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Factors Considered by Opinion Leader (One Form of Reference Group) in Recommending Brand to Customers: A Case Study on Cement

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Abstract - This paper explores the role of opinion leader (one form of reference group member) in customer/consumer decision making on cement product purchasing. The study has focused on pertinent literature, quantitative and qualitative studies to assess how opinion leaders make the brand choosing decision and recommend cement brand to customers. Cement is a semi-engineering and high involvement product and therefore customers need to go through an extensive information search process. In such case opinion leader and reference group largely influence the decision making process of customers. This paper is an attempt to investigate the variables that influence the brand choosing decision of the architects- a major opinion leader group in cement industry. The qualitative research reveals some variables (BUET Test, Price, Availability, Delivery of order, Raw material, Goodwill, Initial setting time, Commission and Gift) that are considered when architects make suggestion for choosing the cement brand. Finally, these eight variables have been factorized into four factors namely; *technical aspects, goodwill and brand image, distribution coverage and service aspect and financial aspect* of the cement brand.

I. INTRODUCTION

Studies in consumer behavior reveal that decision making process of the consumers/customers is comprised of a complex set of activities. The decision making process even gets more complex in case of technical product. In such cases, consumers/customers to a large extent depend on the people who are regular users of the product or have sufficient knowledge about the product. These groups of people who influence the decision making and brand choosing process of the customers are commonly referred as reference group. There are remarkable numbers of studies on the influence of reference group on consumer decision process. Unfortunately and of course unintentionally there has been very little focus on how the reference group makes their own brand decision process. More specifically, there is a gap in existing literatures in studying the factors that reference group consider in recommending a specific brand to general consumers/customers.

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This study is an attempt to investigate the factors that opinion leaders (one kind of reference group) consider in recommending brands to customers. Keeping this purpose in mind, the cement industry in Bangladesh has been taken as case in this study and the brand decision process of architects (opinion leader group in this case) has been investigated. The rationales of taking the cement industry as case are two. First, cement is a semi-engineering product and thus influence of opinion leaders on customer decision process is much high. Second, in the competitive cement industry of Bangladesh, marketers are now undertaking different promotional strategies targeting the opinion leaders; architects and masons. Therefore, understanding the decision making process of architects will help the marketers to formulate effective strategies to communicate the reference group.

II. OBJECTIVES OF THE STUDY

The broad objective of this study is to identify and determine factors or variables which influence the engineers, the most influential reference group in cement industry, to prescribe particular brand of cement to customer.

III. MORE SPECIFICALLY

The specific objectives of the study include;

- To investigate the decision making process of architects in recommending cement brands to customers.
- To identify the most prominent factors/variables that determines the particular brand choice.
- To factorize the correlated variables under some dimensions.

IV. LITERATURE REVIEW

From consumer-behavior perspective, it appears that product and brand choosing behavior of consumers/customers can largely be influenced by their reference groups (Bearden and Etzel 1982).

A reference group is defined as "an actual or imaginary individual or group conceived of having significant relevance upon an individual's evaluations, aspirations, or behavior" (Park and Lessig, 1977, p. 102). Bearden and Etzel (1982) defined a reference

group as a person or group of persons that significantly influence the behavior of an individual, and argued that the reference group concept (Hyman 1942) provides a way to comprehend why many individuals do not behave like others in their social group. The persuasive use of spokespeople in product and service endorsements reflects the widely held belief that individuals who are admired or who belong to a group to which other individuals aspire can exercise an influence on information processing, attitude formation, and purchase behavior (Bearden, Netemeyer, and Teel 1989). Consumers frequently rely on word of mouth and referrals and observational learning from other consumers when making a purchase decision (Dichter 1966). In some cases, the referral has a positive impact on their purchase decision, and in other cases, it does not alter their decision.

Reference groups are usually conformed by the social network of an individual: family members, friends and colleagues, and inspirational figures (Bachmann, John, and Rao, 1993), and experts who have an expertise in certain areas. Reference groups have basically two functions (Kelley, 1965): a *normative* function that sets and enforces standards for the individual, and a *comparative* function that serves as a comparison point against which an individual evaluates himself and others (Cocanougher and Bruce, 1971). Park and Lessig (1977) further elaborated the Kelley's (1965) model and described three dimensions of reference groups: informational, utilitarian, and value-expressive. According to Bearden and Etzel (1982), informational influence occurs when, facing uncertainty, an individual searches for information and counts on sources with high credibility or high experience in order to help him make a decision; utilitarian influence occurs when an individual acts according to the desires of others that are important to him in order to obtain a reward or to avoid some punishment; and value-expressive influence is characterized by the individual's acceptance of certain external standpoints given his psychological need to associate with a person or group. Basically only one reason reference influences the purchase decision of the consumer that is power. Different forms of power are used by the reference groups. They are coercive power, social power, referent power, reward power, expert power, information power, legitimate power etc.

