



## IMPACT OF BRAND ADVERTISEMENT ON PURCHASE OF CONSUMER DURABLES IN BANGALORE CITY, INDIA-AN ECONOMETRIC ANALYSIS

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### ABSTRACT

*The study reveals the behavior of consumers towards purchase of consumer durable s. The results revealed that for high income group, the scatter plot shows a linear fit indicating a two-dimensional figure is the best fit to the model. Accordingly, the two-dimensional figure shows that refrigerator is unique as also television. Consumers perceive computer and washing machine similar. Mobile and Air-conditioner are perceived as similar. For medium income group, the scatter plot shows a linear fit indicating a two-dimensional figure is the best fit to the model. Accordingly, the two-dimensional figure shows that computer is unique as also television. Consumers perceive refrigerator, mobile and washing machine perceived as similar. For low income group, the scatter plot shows a linear fit indicating a two-dimensional figure is the best fit to the model. Accordingly, the two-dimensional figure shows that television, refrigerator is unique as also air-conditioner. Consumers perceive computer, mobile and Washing machine as similar.*

**KEYWORDS:** Consumer durables, consumer behavior, brand competition, multidimensional scaling

**JEL Codes:** C33, C42, E31, E32, M13, M37.

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### INTRODUCTION

India, with about one and a quarter billion population and a vibrant economy has emerged as one of the largest markets in the world today. In today's business world, marketing processes are based on the interaction between a business and the consumers. Advertising has been considered as a popular management tool for dealing with the highly rapid technological changes and also the marketing changes in today's competitive markets. The consumer is the forgotten man and he is the leased organized and the most centrifugal element in the circle of investment, production, sale and consumption and is generally taken for granted as one who has anyhow to buy in order to live (Gulshan, 1994). In developed countries, the quality of products has improved a lot over the years and has led to the decrease in the quality variability across many product categories (Grunewald et al., 1993). The product, service and store choice

decisions have also steadily increased across these nations. In contrast, consumers in India are diverse in composition, varying in religion, caste and language; ignorant and apathetic and therefore remain at the receiving end. The malpractices of business were manifested in poor quality, high prices, deficient services, adulterated and hazardous goods, misleading advertising etc.

In the recent past rural India has been witnessing a sea change particularly in the standard of living and life styles. With the population of over one billion, India is on the threshold of becoming one of the world's foremost consumer markets. About a quarter of this huge mass of consumers is urbanized and about three-quarter are rural (Sehrawet&Kundu, 2007). Ramana Rao (1997) observed that the boom in rural areas is caused by factors such as increased discretionary income, rural development schemes, improved infrastructure, increased awareness,



expanding private TV channel coverage and emphasis on rural market by companies. North and Kotze (2001) observed that parents can use television advertisements in various ways as a means of communicating and educating their children on consumer matters. According to Liebeck (1998) teenagers are now more knowledgeable. They are truly the internet generation, and get their news and information primarily from television. Atkin (1978) observed that children or adolescents are most influential when they are primary customers. There is a substantial variation in the amount of teenagers' influence in purchase decision for products for their own use and for their family (Cotte & Wood, 2004). Anderson and Bettencourt (1993) conducted a study on segmentation of consumers based on socio-economic and demographic variables. Significant differences existed in expenditure on food between the segments that were formed.

It is necessary to examine the consumer behaviors in particular in transitional economies including India. Durable companies spend 30-35% of the revenues on advertising especially during the festive months to push volumes. The rapidly growing middle class consumers make India an attractive market for international firms because they are increasingly exposed to western products and lifestyles through the media. Studied the factors influencing the consumption of selected dairy products in Bangalore city. The results of the study revealed that income and price were the factors that significantly influenced the consumption of table butter. Price had a negative impact and income a positive impact, on consumption (Amitha, 1998). Today, Karnataka is the eighth largest in the country both in terms of population and area. Its capital city, Bangalore, is now classified as a mega city and has population of over eight million inhabitants. Boulding et al (1996) explains the simple economic model to assess consumer's valuation of safety features. In particular, we model the benefit from safety as the reduction in the probability of death and the associated economic value of this reduction. We then apply this theoretical model to investigate market valuation of antilock brakes and airbags via the specification and estimation of a hedonic price equation. Results indicate that consumers behave in a manner consistent with the economic model we develop. The last two decades have been a period of rapid growth for Bangalore with a proliferation of Multi-National Companies choosing to locate their operations in the city and its environs in industrial products, consumer durables etc.

Bangalore city has been chosen as the study area, as it is a leading consumer center in India. As a country develops, people buy more consumer durables. To meet the demand more products become available.

They need more shelf space. It results in a retail revolution. That's what's happening in India today. A new generation of retail outlets is emerging, which will change the landscape of the country's cities.

This study has been undertaken with the objective of understanding and represent the market dynamics and to reveal the brand competition as it is in the mind of the consumer.

## METHODOLOGY

The study was conducted in Bangalore city of Karnataka, India which is situated in the Southern part of the Karnataka state.

### Sampling

Bangalore city was considered as the sample universe and the cluster sampling method was followed to select the sample. In the first stage the 147 corporation wards were considered as the clusters and 10 clusters were randomly drawn from the population. From each cluster 50 respondents were randomly drawn making a total sample of 500 respondents. The sample respondents were post stratified based on their income into high medium and low.

