

A STUDY ON FACT ANALYSIS ON INFLUENCING OF NON-TRADE CONSUMER**PREFERENCE OF PURCHASING CEMENT**

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ABSTRACT

Cement is one of the core industries which plays a vital role in the growth and expansion of the country economy. Cement is considered preferred building material and is used worldwide for all construction works. The purchasing preference of cement may influenced by many factors. This article explains the variables involved preference of cement by non-trade consumer & classify preferential factors of purchasing cement into various dimensions.

INTROUDUCTION

Cement is one of the core industries which plays a vital role in the growth and expansion of a nation. It is basically a mixture of compounds, consisting mainly of silicates and aluminates of calcium, formed out of calcium oxide, silica, aluminum oxide and iron oxide. The demand for cement depends primarily on the pace of activities in the business, financial, real estate and infrastructure sectors of the economy. Cement is considered preferred building material and is used worldwide for all construction works such as housing and industrial construction, as well as for creation of infrastructures like ports, roads, power plants, etc. Indian cement industry is globally competitive because the industry has witnessed healthy trends such as cost control and continuous technology up gradation. The Indian cement industry is extremely energy intensive and is the third largest user of coal in the country. It is modern and uses latest technology, which is among the best in the world. Also, the industry has tremendous potential for development as limestone of excellent quality is found almost throughout the country.

Statement of the Problem: The purchasing preference of cement by Non-trade customer has involved many factors. These factors are usually classified in to two, namely internal factor and External Factor. However many study has attempt to analyses the factors influencing for purchasing cement for non-trade customer, but not predict the dimension for preferential factors for purchasing cement. This study has focused on dimensions of purchasing preference of cement by non-trade consumer.

Scope of the Study: the consumer of purchasing cement has classified into two. There are Trade consumer and Non-trade consumer. This study has concentrate only on Non-trade consumer. This study is also conducted in four major cities in Tamilnadu. The populations of the study are Architects and Engineers, Industrial Bulk consumer, General consumer,

Review of Literature:

Baradaran Kazemzadeh, R. (2005) believe “Customer satisfaction occurs as a result of customer perception during a trade and the relationship is valued so that the price equals the proportion of the quality of a given service with the customer prices and casts”. [Baradaran Kazemzadeh, R. (2005). Mass parameters to increase of customer satisfaction. Bimonthly official publication of Shahed university, 71-78.] According to Zeithmal (1990) Brand perception i.e Perceived quality of a Brand is the customer’s judgment about a product’s overall excellence or superiority that is different from objective quality (Zeithaml 1988, pp. 3 and 4). Objective quality refers to the technical, measurable and verifiable nature of products/services, processes and quality controls. [Zeithaml, A, Pasuraman, A., Berry, L. (1990). „Delivering Quality Service: Balancing Customer Perceptions and Expectations““. New York: The Free Press Division of Macmillan, Inc.] Jobber, D (2007) states the objective is to identify groups of customers with similar requirements so that they can be served effectively while being of sufficient size for the products or services to be supplied sufficiently. [Jobber, D (2007). “Principles and practice of marketing” .5th edition. Berkshire: McGraw Hill, Chapter 1,3,8.], Kotler (2002) present four major segmentation variables for consumer markets: geographic, Demographic, psychographics and behavioral variables [Philip Kotler, “Marketing Management”, pg 223-25 Edition: 11th ed. Publisher: Prentice Hall, Date published: 2002 ISBN-13: 9780130336293 ISBN: 0130336297]. Market segments must meet the following criteria: Measurable, substantial, Accessible, Differentiable and **Actionable**. Doyle (1998) states that targeting Strategies - Once the organization has identified its market – segments opportunities, it has to decide how many and which ones to target. Market segmentation is a means to end: target marketing.[25]

Objectives of the study: The study has an objective of classifying the variables involved in purchasing cement by Non-trade consumer in to dimensions.

1. To study the present scenario of Cement Industries

2. To study the factor responsible for buying preference of cement for Non-trade consumers.

Sample Design: The present research is descriptive in nature that describes demographic profile and describes the influencing factors of customer preference of cement. The researcher has used both primary and secondary data. Primary data was collected by using Questionnaire and secondary data was collected from books and journals.

Sampling Procedure: Random sampling has been used in this study. Random sampling is used for selection of homogeneous sample for the study. It refers to selecting a sample of study objects on randomly. Thus research study may include study objects and research findings based on random sampling, however cannot be generalized.