Reference group influence on individuals' behavior depends on the nature of individual and product type, means individuals who have little information and few experiences about a particular product seek out advice from the expert or knowledgeable person. Moreover product type and involvement in product purchase also factors for taking perception from reference group.

Buyer decision process consists five stages (Figure1 Appendix), these are, Problem recognition,

Information search, Evaluation of alternatives, Purchase decision, Post purchase behavior. The buying process begins with recognition on the part of an individual or organization that they have a problem or need. After defining the problem buyer have to collect information's about this particular product, and then buyer have to analyze collecting information based on buyer buying characteristics and preference. Analyzing information ultimately conclude with taking purchase decision.

Most of the time problem could be recognized by customer individually, but information collection depends on reference group. When the customer has no prior experience about particular product he has to collect expensive information then they went to the reference group for collecting information, moreover when product purchase in high risk situation consumer likely engaged extensive information collection, where reference group exert themselves. After collecting information customer required to analyze this information. Basically consumer used evoked set in their evaluation process, means known brand by the consumers. If customer have limited knowledge, experience information about particular brand then they are influenced by the reference group members, who have certain experienced about particular product. As well as when products are technical and product perceived risk is high then evaluation process depends on expert's perception and references.

Cement a building material made by grinding calcined limestone and clay to a fine powder, which can be mixed with water and poured to set as a solid mass or used as an ingredient in making mortar or concrete. It is an important building structure material and at this reason house builder face a complexity for purchasing this particular product.

Cement made by some raw material which is so complex that customers never identify which quality is good and which one is bad, moreover buyer has a limited knowledge about product type and its brand. Due to this complexity cement buyer generally depends on experts' such as engineers' recommendation to select the brand of cement to be used.

Cement Manufacturers, facing an increasing competitive marketplace, are finding it difficult to differentiate their cements on the basis of quality, price, promotion or location (Huda, Faruq and Sharmin 2007). Quality, including performance, conformance, reliability, and durability and price are treated as key variable influencing brand selection (Hildebrandt 1988; Mazursky and Jacoby 1986) and customer satisfaction. Additionally, service quality evaluations are critical inputs to the customer decision making process (Dodds, Monroe and Grewal 1991; Zeithml 1988). Thus literature suggests that there are linkages between quality, price, experience and promotion and brand selection.

After analyzing the many literature and expert opinion, we identified several independent variables

which lead engineers to refer particular brand of cement to individual house builders. These variables include: BUET Test, Price, Availability, Delivery of order, Raw material, Goodwill, Initial setting time, Commission and Gift.

V. METHODOLOGY

This study followed mixed approach where both qualitative and quantitative research methods have been used. First, qualitative research technique namely in-depth interview has been conducted to identify the variables that architects consider in choosing cement brands. 6 in-depth interviews were conducted with the primary purpose of identifying the characteristics that are considered by architects as determinants of quality cement. Besides, we attempted to investigate the perception of the architects about various cement brands, identify their preferred brands and investigate the underlying causes behind preferring those brands. A semi-structured questionnaire was used in conducting the in-depth interviews; issues arose out from a given interview were successively used as a basis for further inquiry in subsequent interviews. The architects from govt. institutions, private consultancy firms and real estate companies were selected for the in-depth interviews.

After developing an understanding of the brand-choosing decision process of the architects and identification of the variables, a survey was conducted to measure the relative importance of the identified variables in choosing cement brands. Besides, the correlations among the variables have been investigated and then factor analysis has been performed to reduce the variables into some factors. A structured questionnaire was administered in the survey where the importance of the variables (identified in the qualitative research) was measured on 9 point Likert-scale. In the scale, 'extremely important' was coded as 9 and 'not important at all' as 1. Architects from private consultancy firms, real estate companies and govt. institutions such as Public Works Department (PWD) and Roads and Highways Department.

Making conclusion or generalizing the findings from a survey to the population requires a statistically significant sample size and sound research methodology. There is a wide range of recommendations in the existing literature regarding the optimum sample size required for conducting factor analysis. Everitt (1975) recommended a minimum of 10 subjects per item to obtain an adequate sample size for factor analysis. Gorsuch (1983), on the other hand, recommended five respondents per variables, with a minimum of 100 subjects, regardless of the number of items. Guilford (1954) argued that sample size for factorization should be at least 200, while Cattell (1978) recommended three to six subjects per item, with a minimum of 250. From the qualitative research (in-depth

interviews), we identified eight variables, and therefore, following the recommendations of Everitt and Gorsuch, the sample size determined for this study was 100.