### Collection of Data

Primary data was obtained from the selected respondents with the help of pre-tested structured schedule. Respondents were questioned in the language they were familiar.

The data collected from the respondents were related to consumer durables and the purchase of consumer durables and attributes related to the consumer durables and then brand's perception on each consumer durables.

### Method of Analysis

Tabular analysis used to assess the dominant brands purchased by consumers among different brands of consumer durables.

### Multidimensional Scaling

Multidimensional scaling (MDS) is a means of visualizing the level of similarity of individual cases of a dataset. It refers to a set of related ordination techniques used in information visualization, in particular to display the information contained in a distance matrix. Multidimensional scaling (MDS) also known as perceptual mapping is a procedure that allows a researcher to determine the perceived relative image of a set of objects (firms, products, ideas, or other items associated with commonly held perceptions). The purpose of MDS is to transform consumer judgments of overall similarity or preference (e.g., preference for stores or brands) into distances represented in multidimensional space. This technique was used to understand consumer perception with regard to product or brand and for perceptual mapping.



The objective is to transform consumer judgments of preference /similarity to brand in to distances represented in multidimensional space.

## RESULTS AND DISCUSSION

To assess the role of advertising in their purchase decision Brand wise possession of consumer durables

Among Air conditioner the dominant brands among the respondents were Blue Star and LG accounting for 53 % and 25 % respectively. The moderate brands were Godrej and Summer Cool with a market share of 10 % each in Table 1.1(a).

### 1.1. (a) Air conditioner

**Table. 1.1. (a): Brand preference of Air Conditioners**

| Current brand      | AC        | Percentage to Total |
|--------------------|-----------|---------------------|
| Blue star          | 15        | 53.57               |
| Godrej             | 3         | 10.71               |
| LG                 | 7         | 25.00               |
| Summercool         | 3         | 10.71               |
| <b>Grand Total</b> | <b>27</b> | <b>100</b>          |

### 1.1. (b) Refrigerator

Among refrigerators the dominant brands among the respondents were Godrej and LG accounting for 34 % and 32 % respectively. The moderate brands

were Whirlpool with a market share of 7.5 % and Samsung with a market share of 9.77 % and the other important brands were Videocon, BPL, Kelvinator and IFB and Sony had a very small market share.

**Table.1.1 (b): Brand preference for refrigerators**

| Current brand      | Refrigerator | Percentage to Total |
|--------------------|--------------|---------------------|
| BPL                | 7            | 3.26                |
| Godrej             | 105          | 34.20               |
| IFB                | 2            | 0.65                |
| Kelvinator         | 13           | 4.23                |
| Ken star           | 10           | 3.26                |
| LG                 | 99           | 32.25               |
| Samsung            | 30           | 9.77                |
| Sansui             | 4            | 1.30                |
| Sony               | 3            | 0.98                |
| Videocon           | 8            | 2.61                |
| Whirlpool          | 23           | 7.49                |
| <b>Grand Total</b> | <b>307</b>   | <b>100.00</b>       |

### 1.1. (c) Computer

Among Computer the dominant brands among the respondents were HP and Dell accounting for 42 % and 12 % respectively. The moderate brands were Acer with a market share of 10 % and HCL with a market

share of 6.88 % and the other important brands were Lenovo, LG, and Philips. Assembled and Philips and AMD had a very small market share.

**Table.1.1(c): Brand preferences for Computers**

| Current brand      | COMPUTER      | Percentage to Total |
|--------------------|---------------|---------------------|
| Acer               | 16.00         | 10.56               |
| AMD                | 2.00          | 1.36                |
| ASSEMBLED          | 10.00         | 6.80                |
| Compaq             | 13.00         | 8.84                |
| Dell               | 18.00         | 12.56               |
| HCL                | 10.00         | 6.80                |
| HP                 | 62.00         | 42.18               |
| Lenovo             | 7.00          | 4.76                |
| LG                 | 7.00          | 4.76                |
| Philips            | 2.00          | 1.36                |
| <b>Grand Total</b> | <b>147.00</b> | <b>100.00</b>       |

**1.1. (d) Television**

Among Television the dominant brands among the respondents were LG and Onida accounting for 28.72 % and 14.05 % respectively. The moderate brands were BPL with a market share of 14.05 % and

Philips with a market share of 10.90 % and the other important brands were Sony, Samsung, Videocon, Sansui, TCL, Toshiba, Crown and Daewoo had a very small market share.

**Table.1.1 (d): Brand preferences for Television**

| Current brand      | Television | Percentage to Total |
|--------------------|------------|---------------------|
| Akai               | 7          | 2.52                |
| BPL                | 67         | 14.05               |
| Crown              | 3          | 0.63                |
| Daewoo             | 3          | 0.63                |
| LG                 | 137        | 28.72               |
| Onida              | 79         | 16.56               |
| Philips            | 52         | 10.90               |
| Samsung            | 32         | 6.71                |
| Sansui             | 6          | 1.26                |
| Sharp              | 2          | 0.42                |
| Sony               | 42         | 8.81                |
| TCL                | 12         | 2.52                |
| Toshiba            | 4          | 0.84                |
| Videocon           | 26         | 5.45                |
| <b>Grand Total</b> | <b>477</b> | <b>100.00</b>       |

**1.1. (e) Washing machines**

Among Washing machines, the dominant brands among the respondents were LG and Samsung accounting for 46.78 % and 16.96 % respectively. The moderate brands were IFB with a market share of 11.70

% and Godrej with a market share of 9.94 % and the other important brands were Whirlpool, Videocon, TVS and Sony had a very small market share.



