Factors influencing Rural Consumers towards ISI Marked White Goods

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Abstract: The consumer durable and semi-durable industry has a dominance of multinationals and can be segregated into consumer electronics and consumer appliances (also known as White Goods). Quality is the inherent characteristic and distinctive attribute that makes a product different from others. The awareness of standards began in India with the establishment of the Indian Standard Institution (ISI), now called as Bureau of Indian Standards (BIS). Due to the fast changing scenario, the government recognized the need of strengthening the National Standards Body in 1986. If the consumer awareness is more, then there is the possibility of lesser exploitation. This article attempts to study the level of attitude and the factors which influence the rural consumers towards ISI marked white goods.

Keywords: BIS, ISI Mark, Quality, Rural Consumers, Standards, White Goods.

I. INTRODUCTION

Quality is the inherent characteristic and distinctive attribute that makes a product different from others. It embodies conformity to requirements, for it must essentially satisfy customer needs. The main accent is on prevention of faults. Products and services should be essentially free from defects, thereby becoming cost-effective. Quality can be maintained to a high degree of precision using latest technology, methodology and tools of various kinds. The quality standard can be maintained through verification procedures throughout the production cycle.

A. Establishment of Standards in India

In India, awareness of quality standards began with the establishment of the Indian Standards Institution. The Indian Standard Institution, popularly known as ISI, now called the Bureau of Indian Standards (BIS) was set up in 1947 as a registered society, under a Government of India resolution immediately after independence. It provides a thrust to standardization and quality thereby aspiring to gear up the competitive efficiency of industries with the active support of industrial, scientific and technical organizations together with the Central and the State governments. The Indian Standards Institution gave the nation the standards it needed for rationalization, orderly industrial and commercial growth, quality product and competitive efficiency.

However, in 1986 the government recognized the need for strengthening this National Standards Body due to fast changing socio-economic scenario and according it a statutory status. Thus came the Bureau of Indian Standards Act 1986 and on April 1, 1987, newly formed BIS took over staff, assets, liabilities and functions of erstwhile ISI. Through this change over, the Government envisaged building of the climate of quality culture and consciousness and greater participation of consumers in formulation and implementation of National Standards. Besides preparation and promoting the use of national standards, the institution also furthers the India's interests in the field of international standardization by close collaboration with the International Organization for Standardization (ISO) and International Electro-technical Commission (IEC). As standards in

some form or other are making life easier and safer, it is difficult to imagine our daily life without standards. It is developed in response to the needs of life. BIS has formulated about 17,000 standards in different technology areas.

BIS issues license for the use of 'ISI Mark' to such manufacturers only who give satisfactory evidence of being adequately equipped and who have incorporated a sound scheme for continuous inspection and checking of the quality of goods. BIS supervises the inspection and control operations of the different licensees and also draws samples from various points of production, storage and distribution. Thus the 'ISI Mark' on a product conveys an assurance to the consumer that the product complies with the requirements of the standard under a well-defined system of inspection, testing and quality control, which is devised and supervised by BIS and operated by the producer.

B. *Indian Consumer Durable Industry*

The consumer durable and semi-durable industry in India is dynamic and highly competitive. This industry has a dominance of multinationals and can be segregated into consumer electronics and consumer appliances (also known as white goods) such as televisions, audio system, refrigerators, grinder, mixer, etc. Over the years, the demand for consumer durables has kept pace with rising income levels, changing lifestyles, easy availability of credit, increase in the number of nuclear families, and introduction of new models.

The market for luxury products in India is also climbing at an astonishing rate as compared to a decade ago when it was almost negligible. The reason behind this is that the purchasing power of the people of India is rising very steeply. The Indian consumer today is highly aware about the product, price, quality and the options available to him. Today, price is not the only consideration as it was a few years back when prices played a major in purchasing. Marketers are trying hard to capture this ever increasing Indian middle class as they form the bulk of Indian consumers.