VI. FINDINGS FROM QUALITATIVE RESEARCH

As mentioned in the methodology section, we conducted a number of in-depth interviews with some architects to identify the factors that they consider in recommending cement brands to individual house builders and organizational customers (i.e., real estate companies, builders, contactors, etc.). The in-depth interviews helped us uncover a number of variables. Architects usually consider the technical aspects of the cement when they choose a cement brand. Among the technical aspects initial and final setting time, test result and raw materials of the cement etc. are considered most. However, while asked how they judge whether the cement brand meets the optimum combination of the raw materials or will set in the desired time, almost all of the respondents mentioned that they rely on the BUET certification. For instance, Mr habibur Rahman (Project Engineer in Asset Development) said "Brand that satisfy PSI (one of the format of testing of the cement followed in BUET test) according to the design criteria, ensure initial & final setting time is considered as a good cement". Md. Ziaul Hoque (Sub divisional Engineer in Public Work Development) mentioned availability of cement, presence of adequate level of clinker and other materials, and quick delivery as the major factors that he consider in recommending cement brand in a construction work. Mr Ashique Kadir (Assistant Engineer in Public Worker Development) brought up some variables which are considered as the determinants of quality cement and the variables include; consistent result in laboratory test, ratio of raw material and initial and final setting time of the cement. However, the architects from the real estate companies and private consulting firms especially pointed out the availability, quick delivery, price and laboratory test result as the important variables considered in choosing cement brand. Providing gifts and commission to architects is a well known promotional strategy of cement companies in Bangladesh. Though the gifts and commissions from cement companies influence the architects in recalling and recommending the brands of those cement companies, architects denied to put much importance on this issue as a determinants of recommending cement brands. However, almost all of the architects acknowledged that they received gift items from different cement companies on several occasions.

Based on the in-depth interviews, we identified the following variables that architects consider in choosing or recommending a specific cement brand:

- Availability
- Price

- Initial setting
- Test Result
- Delivery
- Goodwill of brand
- Raw Material, and
- Gift & Commission

In the next section, it has been attempted to empirically test whether there is high correlation among the above mentioned variables and if found, the highly correlated variables will be factorized to identify some factors which can subsequently be used in future research.

a) Factor Analysis as a Research Technique

Factor analysis is the name given to a group of statistical techniques that can be used to analyze interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors) (Hair, Anderson, Tatham, & Black, 1998). This analysis is usually conducted to reduce the number of attributes or variables used in the research. As in our research, eight independent variables were used; thus, through factor analysis, the eight attributes have been reduced to some factors. Each factor includes only those attributes, which are correlated with each other. But the factors

extracted are not correlated with each other. The hypothesis used in factor analyses is that each variables or attributes are perfectly correlated with it but has no correlation with other variables. If this hypothesis is not accepted, factor analysis can be possible.

For conducting factor analysis there are several methods which include: *principle component analysis, common factor analysis, unweighted least squares, generalized least square, maximum likelihood, alpha method and image factoring*. In this paper, to conduct the factor analysis, we have used principle component analysis because a primary concern of this approach is to determine the minimum number of factors that will account for maximum variance in the data for use in subsequent multivariate analysis (K. Malhotra, Naresh 2008). Where other methods are complex and are not recommended for inexperienced users.

VII. FACTOR ANALYSIS OF THE DATA

As the first step, in order to establish an appropriateness of the factor analysis application, Kaiser-Meyer-Olkin sampling adequacy test and Barlett's test of sphericity were performed. Table 1 reports the results of these tests.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.610
Bartlett's Test of Sphericity	Approx. Chi-Square	43.28
	Df	28
	Sig.	.033

Table 1 : KMO and Barlett's Tests

The KMO sampling adequacy test statistic is 0.610, which is higher than the threshold value of 0.5 (Hair, Anderson, Tatham, & Black, 1998). The Barlett's test of sphericity statistic is 43.28. This indicates that the null hypothesis that the correlation matrix is an identity-matrix is rejected at the 0.05 level of significance. Thus, these results support the appropriateness of the factor analysis use for the purposes of this study.