Table.1.1 (e): Brand preferences for Washing Machine

| Current brand      | Washing Machine | Percent       |
|--------------------|-----------------|---------------|
| Godrej             | 17              | 9.94          |
| IFB                | 20              | 11.70         |
| LG                 | 80              | 46.78         |
| Onida              | 2               | 1.17          |
| Samsung            | 29              | 16.96         |
| Sony               | 2               | 1.17          |
| TVS                | 4               | 2.34          |
| Videocon           | 4               | 2.34          |
| Whirlpool          | 13              | 7.60          |
| <b>Grand Total</b> | <b>171</b>      | <b>100.00</b> |

## 2. MULTIDIMENSIONAL SCALING

Multidimensional scaling was done in order to see how consumers perceive the consumption of various goods.

### 2.1 Multidimensional Scaling of High Income Group

Multidimensional scaling was done in order to see how consumers perceive brands for High income

group. The scatter plot shows a linear fit indicating a two dimensional figure is the best fit to the model. Accordingly the two dimensional figure shows that Refrigerator is unique as also Television. Consumers perceive Computer and Washing machine similar. Mobile and Air-conditioner are perceived as similar. TV had a high use possession.

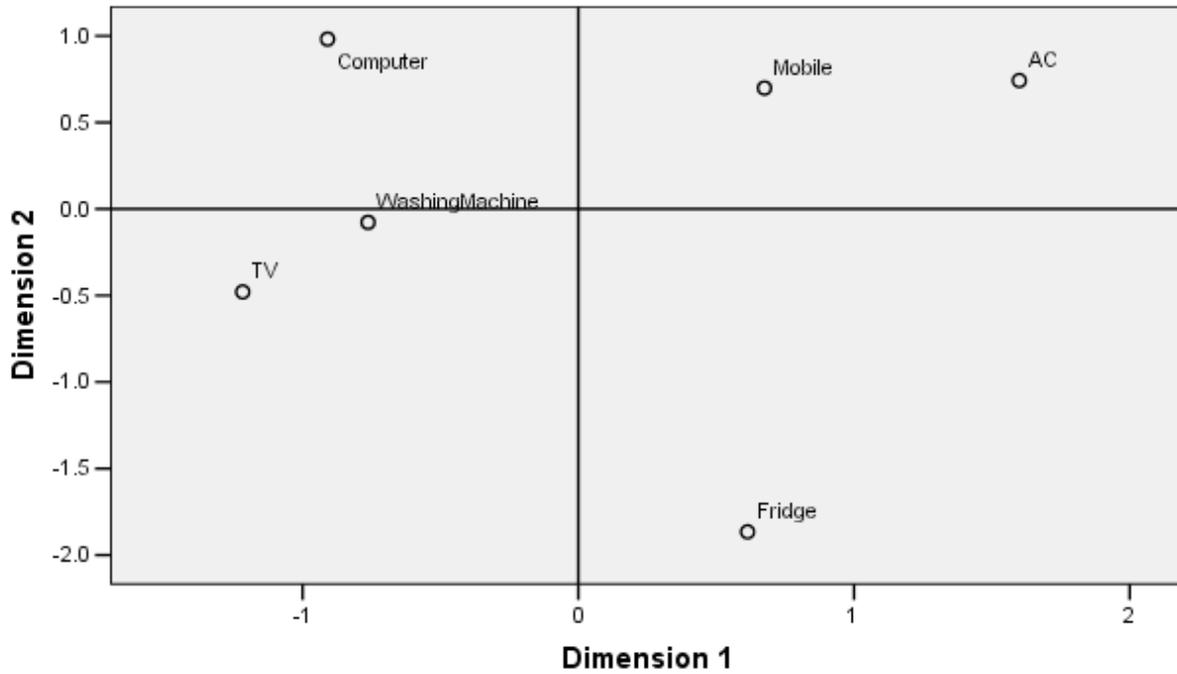
Table.2.1: Multi Dimensional Scaling of High Income Group

| Stimulus Number | Stimulus Name       | Dimension |         |
|-----------------|---------------------|-----------|---------|
|                 |                     | 1         | 2       |
| 1               | TV                  | -1.2171   | -0.4794 |
| 2               | Fridge refrigerator | 0.614     | -1.8657 |
| 3               | Mobile              | 0.6753    | 0.6987  |
| 4               | Computer            | -0.9094   | 0.9815  |
| 5               | Washing Machine     | -0.7625   | -0.0773 |
| 6               | AC                  | 1.5995    | 0.7421  |