II. THE RESEARCH PROBLEM

Each of us is a consumer and consumes different goods and services right from our birth to death. All the business activities revolve around the consumer. Consumers are exploited in many ways. The most important form of exploitation may be look-alikes e.g. Godrej – Gordrej, Philips – Phillips, inferior goods and so on. So, there is need of creating consumer awareness in India. Higher the consumer awareness, lower the exploitation and vice-versa. The degree of consumer awareness determines the satisfaction levels and standard of living of consumers. In order to create consumer awareness and safeguarding their interests, the Government of India has enacted various Acts. In spite of these efforts, consumer awareness is not up to the mark in India. The Indian consumer is a victim of exploitation in the form of substandard goods and services, false guarantee, exorbitant prices and fraudulent tactics. Creation of consumer awareness is a big task in our vast country. Due to some impediments such as, illiteracy, indifferent attitude, ignorance of ISI mark, lengthy legal procedures, etc. the degree of consumer awareness is very low in India.

The present investigation has a good deal of relevance in the present content i.e. globalization of Indian markets, increasing level of income, changing in consumption patterns, etc. It helps to measure the attitude of rural consumers' and also the factors which influenced them to buy the ISI marked white goods.

III. OBJECTIVES OF THE STUDY

The main objectives investigated in this study are –

• To measure the altitude level of rural consumers; and

• To identify the factors which influence the rural consumers towards ISI marked white goods.

IV. METHODOLOGY

Both primary and secondary data have been used for investigation. To achieve the objectives, 500 rural consumers were surveyed from four main rural taluks – Melur, Peraiyur, Usilampatti, and Vadipatti – located in Madurai district of Tamil Nadu State. The non-probability convenience sampling method is being used for selecting the sample rural consumers. The personal interview schedule is used for the investigation.

V. METHOD OF ANALYSIS

The Attitude Scale has been used for analyzing the level of attitude and the Principal Component Analysis (PCA) has been adopted for analyzing the factors influencing the rural consumers. Since 'attitude' is an abstract concept, it cannot be directly measured in quantitative terms. There is no fixed value or score which will help to measure the attitude. But the attitude can be measured indirectly with the help of scaling techniques. The principal investigator has identified 22 components for measuring the attitude. A five-point scale has been devised for measuring the attitude of rural consumers towards the marking on consumer durables with the help of scale developed by Likert.

Expressions such as Strongly Agree, Agree, No Opinion, Disagree and Strongly Disagree have been used for measuring the statements. A score of 5, 4, 3, 2, and 1 is assigned for the expressions. The most favourable attitudes are given the highest score of five and most unfavourable attitude is given the least score of one. The total score of 500 sample respondents is obtained from five point scale by adding the individual scores.

VI. LEVEL OF ATTITUDE OF RURAL CONSUMERS

The level of attitude of rural consumers towards the ISI mark on white goods has been classified into three categories, namely high level, moderate level and low level. For identifying the high, medium, and low level, the Mean and Standard Deviation (S.D.) have been computed. The computed arithmetic mean for 500 rural consumers worked out to 84.99 and the standard deviation is 7.05. The different level of attitude has been calculated as follows:

High Level Attitude=Mean + S.D. = 84.99 + 7.05 = 02.04 = 92

Low Level Attitude=Mean – S.D. = 84.99 – 7.05 = 77.94 = 78

Medium Level Attitude = Scores between Low and High Level

Based on the level of attitude, the sample consumers are classified and presented in Table 1.

TABLE – 1
Level of Attitude of Rural Consumers

Level of Attitude	Number of Respondents	Percentage
High Level	88	17.6
Medium Level	320	64.0
Low Level	92	18.4
Total	500	100.00

Source: Primary data.

It is observed from Table 1 that out of the 500 rural consumers, 88 consumers constituting 17.6 per cent belong to a high level attitude group, 320 consumers representing 64 per cent fall under the medium (or) moderate level attitude group and the remaining 92 consumers which accounts for 18.4 per cent come under the category of low level attitude group.

VII. FACTORS INFLUENCING RURAL CONSUMERS TOWARDS ISI MARKED WHILE GOODS

In the present study, the investigator has identified 22 variables and an attempt has been made to find out the factors which influence the rural consumers towards ISI marked white goods. The principal component method of factor analysis has been employed to study the pattern of mutual interdependence among these variables using Kaiser's Varimax criterion. For analysis,

variables with factor loadings more than or equal to 0.4 have been taken for discussion. All the 22 variables have been selected for discussion. The selected variables have been assigned to a factor on the basis of their factor loadings.

A. Testing for Sampling Adequacy

Before extracting the factors, to test the appropriateness of the factor model, Bartlett's test of Sphericity was used to test the null hypothesis that the variables are inter-correlated in population. The test statistics of Sphericity are based on a chi-square transformation of the determinant of the correlation matrix.