Table 2 reports communalities for selected items. Communality indicates how much of the variance in the selected items has been accounted for by the extracted components. For example, 81.7 percent of variance in the "Availability" item is accounted by the extracted factor(s) while the percent of variance accounted by the extracted factor(s) in the "Price" item is 82.5.

Items	Communalities
Availability	.817
Price	.825
Initial setting	.721
Test Result	.728
Delivery	.801
Goodwill of brand	.705
Raw Material	.610
Gift & Commission	.911

Table 2 : Communality

Table 3 reports initial eigenvalues of the components. According to the latent root criterion (Cattell, 1966), a component with eigenvalue greater than one should be considered for further analysis. The factor analysis in this study identified four (4) components which had eigenvalues greater than the benchmark value. These four components cumulatively explain 76.47percent of total variance.

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.28	28.50	28.50
2	1.63	20.46	48.96
3	1.18	14.80	63.77
4	1.01	12.70	76.47
5	.67	8.40	84.87
6	.49	6.18	91.06
7	.42	5.36	96.43
8	.28	3.56	100.00

Table 3 : Total Variance Explained

Next, Table 4 reveals the result of the rotated component matrix. The main purpose of the rotation is to reduce the number of the components on which the items have a higher factor loading. This is expected to reduce the number of variables and produce a clear structure for the interpretation of results.

	Component			
	1	2	3	4
Availability	-.02	.01	.89	-.13
Price	-.49	.13	.12	-.74
Initial setting	.64	.15	-.48	-.25
Test Result	.77	.22	.27	-.07
Delivery	-.05	-.10	.88	.08
Goodwill of brand	.29	.74	.27	.07
Raw Material	.73	.24	.36	.28
Gift & Commission	-.03	.18	.01	.94
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

Table 4 : Rotated Component Matrix^a

Experts' perception about Raw materials of the cement has 0.73 loading on the factor 1 which means that this attribute is highly correlated with the factor 1. The Initial setting time is highly correlated with the same factor having the coefficient of 0.64 and test result of the cement in BUET test is 0.77 which also is highly correlated with the factor 1. Goodwill of brand is highly correlated with the factor 2 having the factor loading of 0.73. Availability and Delivery of the cement are correlated with the factor 3 with the relative coefficients of 0.89, and 0.88 respectively. The remaining two Price and Gift & Commission setting by the company are highly associated with the factor 4 with the coefficients of 0.74 and 0.94 respectively.

The identified factors and their associated variables are presented in the following table.

Factor	Attributes	Factor Name
Factor 1	Initial setting time, Test Result and Raw Material	Technical aspect of the product
Factor 2	Goodwill of brand	Goodwill and brand image
Factor 3	Availability, Delivery	Distribution coverage and services
Factor 4	Price, Gift & Commission	Financial aspect of the product

The findings of the factor analysis helped us identify four factors namely; technical aspects, goodwill and brand image, distribution coverage and service aspect and financial aspect of the cement brand. Under the *technical aspect*, the architects mainly consider the initial setting time, laboratory test result, and raw materials. Therefore, a cement brand with optimum setting time, consistent good laboratory result, and necessary raw materials is expected to be recommended by architects to the customers. *Goodwill or brand image* of cement brand is another factor which is considered in choosing a cement brand. The third factor has been named out by *distribution coverage and service aspect of the cement* and this factor includes availability and timely delivery of the cement. *Financial aspect of the cement*, the fourth factor, includes the price of the brand and the gift and commission provided by the cement companies.

VIII. RESEARCH IMPLICATIONS

Cement is a technical and semi-engineering product. Customers (individual house builders and organizational buyers), because of their lack of product knowledge, largely depends on architects who can be termed as opinion leaders in this case. In this paper it has been attempted to investigate the decision making process of the architects and identify the factors that they consider in recommending cement brands to customers. Though there have been numerous studies on the influence of reference group or opinion leaders on customers' purchase decisions, study on the factors

that the opinion leaders consider in recommending specific cement brands to their customers is missing. This study is an attempt to fill this research gap. However, the factors identified in this study can subsequently be used in future researches to identify the relative importance of the factors as determinants of architects' recommending specific cement brand to customers.

IX. CONCLUSION

Customer/consumer decision making depends on their product knowledge. If they have deficient knowledge then reference group plays significant role for assisting customer/consumer taking final decision. The study focuses on how engineers (one form of reference group member) suggest the customer/consumer for choosing cement product. Fundamentally, architects value some factors in choosing and recommending cement brand, which include technical aspects of the product, brand image, distribution coverage and financial aspect of the company. Findings of this paper will be of use to managers, to look at how reference group take their decision, what factors they consider in recommending a cement brand.

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