Instrument of Research: The research instrument used in this study is a structured questionnaire. Structured questionnaire are those questionnaire in which are definite concrete and predetermined questions relating to the aspect, favor which the researcher collects data. The questions are presented with exactly the same order to all the respondents. The structured questionnaires that were framed and designed consist of close ended, open ended, multiple chose and liker rating questions.

Size of the sample: the survey was descriptive and sample chosen was mainly on the judgments of the researcher with the help and proper consultation of research advisor. In this kind of sampling method, the population elements are based on the judgments of the researcher. 300 Non-trade consumers are involved in the study.

Analysis of Data: After the data collection was over the researcher analyzed the collected data with the help of statistical packages such as SPSS 20 (statistical package for social science). The factor analysis

with principal component has been done in order to classify the influencing variables in to different factors for Non-trade consumer.

Fact analysis of Influencing factor of buying cement of Non-trade consumer (Architects and engineers, Industrial bulk consumer and general consumer): In order to factor determining purchasing cement in the sample study of four area of Tamilnadu, it is important to reduce the parameters so that there is a limited set of parameters that represent the total consideration set. A statistical approach –‘t’ Test and factor analysis has been used for the study. Finally, practical implications concerning the influencing variables have been highlighted. The factor influencing purchasing decision of particular brand of cement by rating them by five point scale and its significant t value are given in table No.1 The significance of the sample is tested through ‘t’ value which shows that all the factors are statistically significant at 0.05 level. This means that the sample size is the true representation of the population (p-value is less than 0.05 in all cases)

Table No.1 One-Sample Test for testing the influencing variables of preferring cement for non-trade consumer

Variable	Mean	SD	df	Mean Difference	T – Statistics	Sig (2-tailed)
I used to purchase a bulk order instead of placing loose orders	3.34	1.153	487	3.340	63.990	.000
I prefer door delivery	3.48	1.053	487	3.480	73.009	.000
I consider the opinion of the engineer while choosing the brand	3.46	1.042	487	3.457	73.266	.000
I prefer best quality at low price	3.36	1.230	487	3.363	60.393	.000
Personality linked ads induce me to select the brand	3.41	.955	487	3.410	78.886	.000
I wait until I get that brand I preferred	3.28	1.197	487	3.277	60.476	.000
I carefully go through the ads before buying cement	3.54	1.060	487	3.541	73.796	.000

I consider the opinion of other consumers while choosing the brand	3.43	1.202	487	3.430	63.043	.000
I consider the widely used cement in that area	3.23	1.280	487	3.227	55.706	.000
I check good condition of the pack at the time of delivery	3.72	1.024	487	3.717	80.166	.000
Personally inspect the cement pack before issue a order for purchase.	3.86	.834	487	3.861	102.292	.000
I wait until the price of the cement falls	3.11	1.278	487	3.115	53.834	.000
I consider the price difference between brands	3.38	1.172	487	3.377	63.668	.000
I consider a brand while purchasing cement	3.64	1.182	487	3.643	68.115	.000

Sources: Primary Data

The explanatory factor analysis is used to identify the factors influencing the purchasing decision of cement among the Architects and engineers, Industrial bulk consumer and general consumer in the four district of Tamilnadu. To test the suitability of the data for factor analysis, the following steps have been taken. The correlation matrices are computed and examined. It reveals that there are enough correlations to go ahead with factor analysis. Anti-image correlations were computed. These showed that partial correlations were low, indicating that true factors existed to the data.

Table No.2 Result of KMO and Bartlett's Test of sampling adequacy.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.715
Bartlett's Test of Sphericity	Approx. Chi-Square	1290.842
	df	91
	Sig.	.000

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) for individual variables is studied from the diagonal of partial correlation matrix (table 2). It is found to be sufficiently high for all variables. The measure can be interpreted with the following guidelines: 0.90 or above, marvelous; 0.80 or above, meritorious; 0.70 or above, middling, 0.60 or above, mediocre; 0.50 or above miserable, and below 0.50, unacceptable. To test the sampling adequacy, Kaiser-Meyer-Olkin Measure of Sampling Adequacy

(MSA) is computed, which is found to be 0.707. it is indicated that the sample is good enough for sampling. The overall significance of correlation matrix is tested with the Bartlett test of Sphericity for unbalancing factors affecting Work-life balance of respondents (approx.. chi-square = 1297.3, which is significant at 0.000) as well as support for the validity of the factor analysis of the data set. Hence, all these standards indicate that the data is suitable for factor analysis. For extracting factors the principal components analysis and latent root criterion, rotation methods, orthogonal rotation with varimax were also applied. As per the latent root criterion, only the factors having latent roots or Eigen values greater than 1 are considered significant, and all the other factors with latent roots less than 1 are considered insignificant and disregarded.