Other useful statistics are the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy. (Marjoic A. Pett., 2003). The small value of the KMO statistic indicates that the correlation between parts of variable cannot be explained by other variables and that factor analysis may not be appropriate. In general, the sampling adequacy value should be greater than 0.5 is desirable.

The correlation matrix was examined carefully and the two tests namely Bartlett's test of Sphericity and Kaiser-Meyer Olkin test was undertaken to test if it was judicious to proceed with factor analysis for investigation. The computed results are given in Table 2.

TABLE – 2
KMO and Bartlett's Test

Measure		Estimated Value
Kaiser-Meyer Olkin Measure of Sampling Adequacy		0.729
Bartlett's Test of Sphericity	(Approx. Chi-square)	3337.191
	Degree of Freedom	231
	Significance	0.000

From Table 2 it has been observed that the Bartlett's test was significant with P = 0.000, being less than 0.05. Sampling adequacy measured using the Kaiser-Mayer Olkin (KMO) of 0.729 was taken as accepted. Thus the factor analysis may be considered an appropriate technique for analyzing the data.

B. Influencing Factors

Factors influencing towards ISI mark results from the balancing and summation of many specific likes and dislikes of rural consumers experienced over a period of time through gaining more and more information about the ISI marked white goods. Factor analysis of the 22 attitudes identified seven influencing factors which are given in Table 3.

TABLE –3
Influencing Factors for Rural Consumers towards ISI Mark on White Goods

S. No.	Factors	Eigen Value	Variance (%)
1.	Affluent	4.007	18.213
2.	Standard	3.205	14.567
3.	Promotional	1.695	7.706
4.	Convenience	1.509	6.857
5.	Social	1.311	5.959
6.	Necessity	1.200	5.456
7.	Longevity	1.093	4.968

The factors are – affluent, standard, promotional, convenience, social, necessity, and longevity. These factors account for about 63.726 per cent of the variance in the data. All of the attitude measures have high communality, indicating that the variables within each factor have very high association among them. The variables constituted in each factor are shown in Table 4.

TABLE – 4

Influencing Factors and the Variables Constituted the Factors

Factor	Variable Name	Factor Loadings
Affluent	Educated people buy ISI marked White Goods only	0.828
	Business people always buy ISI marked White Goods	0.746
	ISI marked White Goods are mostly preferred by High Income Group people	0.721
	Urban people buy ISI marked White Goods only	0.609
	Standards for ISI mark are fixes by the Bureau of Indian Standards	0.566
Standard	ISI denotes quality of symbol	0.849
	ISI mark indicates standardized goods	0.842
	ISI goods is generally quality controlled	0.757
	ISI marked White Goods provide satisfaction	0.422
Promotional	Guarantee is given on ISI marked White Goods	0.784
	ISI marked White Goods adopt superior technology	0.755
	Safety is provided in ISI marked White Goods	0.660
	ISI marked White Goods are purchased unknowingly in most of times	-0.400
Convenience	ISI marked White Goods are purchased due to availability	0.736
	Purchasing of ISI marked White Goods saves shopping time	0.686
	ISI marked White Goods are mostly purchased on recommendation by users	0.645
	ISI marked White Goods are available under one roof	0.503
Social	Normally parents decide in purchasing ISI marked White Goods	0.830
	Women prefer to buy ISI marked White Goods	0.728
Necessity	Rural people buy both ISI marked and non-ISI marked White Goods	0.788
Longevity	Durability is provided in ISI marked White Goods	0.724
	ISI marked White Goods are reasonably priced	0.410

The first factor labelled **"Affluent"** accounts for the most variation (18.21%) consisting of five variables. Eigen value for this factor is 4.007, which indicates that the factor contains very high information than the other factors. The five variables have high commonality indicating that variables within the Factor 1 have a very high association among them. This factor provides the maximum insights to the rural consumers about ISI mark on white goods.

The second factor is narrated as **"Standard"** on the basis of loaded variables. Four variables, viz. ISI denotes the quality of the symbol, ISI mark indicates standardized goods, ISI goods is generally quality controlled, and ISI marked white goods provide satisfaction are loaded with 0.849, 0.842, 0.757, and 0.422 respectively. These four variables have high commonality indicating that variables within the Factor 2 have a very high association among them. The Eigen value and the percentage of variance explained is 3.205 and 14.567 respectively. It explains that the rural consumers like the ISI marked white goods because of the standard. Thus, the 'standard' factor is identified as one of the important factor influencing the rural consumers towards ISI marked white goods.