### Derived Stimulus Configuration

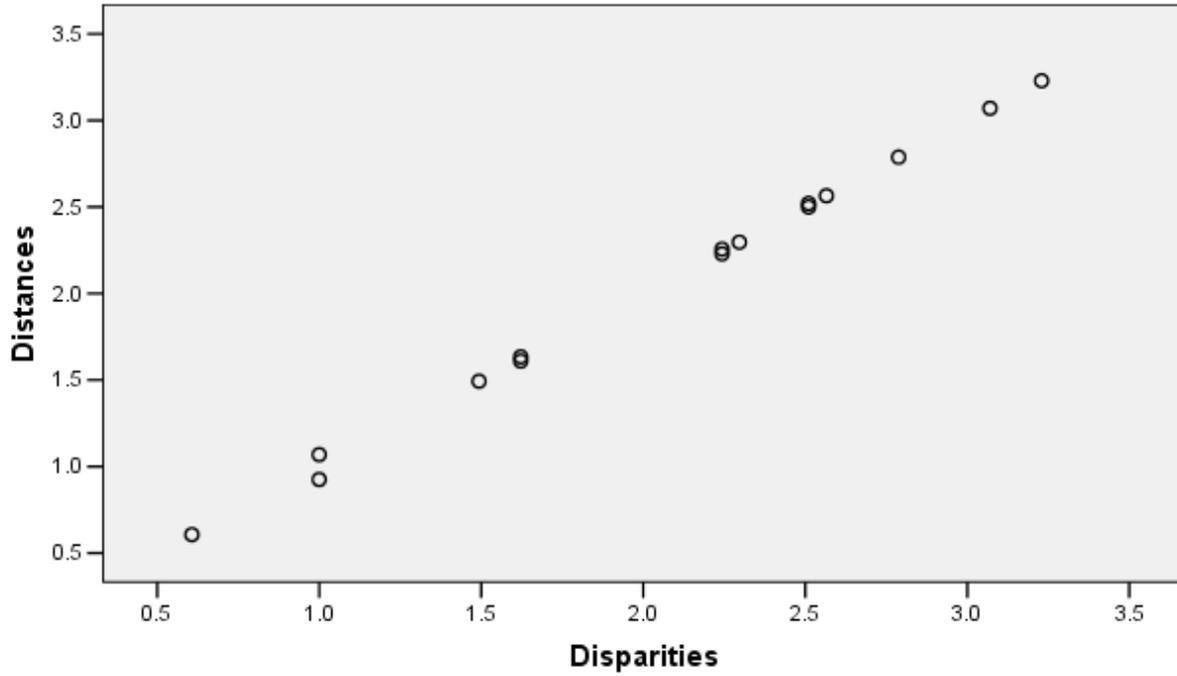
#### Euclidean distance model





### Scatterplot of Linear Fit

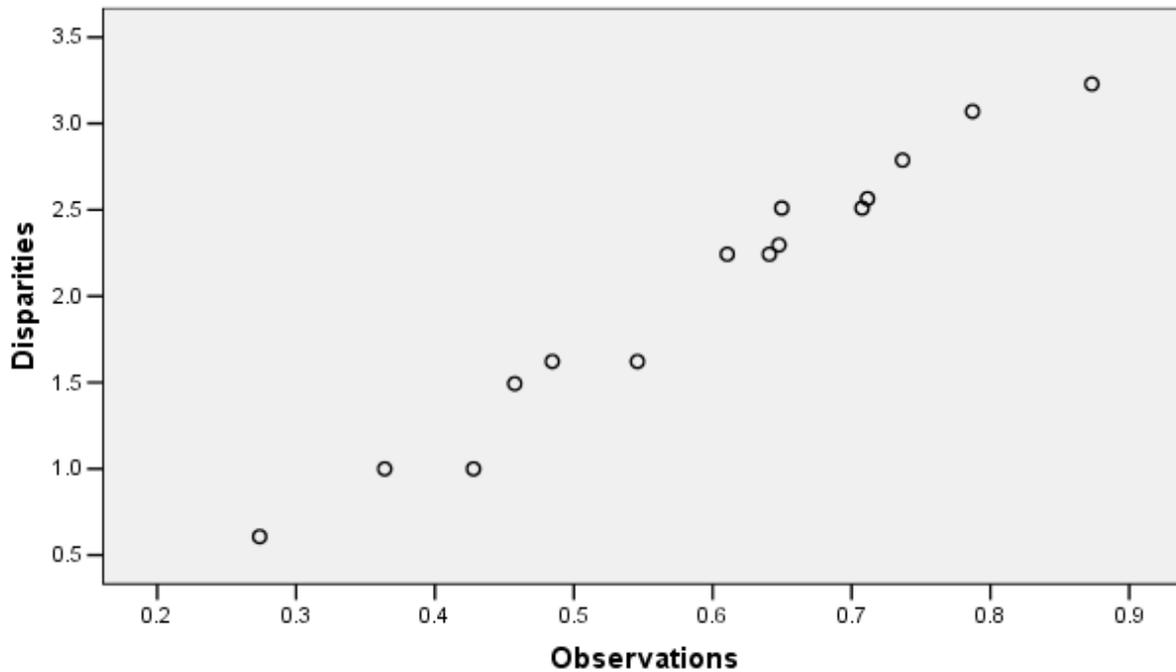
### Euclidean distance model





### Transformation Scatterplot

#### Euclidean distance model



### 2.2 Multi Dimensional Scaling of Medium Income Group

Multidimensional scaling was done in order to see how consumers perceive brands for Medium income group. The scatter plot shows a linear fit indicating a two dimensional figure is the best fit to the

model. Accordingly the two dimensional figure shows that Computer is unique as also Television. Consumers perceive Refrigerator, Mobile and Washing machine perceived as similar. Washing machine, fridge and mobiles had a higher weightage as against to TV.

