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Determining Varying Usage of Sources of Information among Different Involvement Groups

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ABSTRACT:
This study tries to investigate the difference in usage of sources of information by the consumers for FMCG products when they are segregated into homogeneous groups. Mean value is calculated for each group which is ranked to identify the source of information more often used by each group. Further on, the one-way ANOVA (F-test) is performed on score values provided by the respondents to find out the varying usage of sources of information among the three groups of respondents segmented on the basis of involvement (low, medium and high). Finally, correspondence analysis is used to produce a two dimensional graphical plot of the observed data variation. This analysis shows that there is difference in usage of sources of information by different involvement groups. The results of the study could go a long way in rationalising the communication spending of the companies.

Keywords: *Information sources, Consumers, Correspondence analysis, ANOVA, Segmenting*

INTRODUCTION

Information search as defined by Haines (1978) means data that induces the consumer to construct or alter an existing decision process for the relevant product, including raw data, encoded symbols, and any other data capable of representing reality to the decision-maker. It is a conscious goal-oriented behavior whereby consumers acquire information to clarify or evaluate a particular brand or product class. Bei and Widdows (1999) argue that in a world of imperfect information, consumers always seek more information as long as the expected pay off from the another search exceeds its marginal cost. The implication is that more information would result in a "smarter" purchase. Thus, consumers undertake information search to be confident about the purchase.

Companies use various sources of information to create awareness among the consumers about the product. On the other hand, a consumer may discuss the options with friends or relatives or neighbours while deciding the brand of a product to buy. She can read the newspaper advertisements, collect and evaluate information from manufacturer's pamphlets or enquire on websites. She may enquire at different stores and ask shopkeepers advice for updates on the latest information. She may also use mass media advertisements. Further, she may read magazines that run articles on various

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product categories. These sources of information provide consumers with ample opportunities to gather market intelligence on the product to be purchased.

A review of literature made in next section will reveal that past studies show that a large variety of information sources are used by consumers to add on their information and further this information search behavior is affected by numerous determinants of information search.

Literature Review

A review of information sources used by consumers reveals that they collect information from a large number of sources like advertisements in television /radio/ magazines/ newspapers as depicted by Claxton et al., (1974); Duncan and Olshavsky (1982); Avery (1996); Moorthy et al., (1997); and Mishra et al., (1999). These studies also support the use of friends and family as a source of information. Claxton et al., (1974); Moorthy et al., (1997); and Mishra et al., (1999) find that salesperson/retailer's advice is also considered while making buying decisions. Manufacturer's brochures and pamphlets is another source of information as depicted by Moorthy et al., (1997). Mishra et al., (1999) suggest that consumers always give a thought to their past experience while taking a new purchase decision (Saigal et al., 2010).

Each source of information used by the company to communicate with the consumer carries cost for the company. This can make the company non-competitive if the information sources are not utilised judiciously. Thus it is essential for the company to understand the information search behavior of its consumers. However a particular source of information used by one group of consumer might not be used by another group. Schmidt and Spreng (1996) content that understanding the information search behavior of the consumers is useful for marketing managers in designing effective communication campaigns. Thus segmenting the consumers into homogeneous groups would be beneficial for the organisations. Slama and Tashchain (1985) also suggest that understanding information search behavior of different segments of consumers is of great relevance for marketers to frame appropriate marketing strategy for each homogeneous segment.

Further on, information search process of the consumers is influenced by various drivers of information search behavior. Claxton et al., (1974); Anderson et al., (1979); Moore and Lehman (1980); Johnson and Russo (1984); Beatty and Smith (1987); Srinivasan and Ratchford (1991); Ratchford and Srinivasan (1993) determine the relationship of product class knowledge with information search behavior. Also product class involvement influences the information search process (Beatty and Smith, 1987; Lee et al., 1999; Lin and Chen, 2006). Duncan and Olshavsky (1982); Srinivasan and Ratchford (1991); and Ratchford (1982) depict that benefits of information search affect the information search behavior. Newman and Staelin (1972) and Kiel and Layton (1981) explore the relationship of satisfaction and information search behavior.

