aspects	5.47	1.876	18	18.000
	Policy	5.21	1.984	18	18.000
	Problem_Solving	4.93	1.801	18	18.000
	Personal_interaction	4.56	1.653	18	18.000

**TABLE 2:**

Tests of Equality of Group Means					
	Wilks' Lambda	F	df1	df2	Sig.
Reliability	.325	19.878	1	16	.000
Physical_Aspects	.538	13.729	1	16	.002
Policy	.660	2.610	1	16	.036
Problem_Solving	.935	1.103	1	16	.309
Personal_interaction	.995	.077	1	16	.785

To understand which of the characteristics a significant difference exists between the mean of the two groups, a one-way ANOVA is carried out for each of the characteristic, where each of the predictor variable is treated as dependent variable and the high end store/budget store as independent variable. From the above table we find that the significant difference in the mean exists for Reliability and Physical Aspects, for which p value is 0.000 and 0.002 respectively, which is less than 0.05. There is no significant difference for the remaining three characteristics.

**TABLE 3:**

**Pooled Within-Groups Matrices**

		Reliability	Physical_A spects	Policy	Problem_Sol ving	Personal_int eraction
Correlation	Reliability	1.000	.612	.633	.549	.409
	Physical_Aspects	.612	1.000	.518	.565	.424
	Policy	.633	.518	1.000	.541	.327
	Problem_Solving	.549	.565	.541	1.000	.264
	Personal_interaction	.409	.424	.327	.264	1.000

In ANOVA, a supposition will be that the differences were equal for each group however in DA the fundamental supposition will be that the variance co-change values are identical. We test the null hypothesis that the covariance matrices do not differ between groups formed by the dependent. We need this test not to be noteworthy with the goal that the invalid speculation that the groups don't vary can be held. To avoid the multicollinearity, the above correlation matrix shows that the correlation coefficient between any pair of predictor variables is less than 0.75 hence there is no serious problem of multicollinearity.

**TABLE 4:**

**Canonical Discriminant Function Coefficients**

	Function
	1
Reliability	.618
Physical_Aspects	.424
Policy	.355
Problem_Solving	.288
Personal_interaction	.157
(Constant)	-1.800

Unstandardized coefficients

***The canonical discriminant function coefficient table***

These unstandardized coefficients (*b*) are used to create the discriminant function (equation). It operates just like a regression equation. In this case we have (Table 4) the Discriminant Analysis model is as follows:

$$Y = -1.8 + 0.618 X_1 + 0.424 X_2 + 0.355 X_3 + 0.288 X_4 + 0.157 X_5$$

Where Y = Discriminant Score

- X<sub>1</sub> = Reliability
- X<sub>2</sub> = Physical\_Aspects
- X<sub>3</sub> = Policy
- X<sub>4</sub> = Problem\_Solving
- X<sub>5</sub> = Personal\_interaction

The discriminant work coefficients *b* or normalized structure beta both demonstrate the fractional commitment of every factor to the discriminate function controlling for every other variable in the condition. They can be utilized to survey every IV's interesting commitment to segregate work and in this manner give data on the overall significance of every factor.

***Table of Eigenvalues***

This gives data on every one of the segregate capacities (conditions) created. The most extreme number of discriminant capacities delivered is the quantity of groups less 1. We are only using two groups here, namely 'high end' and 'budget' retail outlets so only one function is displayed.

The sanctioned connection is the multiple correlation between the indicators and the discriminant function. With just one function it gives a large model fit which is deciphered similar to the extent of change explained ( $R^2$ ).

**TABLE 5:**

**Eigenvalues**

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1.033 <sup>a</sup>	100.0	100.0	.803

a. First 1 canonical discriminant functions were used in the analysis.

A correlation of .803,  $R^2$  is 0.6455 suggests the model explains 64.5% of the variation in the grouping variable, i.e. whether a respondent will go for High end or budget retail store for shopping based on service quality assessment and it also explains that the variance in the discriminating model between prospective high end/budget is due to the changes in the five predictor variables.

**Group centroids table**

A further method of deciphering discriminant investigation results is to depict each group as far as its profile, utilizing the gathering methods for the indicator factors. These are displayed in the Group Centroids table (Table 6). In our example, budget store consumers have a mean of -3.858 while high end store consumers produce a mean of 3.858. Cases with scores close to a centroid are anticipated as having a place with that group.