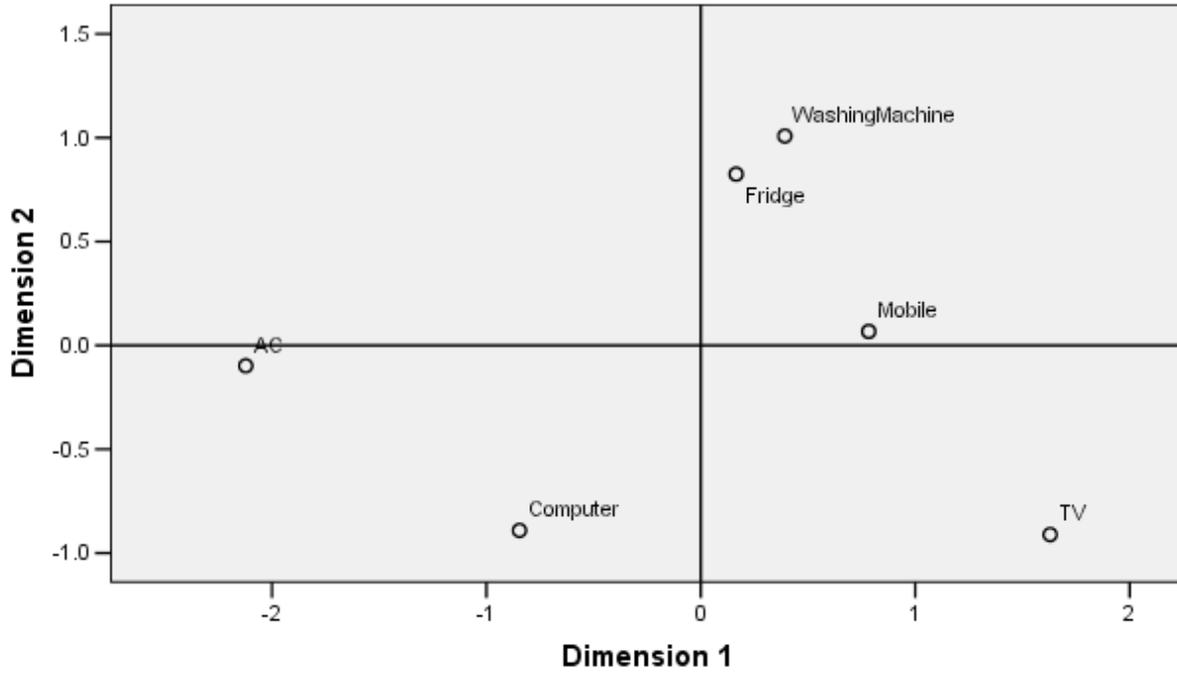
**Table.2.2. Multi Dimensional Scaling of Medium Income Group**

| Stimulus Number | Dimension            |         |         |
|-----------------|----------------------|---------|---------|
|                 | Stimulus Name        | 1       | 2       |
| 1               | TV                   | 1.6287  | -0.9109 |
| 2               | Fridge/ refrigerator | 0.1645  | 0.8247  |
| 3               | Mobile               | 0.7828  | 0.0671  |
| 4               | Computer             | -0.8457 | -0.891  |
| 5               | Washing Machine      | 0.3919  | 1.0082  |
| 6               | AC                   | -2.1223 | -0.0982 |