Thus, it is clear from the above discussion that various sources of information are used by the consumer to enhance her information search and further information search behavior is influenced by various determinants of information search. In this study, the most influencing determinant of information search behavior is first identified and is further used to segment the consumers into various groups so as to determine the varying usage of sources of information among the segmented groups. Park and Kim (2010) confer that there are various basis of segmentation like demographics, geographies, personality, etc. After a thorough analysis of various variables like demographics, geographies, personality, information search determinants, Park and Kim (2010) find that product class involvement is an important determinant of information search which influences the information search behavior of the consumers. Thus, in order to segment the consumers, Park and Kim (2010) used a particular determinant of information search which most influences the information search behavior. The present study also uses a similar approach to identify the basis of segmenting the respondents. However this study is different from the study of Park and Kim (2010). The study of Park and Kim (2010) is conducted in USA to explore the information search behavior of college students while planning their spring break trip whereas the area of this study is confined to the boundaries of India to determine

the behavior of consumers while buying FMCG products. Further on, the basis purpose of Park and Kim (2010) study is to determine the perceived usefulness of every information channel. On the other side, this study determines the difference in usage of various sources of information search.

In the present study, first the most influencing determinant of information search is identified for the purchase of FMCG products. Further on, the study tries to investigate the difference in usage of sources of information by the consumers for FMCG products when they are segregated into homogeneous groups on the basis of the most important determinant of information search. This type of segmentation would go a long way in rationalising the communication spending of the companies.

RESEARCH METHOD

In order to examine the information search behavior of the consumers, data is collected through survey method. Respondents from the state of Punjab were approached through a field survey during the period of October 2011 to March 2012.

The products selected belong to the fast moving consumer goods (FMCG) category. The two products from the FMCG category selected were toothpaste and packaged tea (P = 2). A sample of 414 respondents is selected on the basis of judgement cum convenience sampling. As far as possible, the respondents were approached in the market place outside the major shopping centres of the four cities of the state of Punjab. They were requested to participate in the 'not for profit' survey. If they agreed, they were asked to fill the questionnaire. Due care was taken to give appropriate representation to gender and age. Biased and incomplete questionnaires have been removed from the study. Finally, 383 questionnaires have been used in the analysis.

Each respondent was asked to complete the questionnaire for the two product categories resulting in 766 observations (383x2). A similar methodology has been used by Holbrook and Batra (1987); Olney *et al*., (1991); Smith and Park (1992).

Out of the total respondents, 43% were male and 57% were females. The percentage of married respondents was 46% and unmarried was 54%. About 30% and 26% of the respondents were of 18-24 years and 25-30 years of age group respectively, 24% belong to 31-35 years of age group whereas 12% were between 31-35 years of age. Five percent of respondents were of 36-40 years and 2% of respondents were between 41-45 years of age. Rest 1% of respondents were of 45 years and above. Only 8% of the respondents were under graduate, 44% were graduate and 48% were postgraduate and professionally qualified. Out of total respondents, 28% were self employed (businessman and professionals), 15% were student, 17% were housewives, 35% were salaried person and 5% were retired personnel. Ten percent of the respondents were earning up to Rs.15000/-, 34% were having Rs.15001/-Rs.25000/-, 35% were in Rs.25001/-Rs.35000/- income group and 21% were earning above Rs.35001/-.

Measures of Variables

The variables used in the study to explore the relationship of various determinants of information with the amount of information search are discussed as under.

Dependent variable (Amount of information search)

Amount of information search refers to the total information collected by the consumers from different sources of information while buying a product. In this study, the scale suggested by Moorthy *et al*., (1997) for measuring the amount of information search has been used. The amount of information search is taken as simply the summation of information obtained from various sources of information that is, past experience; friends and family's advice; TV advertisements; point of purchase advertisement; newspaper and magazine advertisements; window shopping through store visits; manufacturer's pamphlets inserted in newspapers; salesperson and shopkeeper's advice; advertisement in public transport; roadside bill boards/hoardings; radio advertisements; and cinema advertisements. It is measured on a seven-point scale, ranging from 'hardly anything' to 'quite a bit' in response to the question 'Did you get any relevant information about FMCG from (above mentioned sources of information)'. These seven-point Likert scale are converted into the

values of 7, 6, 5, 4, 3, 2 and 1 respectively for the purpose of analysis.

Independent Variables

Four independent variable constructs, namely product class knowledge, product class involvement, benefits of information search and satisfaction, are used in this study to explore their relationship with the amount of information search. The scales used to measure these variables along with their source are listed in Appendix 1. Each statement was rated on a seven-point scale ranging from "very strongly agree" to "very strongly disagree". The reliability and validity of the scale items is evaluated as under:

Reliability

To check the internal consistency of items, coefficient alpha is calculated. According to Nunnally (1978), the value of 0.7 or above is taken as acceptable measure. As shown in Table 1, only those scale items are taken as an acceptable measure whose value ranges from 0.71 to 0.96, which indicates a good consistency amongst the items. First item of product class involvement is deleted from further analysis because its inclusion leads to lower coefficient alpha. The remaining items are considered for further analysis. The value of coefficient alpha of the various scale items are shown in table 1.