**TABLE 6:**

**Functions at Group Centroids**

	Function
High_end_Budget	1
High_end	3.858
Budget	-3.858

Unstandardized canonical discriminant functions evaluated at group means

The Average of the above function group centroids for high end & budget is Zero. Any prospective whose discriminant score is greater than zero will be consumer of High end apparel retail store and those less than zero will be a consumer of Budget apparel retail store. It can also be inferred that a high score on Reliability, physical aspects would be a likely high end store customer whereas a high score either of the other three variables would be a likely budget store consumer.

**TABLE 7:**

**ANOVA**

Discriminant Scores from Function 1 for Analysis 1

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	16.536	1	16.536	16.536	.001
Within Groups	16.000	16	1.000		
Total	32.536	17			

**Wilks' lambda**

Wilks' lambda demonstrates the purport of the discriminant function. This table (Table 8) indicates a highly significant function ( $p > .05$ ) and provides the proportion of total variability not explained, i.e. it is the opposite of the squared accepted relationship. So we have 35.5% unexplained.

**TABLE 8:**

**Wilks' Lambda**

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.355	9.936	5	.022

The value of Wilks' Lambda is 0.355 which is same as that obtained using the results of One Way ANOVA. Wilks' Lambda takes the value between 0 to 1. Lower the value of Wilks' Lambda higher is the significance of

the discriminant function. The Chi Square statistic is 9.936 and p value of 0.022. It is inferred that the discriminant function is significant and can be used for further interpretation.

**TABLE 9:**

**Standardized Canonical Discriminant Function Coefficients**

	Function 1
Reliability	1.219
Physical_Aspects	.876
Policy	.404
Problem_Solving	.338
Personal_interaction	.268

***The standardized canonical discriminant function coefficients table***

The interpretation of the discriminant coefficients (or weights) is like that in multiple regressions. Table 9 provides an index of the importance of each predictor like the standardized regression coefficients (beta's) did in multiple regression. The sign indicates the direction of the relationship. Reliability score was the strongest predictor while physical aspects was next in importance as a predictor. These two variables with large coefficients stand out as those that strongly predict allocation to the high end store or do budget store group.

**TABLE 10:**

**Structure Matrix**

	Function 1
Reliability	.911
Physical_Aspects	.647
Policy	.397
Problem_Solving	.258
Personal_interaction	.068

***The structure matrix table***

Table 10 provides another way of indicating the relative importance of the predictors and it can be seen below that the same pattern holds. The structure matrix correlations are considered more accurate than the Standardized Canonical Discriminant Function Coefficients. The structure matrix table (Table 10) shows the correlations of each variable with each discriminate function. These Pearson coefficients are structure coefficients or discriminant loadings. They serve like factor loadings in factor analysis. By identifying the largest loadings for each discriminate function the researcher gains insight into how to name each function. Generally, just like factor loadings, 0.30 is seen as the cut-off between important and less important variables.

The correlation coefficient between the discriminant score and the variable Reliability is 0.911, whereas correlation with Physical Aspects, Policy, Problem Solving and Personal Interaction is 0.647, 0.397, 0.258 and 0.068 respectively. So we can see that Reliability in RSQS scale is the most important discriminating factor between the high end retail store and budget store.

The equation was used to predict the membership of the out of sample performance on the remaining 30% respondents. 165 respondents were tested to lookout for accuracy in the predicted membership. It is noted that out of 77 high end retail consumers, 60 are classified as correctly as their discriminant score is greater than zero. Further out of 88 budget retail consumers 66 are classified correctly as score is less than zero. Therefore, out of 165 cases, 6 cases are classified correctly resulting in an out of sample performance accuracy of 76%

**CONCLUSION:**

A discriminant analysis was conducted to predict whether a customer is a high end apparel retail customer or a budget apparel retail customer. Predictor variables were Reliability, Policy, Personal Interaction, Physical Aspects and Problem Solving. Significant mean differences were observed for three out of five predictors on the DV. The discriminate function revealed a significant association between groups and all predictors, accounting for 64.5% of between group variability, although closer analysis of the structure matrix revealed three significant predictors,

namely Reliability score (.618), Physical Aspects score (.424) and Policy(.355) with problem solving and personal interaction as poor predictors. The cross validated classification showed that overall 76% were correctly classified.

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