### Derived Stimulus Configuration

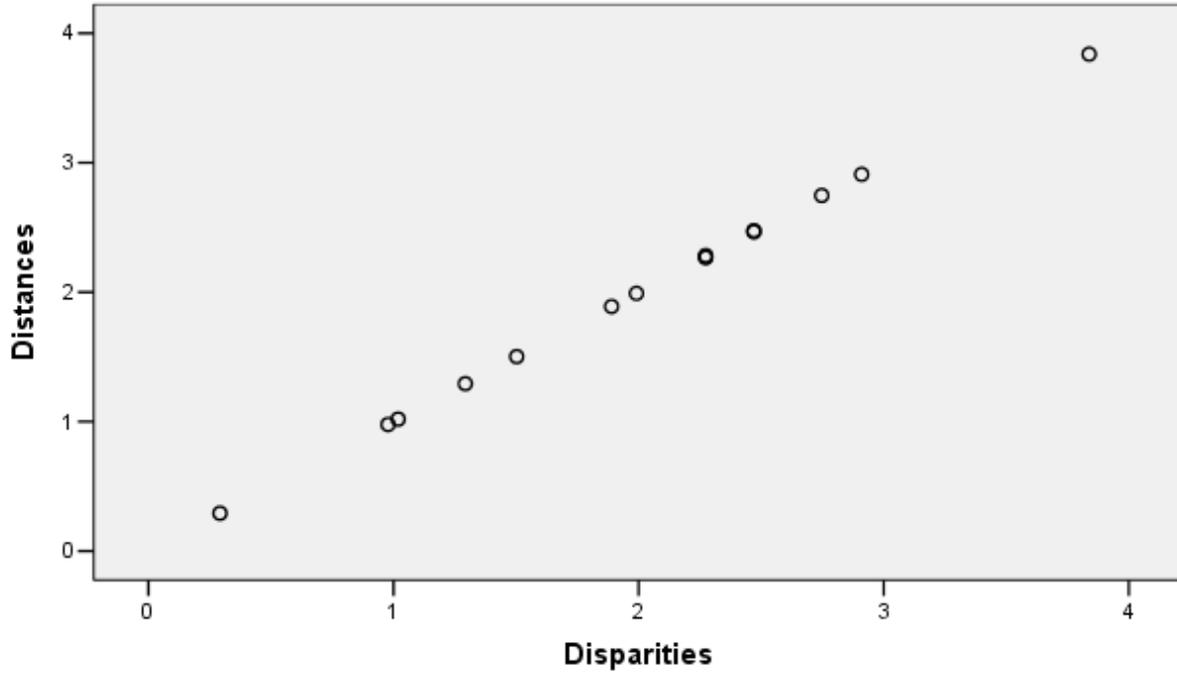
#### Euclidean distance model





### Scatterplot of Linear Fit

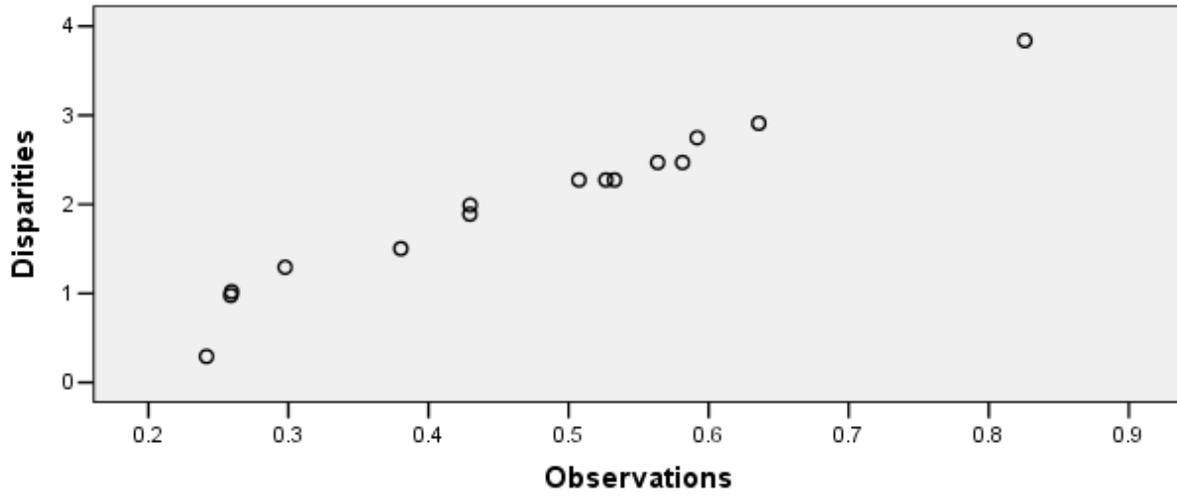
### Euclidean distance model





### Transformation Scatterplot

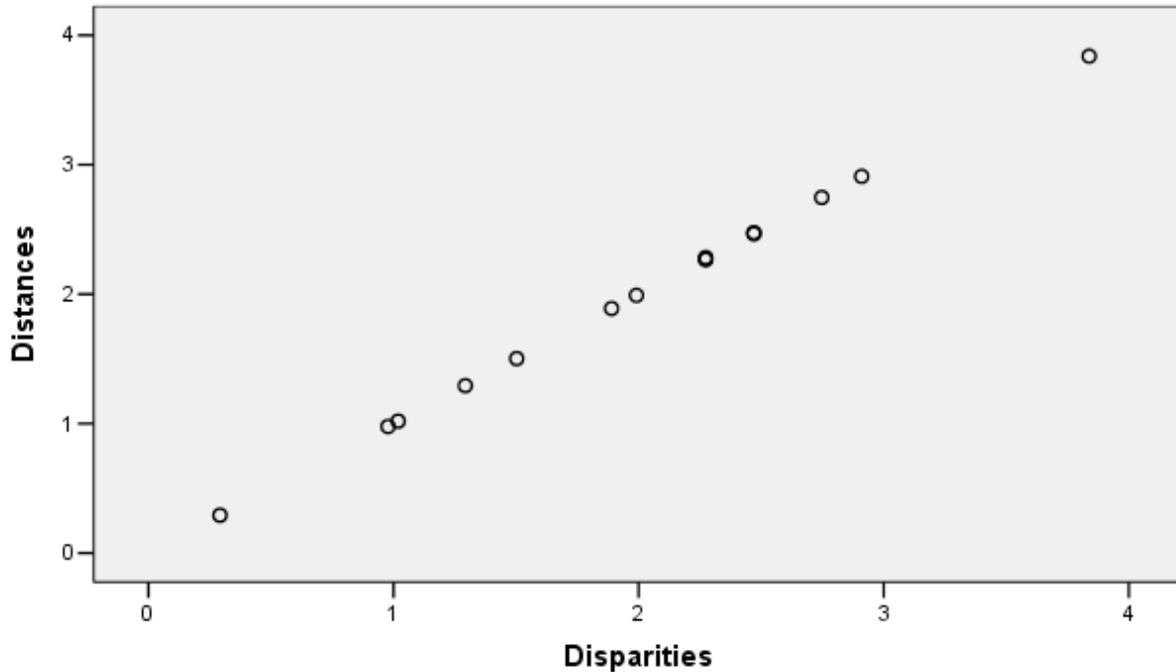
#### Euclidean distance model





### Scatterplot of Linear Fit

#### Euclidean distance model



### 2.3 Multi Dimensional Scaling of Low Income Group

Multidimensional scaling was done in order to see how consumers perceive brands for Low income group. The scatter plot shows a linear fit indicating a two dimensional figure is the best fit to the model.