Exploratory Factor Analysis (EFA)

Exploratory factor analysis (Malhotra, 2004 and Nargundker, 2003) is carried out using SPSS 18.0 to assess the underlying factor structure of all scale items. The total variance explained is 85%. This percentage of variance is acceptable since the satisfactory percentage of variance explained in social sciences is 60% (Hair et al., 2005). The resultant factors are product class involvement, product class knowledge, benefits of information search and satisfaction. Factor loadings are shown in table 1. All items are taken for further analysis, as no item is having factor loading below the acceptable range.

Further exploratory factor analysis is carried out to check the appropriateness of factor analysis through Kaiser-Meyer-Olkin (KMO) statistic. The value of KMO is considered significant if it is greater than 0.6 (Seth *et al.*, 2008). The values of KMO and Barlett's test of sphericity are also depicted in table 1.

Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis is a theory-testing model as opposed to exploratory factor analysis, which is theory-generating method. In confirmatory factor analysis, the researcher begins with a hypothesis prior to the analysis. This model, or hypothesis, specifies which variables will be correlated with which factors. The hypothesis is based on a strong theoretical and/or empirical foundation (Stevens, 1996). Confirmatory factor analysis is acceptable if the value of CFI (comparative fit index) is 0.90 or above (Seth, *et al.*, 2008). The value of CFI for various constructs is shown in Table 1. The accepted value of CFI shows that data fits in a hypothesised measurement model.

Validity

Validity of scale items is checked through content validity, construct validity, convergent validity and discriminant validity. This study uses Amos 16.0 to observe the validity of items.

Content Validity

Content validity means each item of the scale deals effectively with the content of the construct that is measured (Odin *et al.*, 2001). In this study, content validity is ensured as the underlying dimensions are taken from literature and thoroughly reviewed by experts and academicians.

Construct Validity

Construct validity means proving that a construct is actually measuring what it is supposed to do. According to O'Leary–Kelly and Vokurka (1998), construct validity measures the degree to which a construct actually measures its besieged value. The value of comparative fit index (CFI) shows how closely an individual item pertains to the same dimension. If the value of CFI is equal to or above 0.90, the dimension is said to have construct validity. Values of CFI displayed in table 1 show the presence of construct validity.

Table 1: Reliability and validity of scale items

Items	Coefficient alpha	Factor 1 (product class knowledge)	Factor 2 (product class involvement)	Factor 3 (benefits of information search)	Factor 4 (satisfaction)
In general, I am quite capable when it comes to distinguishing good brand from bad one of FMCG.	0.72	0.911			
I am a good judge when I have to evaluate brands of FMCG.		0.988			
Generally speaking, I am a knowledgeable shopper.		0.976			
I always wanted to know more about FMCG and enjoy it when people teach me about them.	0.77		0.976		
FMCG is important as well as essential*.			(already deleted)		
I am interested in reading information about what FMCG is made of.			0.952		
I am interested in reading the consumer reports articles about FMCG.			0.788		
I have interest in FMCG and I am fascinated with it.			0.838		
It pays to shop around before buying FMCG.	0.85			0.769	
By searching more information, I am certain of making the best buy.				0.655	
I learned which brand of FMCG is suitable for me by shopping around.				0.778	
I got exactly what I wanted by searching enough before I bought FMCG.				0.812	
Shopping around at various shops helped me to find the lowest price when I bought FMCG.				0.747	
This brand of FMCG has exceeded my expectations.	0.89				0.735
The brand is among the best I could ever buy.					0.821
The brand is exactly what I needed.					0.871
My choice to buy this brand was wise one.					0.956
I am satisfied with my decision for this brand.					0.765
I am sure that it was right to buy this brand.					0.923
Using this brand has been a good experience.					0.767
I have been delighted with this brand.					0.823
% of Variance		19	23	21	22
KMO		0.823	0.774	0.804	0.713
Barlett's test of sphericity		562.016 (522.081)	509.503 (516.523)	604.102 (601.109)	564.284 (628.014)
CFI		0.908	0.918	0.911	0.910
NFI		0.966	0.981	0.901	0.912

Note: * is already deleted because of the less value of coefficient alpha.