The third factor which is termed as **"Promotional"** based on variables loaded on it. The four variables, viz. 'Guarantee is given on ISI marked white goods' with 0.784 factor loading with a commonality value of 0.676, 'ISI marked white goods adopt superior technology' with 0.755 factor loading with a commonality value of 0.682, 'safety is provided in ISI marked white goods' with 0.660 factor loadings with a commonality value of 0.627, and 'ISI marked white goods are purchased unknowing in most of times' with negative factor loading on Factor 3 are characterized as 'promotional' factor. The total variance explained by way of Eigen value to this factor is 1.695 and the percentage of variance accounted for 7.706. It indicates that these variables have a very high association among them.

The fourth factor is identified as **"Convenience"** on the basis of loaded variables. The higher factor loading on its variables helps in identifying variables associated with Factor 4. All the variables have high communality, indicating that the variables within this factor have a very high association. The extracted Eigen value is 1.509 and the percentage of variance explained in this factor is 6.857. The convenience is considered as an important factor in influencing the rural consumers while buying the ISI marked white goods.

The fifth factor is designed as **"Social"** on the basis of loaded variables. This factor has been represented by the variables namely, (i) normally parents decide on purchasing ISI marked white goods, and (ii) women prefer to buy ISI marked white goods. The total variance explained by way of Eigen value to this factor is 1.311 and the percentage of variance accounted for 5.959.   All the variables in this factor have been positively loaded. It means that this factor has a positive influence on consumer behaviour towards ISI marked white goods. It also shows that the rural consumers have been influenced mainly because of parents' decision and preference by women.

The sixth factor which is named as **"Necessity"** based on variable loaded on it.   Only one variable i.e. "rural people buy both ISI marked and non-ISI marked white goods" with high factor loadings (0.788) included in this factor. The total variance explained is given in the form of Eigen value. It is 1.200 for the sixth factor. It accounted for 5.456 percentage of variance. Thus, the factor 'necessity' influences the rural consumers to buy white goods depending upon their need.

The seventh factor which is named as **"Longevity"** based on variables loaded on it. This factor has two variables, namely 'durability is provided in ISI marked white goods' and 'ISI marked white goods are reasonably priced'. It has accounted for 4.968 per cent of the total variations. The Eigen value is 1.093. The loadings in this factor are positive nature and the first variable has been highly loaded. Based on the first variable, the factor has been denoted as 'durability'. It is also one of the influencing factors for the rural consumers towards the purchase of ISI marked white goods.

VIII. INFLUENCING FACTORS OF RURAL CONSUMERS

The influencing factors of rural consumers have been measured with the mean score of the factors extracted. The computed mean along with the standard deviation for the various factors are presented in Table 5.

TABLE – 5
Influencing Factors towards ISI Marked White Goods

S. No.	Factors	Mean Score	Standard Deviation
1.	Affluent	3.44	1.12
2.	Standard	4.26	0.70
3.	Promotional	4.18	0.79
4.	Convenience	3.83	0.90
5.	Social	3.50	0.98
6.	Necessity	3.78	1.11
7.	Longevity	3.96	0.93
	Overall	3.86	0.91

It is found from Table 5 that the factor 'standard' (4.26) is the most important factor which influenced the attitude of rural consumers towards ISI marked white goods. It scored a high mean value of 4.26 and low standard deviation of (0.70). The rural consumers perceive that they are influenced by promotional factor (4.18). This indicates a higher level of influence of rural consumers towards ISI marked white goods. Most of the other factors score in a range not vary far from the neutral point on the scale of strongly agree to strongly disagree. Rural consumers are moderately influenced with longevity (3.96), convenience (3.83), necessity (3.78), social (3.50), and affluent (3.44). The overall attitude of rural consumers is found to be moderate by score a mean value of 3.86.

IX. CONCLUSION

The investigation concludes that the influencing factors for ISI mark are significantly related to the overall attitude of rural consumers in Madurai district. Factor analysis grouped the 22 variables into seven factors viz. affluent, standard, promotional, convenience, social, necessity, and longevity. Among these factors, the 'standard' factor is the most important factor which significantly influenced the rural consumers towards ISI marked white goods.

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