Accordingly the two dimensional figure shows that Television, Refrigerator is unique as also Air-conditioner. Consumers perceive Computer, Mobile and Washing machine as similar. But TV was unique and possessed by all.

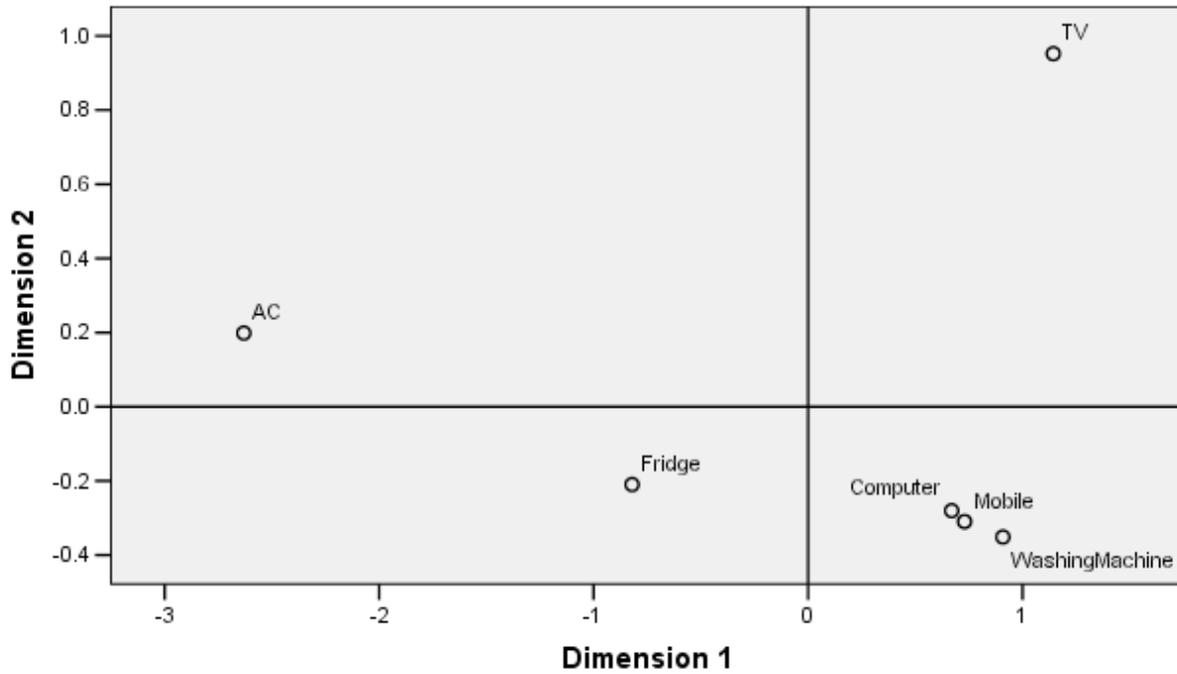
**Table.2.3:Multi-dimensional scaling of low income group**

| Stimulus Number | Dimension           |         |         |
|-----------------|---------------------|---------|---------|
|                 | Stimulus Name       | 1       | 2       |
| 1               | TV                  | 1.1438  | 0.952   |
| 2               | Fridge/refrigerator | -0.8207 | -0.2097 |
| 3               | Mobile              | 0.7297  | -0.3097 |
| 4               | Computer            | 0.6697  | -2802   |
| 5               | Washing Machine     | 0.9087  | -0.3513 |
| 6               | AC                  | -2.6313 | 0.1988  |