Convergent Validity

Convergent validity refers to the degree to which multiple methods of measuring a variable provide the same results (O'Leary –Kelly and Vokurka , 1998). A dimension is said to have convergent validity if the value of NFI is above .90 or equal. In the present analysis, as shown in Table 1, the values of NFI are above 0.90 or equal which indicates the presence of convergent validity (Bentler-Bonett, 1980).

Discriminant Validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs. Thus, high discriminant validity provides evidence that a construct is unique and captures some phenomena that other measures do not (Hair *et al., 2005*). To examine the discriminant validity, correlations between factor scores for each construct are calculated and then these are compared with the variance extracted from each factor. If the variance extracted is greater than inter-construct squared correlation, then the analysis shows the presence of discriminant validity. Table 2 shows all variance extracted are greater than inter-construct squared correlation, thus indicating high discriminant validity amongst the constructs.

Method

Multiple regression analysis is used to analyse the relationship between single dependent variable (amount of information search) and several independent variables. Factor scores of four factors extracted from factor analysis that is, product class knowledge, product class involvement, benefits of information search and satisfaction are used as independent variables of the study.

For the purpose of analysis, a regression equation is estimated through ordinary least square (OLS). The relationship between Y (dependent variable) and Xs (independent variables) is specified as under:

$Y = \alpha + ß_{\text{product class knowledge}} X_{\text{product class knowledge}} + ß_{\text{product class involvement}} X_{\text{product class involvement}} + ß_{\text{benefits of information search}} X_{\text{benefits of information search}} + ß_{\text{satisfaction}} X_{\text{satisfaction}} + \mu_{ij}$ Equation: 5.1

Equation: 1

Where Y refers to amount of information search made; α is constant; ß's are the vector of coefficients of X's. μ_{ij} refers to the error term which reflects a number of different aspects that cannot be observed by a researcher such as measurement errors, omitted variables, etc. All the above stated variables are with regard to specific individual i for the brand j that he/she has chosen presently.

With the help of above mentioned equation, the most important determinant influencing the information search is identified through regression analysis by using E-Views 7.2. After determining the most important determinant, the consumers are segmented into three groups (low, medium and high) on the basis of Z-score of the most important determinant influencing the information search. Z-score of the most important determinant influencing the information search is calculated by combining all the sub-items of that construct. Manually Z-score is calculated with the help of the following formula:

$Z = X-\mu/\sigma$ Equation: 2

Where X represents score value mentioned by every respondent for the most important determinant influencing the information search, μ represents mean of the most important determinant influencing the information search, σ represents standard deviation of the most important determinant influencing the information search.

Table 2: Construct correlation matrix

Construct	Product class knowledge	Product class involvement	Benefits of information search	Satisfaction
Product class knowledge	1	0.35	0.66	0.39
Product class involvement	-0.59	1	0.36	0.31
Benefits of information search	0.81	0.64	1	0.29
Satisfaction	-0.68	0.57	-0.59	1
Variance extracted	8.18	7.86	8.12	6.19

Note: Values above the diagonal represents the squared correlations

After calculating the Z-score, frequency distribution of Z-score is calculated. As per frequency distribution, Z-score of total 766 respondents is divided into three groups, each representing 33.3% of the total. Thus, the three groups are low (n=255), medium (n=255), high (n=256).

Further, score value provided by the respondents to various sources of information is totalled and then mean is calculated. This is done for each group, as mentioned above that is, low, medium and high. After calculating means, mean values are then ranked so as to identify the source of information more often used by each group. Further on, the one-way ANOVA (F-test) (through SPSS 18.0) is performed on the score values provided by the respondents to the various sources of information in order to examine whether there is any difference in usage of various sources of information among the three groups as this is done for each group of most important determinant influencing information search.

Further on, correspondence analysis is used to produce a two dimensional graphical plot of the observed data variation which can be examined for behavioral overlap between the variables. It uses only selected portions of the data to enter into the analysis and the subsequent algorithmic activity. In this study, correspondence analysis is used to understand the relationship between usage of sources of information and segmented groups by using SAS 9.31.

Hypotheses Formulation

The hypotheses with regard to above mentioned variables are set as under:

Product Class Knowledge- Product class knowledge translates as what the consumer knows about the product category and how they rank themselves on knowledge parameters. Brucks (1985) states that product knowledge is based on the already known knowledge of the consumer about the product.