Factors influencing purchasing decision of Cement among the Architects and engineers, Industrial bulk consumer and General consumer:

After the standards indicated that the data are suitable of factor analysis principal components analysis was employed for extracting the data which allowed determining the factor underlying the relationship between a numbers of variables. The total variable explained suggests that it extracts one factor accounts for 63.2247%. Per cent of the variance of the relationship between variable (Table4).

Table No. 3 Total variance Explained – Extraction sums of squared loadings

Total Variance Explained						
Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.439	24.561	24.561	3.439	24.561	24.561
2	1.392	9.945	34.506	1.392	9.945	34.506
3	1.328	9.484	43.989	1.328	9.484	43.989
4	1.139	8.134	52.123	1.139	8.134	52.123
5	1.077	7.690	59.814	1.077	7.690	59.814

Table No.4 Total variance Explained – Rotation sums of squared loadings

Total Variance Explained			
Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.338	16.702	16.702
2	1.751	12.506	29.208
3	1.595	11.395	40.603
4	1.439	10.279	50.882
5	1.250	8.931	59.814

The purpose of the analysis is to obtain a small number of factors which account for most of the variability in the 15 variables. In this case, 5 factors have been extracted, since 5 factors had Eigen values greater than or equal to 1.0. Together they account for 63.2247% of the variability in the original data. Loading on factor can be positive or negative. A negative loading indicates that this variable has an inverse relationship with the rest of the functions. However, comfrey suggested that anything above 0.44 counts be considered salient, with increased loading becoming more vital determining the factor. All the loading in the research are positive.

Rotation is necessary when extraction technique suggests that there is two or more function. The rotation of factors is designed to give an idea of how the factor unlimited extracted differ from each other and to provide a clear picture of which items load on which factors.. The Eigen value five functions were 4.15844, 1.80695, 1.444688, 1.06139 and 1.01005 respectively (table No 4). The percentage of total variance is used as an index to determine how well the total factors solution accounts of r what the variable together represent index for present solution accounts for 63.225 percent of the total variation for influencing factor of preference of cement for among the Architects and engineers, Industrial bulk consumer and general consumer. It is pretty good extraction as it can economies on the number of factors (from fifteen it has reduced to five factors) while the lose was 36.78 percent. Information content for unbalancing factors affecting the nurses work-life balance. The percentage of variance

explained by factors one to five factors affecting the work-life balance are 27.723, 12.046, 9.646, 7.076 and 6.734 respectively (table above). The above table tells as that after five factors are extracted, is retained, the communalities are 0.536039 for variable 1, 0.726331 for variable 2 and so on. It means that 53.6% percentage of the variance of variable 1 is being accounted by the five extracted factors together.

Table No.5**Result of Rotated component matrix explained the factor**

Rotated Component Matrix^a					
	Component				
	1	2	3	4	5
I used to purchase a bulk order instead of placing loose orders	.752	.267	-.073	.180	.034
I prefer door delivery	.721	-.025	.265	.089	.040
I consider the opinion of the engineer while choosing the brand	.646	.078	.170	-.067	-.099
I prefer best quality at low price	.517	.391	.243	.023	-.372
Personality linked ads induce me to select the brand	.318	.713	.012	.011	.084
I wait until I get that brand I preferred	.016	.598	.135	-.051	-.214
I carefully go through the ads before buying cement	.012	.543	.036	.471	.451
I consider the opinion of other consumers while choosing the brand	.080	.067	.820	.022	-.087
I consider the widely used cement in that area	.297	-.025	.655	.046	.069
I check good condition of the pack at the time of delivery	.008	.386	.524	-.010	.107
Personally inspect the cement pack before issue a order for purchase.	.070	.313	.078	-.785	.150
I wait until the price of the cement falls	.249	.309	.167	.733	-.010
I consider the price difference between brands	.345	.108	-.043	.097	-.667
I consider a brand while purchasing cement	.430	.036	.041	-.062	.593

The proportion of variance on any one of the original variables, which is being captured by the extracted factors, is known as communality. Large communalities indicate that a large number of variance has

been accounted for by the factor location. Varimax rotated factor analytic results for factor determining the influencing factor of preference of cement for among the Architects and engineers, Industrial bulk consumer and general consumer is shown in below table.