### Derived Stimulus Configuration

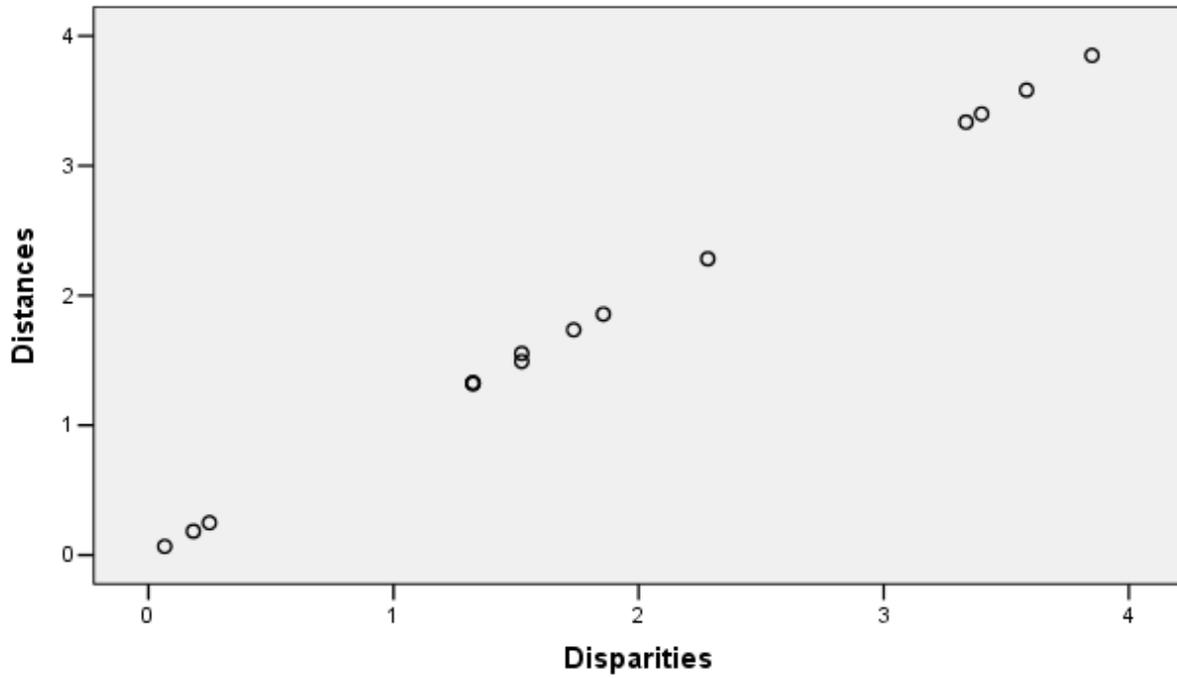
#### Euclidean distance model





### Scatterplot of Linear Fit

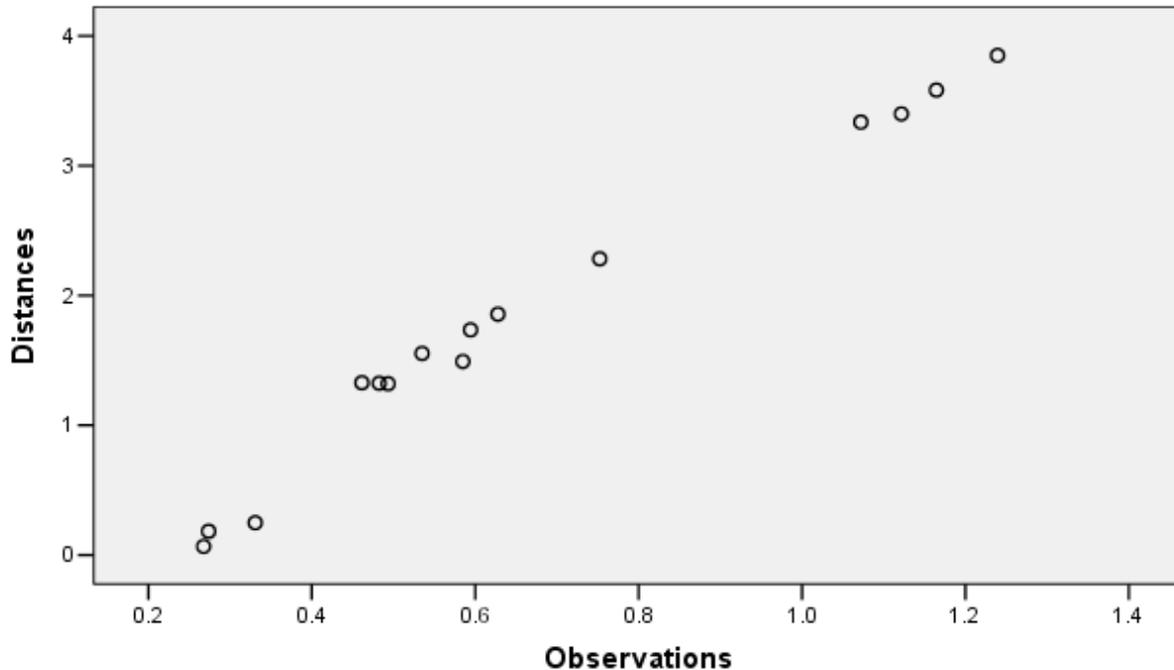
#### Euclidean distance model





## Scatterplot of Nonlinear Fit

### Euclidean distance model



## MAJOR FINDINGS AND CONCLUSIONS

The Positioning strategies of the brands determine the rules and strategic steps of competition in the market. Any brand that has strong and favorable position in the minds of its consumers has the chance of achieving consumer loyalty and sustainability. As tool of positioning analysis, perceptual mapping technique is widely used in brand marketing. In this study Multidimensional Scaling is used in order to identify the dimensions that the consumers use to evaluate the products and brands in according to and the number of these dimensions besides the positions of each brand according to these dimensions and the ideal position.

The average amounts spend on selected consumer durables like television, computer, refrigerator, computer washing machines and air cooler. From the analysis among different brands such as blue star brand is AC found highest preference followed by refrigerator from godrej, computer from HP, TV from LG and Washing Machine from LG.

Major Brand is ruling in the market is LG followed by Godrej, HP and Blue star. The summary of Multidimensional Scaling for the different income groups are as follows are for High income group, the scatter plot shows a linear fit indicating a two-dimensional figure is the best fit to the model. Accordingly, the two-dimensional figure shows that Refrigerator is unique as also Television. Consumers perceive Computer and Washing machine similar. Mobile and Air-conditioner are perceived as similar.

For Medium income group, the scatter plot shows a linear fit indicating a two-dimensional figure is the best fit to the model. Accordingly, the two-dimensional figure shows that Computer is unique as also Television. Consumers perceive Refrigerator, Mobile and Washing machine perceived as similar. For Low income group, the scatter plot shows a linear fit indicating a two-dimensional figure is the best fit to the model. Accordingly, the two-dimensional figure shows that Television, Refrigerator is unique as also Air-conditioner. Consumers perceive Computer, Mobile and Washing machine as similar.



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