Previous studies like Claxton *et al*., (1974), Anderson et al., (1979), Moore and Lehman (1980), Ratchford (1982), Johnson and Russo (1984), Beatty and Smith (1987), Srinivasan and Ratchford (1991) and Ratchford and Srinivasan (1993) have shown that product class knowledge is inversely related to the extent of information search, which means that as consumer becomes more knowledgeable, she tends to search less for information related to the product which she is going to buy. The present study also projects the same hypothesis and hence H_1 is framed as under:

H_1: Product class knowledge and amount of information search have negative relationship.

Product Class Involvement- Involvement can be described as a person's perceived relevance of the object based on inherent needs, values and interests. Dholakia (2001) explains product involvement as an internal state variable that indicates the amount of arousal, interest or drive evoked by a product class.

Beatty and Smith (1987), Avery (1996), Moorthy et al., (1997), Lee et al., (1999), Dholakia (2001) and Lin and Chen (2006) contend that those consumers who search for more information show higher degree of product class involvement. Thus a positive relation between product class involvement and amount of search is assumed and the following hypothesis is framed:

H_2: Product class involvement and amount of information search have positive relationship.

Benefits of information search- Punj and Staelin (1983) suggest that usually people make information search in order to obtain tangible consumer benefits, such as more value for their money and overall satisfaction with the product. Ratchford (1982), Duncan and Olshavsky (1982), Punj and Staelin (1983), Srinivasan and Ratchford (1991) and Avery (1996) depict positive relation between the benefits of information search and the extent of information search. Thus in this analysis, a positive hypothesis for the above stated variable has been set:

H_3: Benefits of information search and amount of information search have positive relationship.

Satisfaction- Satisfaction is post choice evaluation of a specific transaction (Selnes, 1993).

Bennett and Mandell (1969), Newman and Staelin (1972) and Kiel and Layton (1981) suggest that satisfaction with the purchase reduces the need for information search. Punj and Staelin (1983) also find that a satisfactory experience with the previous product limits the perceived need for further information. Thus the following hypothesis has been set to depict the

relationship between satisfaction and information search:

H_4: Satisfaction and amount of information search have negative relationship.

Further, the following hypothesis has been set to examine the varying usage of sources of information among the three groups identified on the basis of Z score of most influencing determinant of information search.

H_5: There is a difference in the usage of TV advertisements among three groups of respondents low, medium as well as high.

H_6: There is a difference in the usage of radio advertisements among three groups of respondents low, medium as well as high.

H_7: There is a difference in the usage of newspaper and magazine advertisements among three groups of respondents low, medium as well as high.

H_8: There is a difference in the usage of past experience among three groups of respondents low, medium as well as high.

H_9: There is a difference in the usage of manufacturer's pamphlets inserted in newspapers among three groups of respondents low, medium as well as high.

H_{10}: There is a difference in the usage of salesperson and shopkeeper's advice among three groups of respondents low, medium as well as high.

H_{11}: There is a difference in the usage of friends and family advice among three groups of respondents low, medium as well as high.

H_{12}: There is a difference in the usage of window shopping through store visits among three groups of respondents low, medium as well as high.

H_{13}: There is a difference in the usage of point of purchase advertisement among three groups of respondents low, medium as well as high.

H_{14}: There is a difference in the usage of advertisement in public transports i.e. buses, railways among three groups of respondents low, medium as well as high.

H_{15}: There is a difference in the usage of cinema advertisements among three groups of respondents low, medium as well as high.

H_{16}: There is a difference in the usage of road side bill boards/hoardings among three groups of respondents low, medium as well as high.

Data Analysis

Factor scores of multi-scale items (product class knowledge, product class involvement, benefits of information search and satisfaction) are analysed through E-Views 7.2 along with the amount of information search as dependent variable to test the model specified in Equation 1. Results of regression analysis are presented in table 3.

As shown in table 3, the value of R^2 is 0.695. The higher the value of R^2, greater is the percentage of variation of dependent variable explained by the regression model, that is, better is the goodness of fit (Gujarati, 2004). The above model explains 69% of total variation in dependent variable. All the above stated variables are also found to be significant and have signs as expected. Thus hypothesis H_1, H_2, H_3 and H4 are accepted.