Chart No.1

SCREE PLOT SHOWS THE EIGEN VALUE OF FACTORS

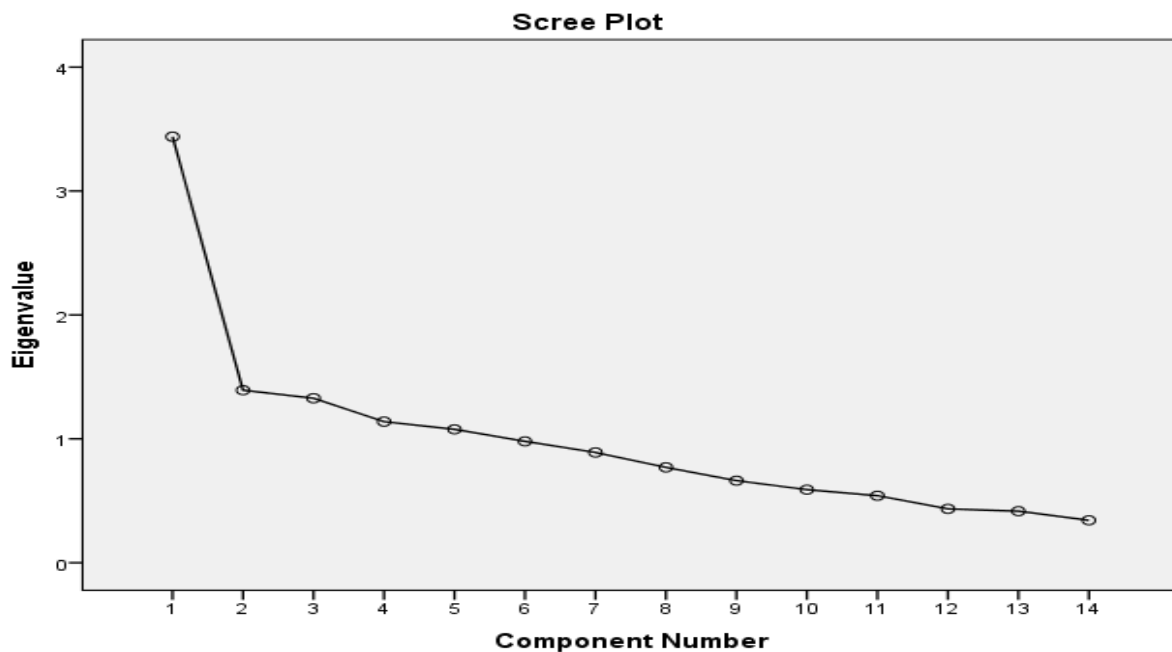


Table No.6

Name of the factors influencing of preference of cement for among the Architects and engineers,
Industrial bulk consumer and general consumer (Non-Trade consumer)

Naming Of Factors	Name of the dimensions	Label Loading	Name of the Unbalancing variables	Factor Loading
F1	External influence	V1	I used to purchase a bulk order instead of placing loose orders	.752
		V2	I prefer door delivery	.721
		V3	I consider the opinion of the engineer while choosing the brand	.646
		V4	I prefer best quality at low price	.517
F2	Reputation	V5	Personality linked ads induce me to select	.713

	factors		the brand	
		V6	I wait until I get that brand I preferred	.598
		V7	I carefully go through the ads before buying cement	.543
F3	Core factors	V8	I consider the opinion of other consumers while choosing the brand	.820
		V9	I consider the widely used cement in that area	.655
		V10	I check good condition of the pack at the time of delivery	.524
F4	Rational factors	V11	Personally inspect the cement pack before issue a order for purchase.	-.785
		V12	I wait until the price of the cement falls	.733
F5	Personal Concern variable	V13	I consider the price difference between brands	-.667
		V14	I consider a brand while purchasing cement	.593

Conclusion: Purchasing cement has involved many external and internal factors. The above study clearly identified that there are five factors are classified and named as External influence, Reputation factors, Core factors, rational factors and personal Concern variables. Based on the classification further analysis has been made to get more clear identification about the Non-trade consumer preference of cement.

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