Table 3: Regression results establishing relationship between determinants of information search and amount of information search

Variable	Expected Signs	Coefficient (T-ratio)
Constant		69.82 (9.32)*
Product class knowledge	-	-1.87 (-2.77)***
Product class involvement	+	6.12 (4.79)*
Benefits of information search	+	2.12 (7.65)*
Satisfaction	-	-2.16 (-3.11)*
R^2		0.695

In the above examination, product class involvement is found to be the most influencing determinant of information search behavior with the highest coefficient value (6.12). Thus varying usage of information sources is determined by segmenting the consumers on the basis of their involvement with the product. Z-score of product class involvement (PCI) is calculated by combining the four items of this construct and is used for segmenting the consumers.

After calculating the Z-score, frequency distribution of Z-score is calculated. As per frequency distribution score, Z-score for 766 observations is divided into three groups, each representing 33.3% of the total. Thus, the three groups are low (n=255), medium (n=255), high (n=256).

Further on, mean value of score value stated by the respondents to each source of information is calculated for each group of product class involvement. These mean values are then ranked to identify the source of information widely used by each group. Further, one-way ANOVA (F-test) is applied on score values of sources of information for each group of product class involvement to identify varying usage of information sources.

Results of One-way ANOVA (F-Test)

To find out the varying usage of sources of information among the three groups of respondents segmented on the basis of involvement (low, medium and high) one-way ANOVA (F-test) is run on score values of all sources of information (table 4).

Table 4: Results of one-way ANOVA (F-test) on the basis of involvement (low, medium and high)

Sources of Information	Low		Medium		High		F	Acceptance/rejection of Hypothesis
	Mean value	Rank	Mean value	Rank	Mean value	Rank		
TV advertisements	5.84	1	5.98	1	5.89	1	0.713	Rejected
Radio advertisements	3.98	12	3.52	10	3.93	12	2.98***	Accepted
Newspaper, Magazine advertisements	4.74	6	4.54	7	4.73	7	0.744	Rejected
Past experience	5.57	2	5.64	5	5.41	2	2.87***	Rejected
Manufacturer's pamphlets inserted in newspapers	4.77	5	4.16	8	4.76	6	7.691*	Accepted
Salesperson and Shopkeeper's advice	4.43	8	4.67	4	4.49	8	0.930	Rejected
Friends and Family advice	5.23	4	5.22	2	5.19	3	0.032	Rejected
Window shopping through store visits	4.74	6	4.59	6	4.79	5	0.485	Rejected
Manufacturer's websites	4.37	9	3.76	10	4.35	9	5.687*	Accepted
Point of purchase advertisement	5.33	3	4.90	3	5.09	4	2.989***	Accepted
Advertisement in public transports i.e. buses, railways	4.23	9	3.30	12	4.07	10	10.919*	Accepted
Cinema advertisements	4.13	11	3.46	11	3.97	11	6.052*	Accepted
Road side bill boards/hoardings	4.15	10	4.06	9	4.16	9	0.157	Rejected

Note: * means highly significant, ** significant at 1%, *** means significant at 5%.

Results reveal that TV advertisement is the main source of information for all the three groups of respondents segmented on the basis of involvement, low, medium as well as high. It is ranked as 1 in all the three groups. H_5 is rejected (F value is not significant, .713) because there is no significant difference in usage of TV advertisement by the three groups of respondents segmented on the basis of involvement.

Further, an analysis of radio advertisement gives an indication that it is not a widely used source of information. Low involved consumers and high involved consumers rank it as twelfth in terms of source of information whereas medium involved consumers rank it as tenth. F-value (2.98) indicate that there is a significant difference in usage of radio advertisement by the three groups of respondents segmented on the basis of involvement, low medium as well as high while buying FMCG. Thus H_6 is accepted.

Newspaper and magazine advertisements have been allotted sixth rank by low involved group and seventh rank by both medium and high involved group. F-value (.744) is not significant which means there is no significant difference in the usage of newspaper and magazine advertisements among the three groups of respondents segmented on the basis of involvement, low, medium as well as high. Thus, H_7 is rejected.

Past experience means a lot for low and high involved consumers. They give it second rank in terms of source of information. However medium involved group assign fifth rank to past experience. F-value (2.87) shows that there is significant difference in usage of past experience among the three groups of respondents segmented on the basis of involvement, low medium as well as high. Thus H_8 is accepted.

Manufacturer's pamphlets inserted in newspapers has been allotted fifth, eighth and sixth rank by low, medium and high involved consumers respectively. F-value (7.691) shows that there is difference in usage of manufacturer's pamphlets inserted in newspapers by the three groups of respondents segmented on the basis of involvement, low, medium as well as high. Thus H_9 is accepted.

Salesperson and shopkeeper's advice is ranked as eight by low as well as high involved consumers. Medium involved consumers allot it fourth rank. There is no significant difference in usage of salesperson and shopkeeper's advice among the three groups of respondents segmented on the basis of involvement, low medium as well as high as F-value (.930) is insignificant. Thus H_{10} is rejected.

Friends and family advice is an important source of information for all involvement groups. Medium involvement group gives second rank to friends and family advice as a source of information whereas low involvement group has allotted fourth rank and high involvement group has given third rank to friends and family advice. F-value (.032) is not significant and thus H_{11} is rejected.

Not much difference is observed in window shopping through store visits. Low involved consumers and medium involved consumers give it a sixth rank whereas high involved consumers assign it fifth rank. Insignificant value of F (.485) rejects H_{12}.

Point of purchase advertisement is an important source of information for all the three involvement groups. Low involved consumers and medium involved consumers give it third rank and high involved consumers give it fourth rank. F-value (2.989) is significant. It means there is a difference in the usage of point of purchase advertisement by the three groups of respondents segmented on the basis of involvement, low, medium as well as high. Hence H_{13} is accepted.

Advertisement in public transports i.e. buses, railways occupies ninth, twelfth and tenth rank by low involved, medium involved and high involved consumers respectively. Significant F-value (10.919) shows that there is variation in usage of advertisement in public transports i.e. buses, railways among the three groups of respondents segmented on the basis of involvement, low medium as well as high. Hence H_{14} is accepted.

Cinema advertisements holds eleventh position by low involved, medium involved and high involved consumers. F-value (6.052) is significant. It means there is difference in usage of cinema advertisements by the three groups of respondents segmented on the basis of involvement, low medium as well as high while buying FMCGs. Thus H_{15} is accepted.

Road side bill-boards and hoardings occupy tenth rank by low involved and ninth rank by medium involved and high involved. F-value

(0.157) is insignificant. Thus H_{16} is rejected meaning thereby that there is no significant difference in usage of road side bill-boards and hoardings.

However there is a large number of rows in the form of twelve sources of information and also there are three columns in the form of low, medium and high Z-score of product class involvement. Thus, the technique of correspondence analysis is used to reduce the large number of row and columns in small dimensions to have a meaningful answer to the question "which source of information is mostly used by each group based on product class involvement". Thus, correspondence analysis is applied to find the relationship between usage of sources of information among three segmented groups. Correspondence analysis is an exploratory technique related to the principal component analysis which identifies a multidimensional representation of the association between the row and column categories of a two-way contingency table. This technique finds scores for the row and column categories on a small number of dimensions which account for the greatest proportion of the *chi²* for association between the row and the column categories, just as principal components account for maximum variance. For graphical display two or three dimensions are typically used to give a reduced rank approximation to the data[1].

The significant value of chi-square test (χ^2 = 0.570 with 28 degree of freedom) shows statistical significance for all information sources. Results of correspondence analysis are shown in figure 1.

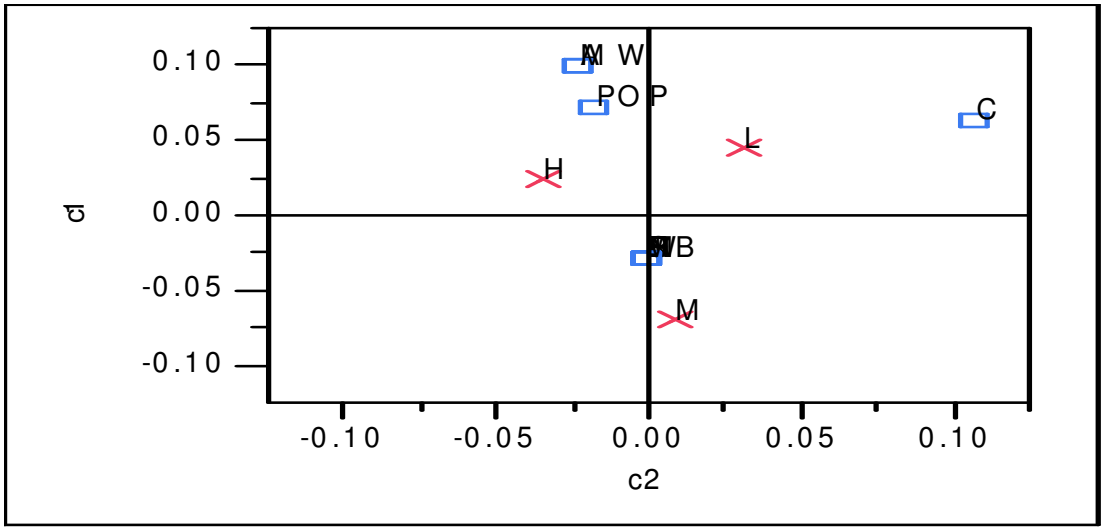

Figure 1: Correspondence analysis between three involvement groups and main information sources for FMCG**

Note: ☒ represents three categories of product class involvement; low, medium and high. ☐ represents sources of information.
c1 represents sources of information and c2 represents mean value of three involvement groups
While plotting values for correspondence analysis, full names of sources of information are not used as it results in overlapping and an unreadable figure. Shortcut names are used for sources of information. These are past experience (P), friends and family's advice (F), TV advertisements (T), point of purchase advertisement (POP), newspaper, magazine advertisements (N), window shopping through store visits (WT), manufacturer's pamphlets inserted in newspapers (M), salesperson and shopkeeper's advice (S), advertisement in public transports i.e. buses, railways (A), road side bill boards/hoardings (BB), radio advertisements (R) and cinema advertisements (C).

1- http://www.math.yorku.ca/SCS/Cources/grcat/gra5.html

The figure provides graphic information for examining the underlying relationship between involvement groups and main information sources used by each of the group. Figure 1 represents apparent dissimilarities of information source usage among the three segmented groups. The figure reveals that while searching for information for FMCG products, low involvement group uses mainly cinema advertisements; middle involvement group uses manufacturer's pamphlets inserted in newspapers, and road side bill boards/hoardings. On the other hand, high involvement group concentrates on point of purchase advertisements, window shopping through store visits and advertisement in public transport i.e. buses, railways.

DISCUSSION

This study examines the most influencing determinant of information search in the purchase of FMCG products. Further on, the study tries to investigate the difference in usage of sources of information by the consumers for FMCG products when they are segregated into homogeneous groups on the basis of the most important determinant of information search which comes out as product class involvement. Finally, correspondence analysis is used to produce a two dimensional graphical plot of the observed data variation. This analysis shows that there is difference in usage of sources of information by different involvement groups. While comparing the results of present study with the other study, it is found that this study has used the same approach as used by Park and Kim (2010). However the study of Park and Kim (2010) is conducted in USA to explore the information search behavior of college students while planning their spring break trip whereas the area of this study is confined to the boundaries of India to determine the behavior of consumers while buying FMCG products. Further on, the basic purpose of Park and Kim (2010) study is to determine the perceived usefulness of every information channel. On the other side, this study determines the difference in usage of various sources of information search. This type of segmentation can go a long way in rationalising the communication spending of the companies.

Managerial Implications

This study provides useful insights with regard to the information search behavior of the consumers that can be used to attract more consumers. When the consumers are searching for information they are likely to search for various brands available for the product, various feature of the brands, explore the prices of alternative brands, investigate the quality and other features, thus the marketers need to design their communication strategy in such a manner that they cater to the information search needs of the consumers.

CONCLUSION

In the competitive world, companies want to capture a large number of customers through selected advertising and information channels. Strong, unique and favourable message about brand help the companies to differentiate their products from their competitors and thus support a competitive advantage (Aaker, 1991 and Krishnan, 1996). Experts say that your target customers need to hear your marketing messages at least 7 times to influence a buying decision. Using marketing & sales strategies outside your budget, doesn't allow you to repeat your message often enough to make an impact[2]. Further some communications channels are going to be better suited to the target market than others. For instance, placing radio ads may be a complete waste of money if your target market doesn't regularly listen to the radio[3]. Thus it is essential to know what information sources are used by the target market. Due to limited marketing budget and resources, it is very essential for the companies to determine the consumers preferred source of information to better access the targeted cosumers. Based on the findings of this study, marketing managers are suggested to offer their communication through appropriate information source according to the nature of the segmented group.

2- http://sbinformation.about.com/cs/marketplansample/a/impactplan.htm

3- http://sbinfocanada.about.com/od/marketingplans/a/How-To-Run-A-Successful-Marketing-Campaign.htm

Limitation and Scope for Further Studies

Due to financial and time constraint, this study is confined to the few cities of Punjab which has limited the scope of this study. Further research can explore more areas. Further research can be done to identify the involvement groups (low, medium and high) by such a characteristic of consumers which is visible to marketing managers that is, demographic characteristics, personality traits, socio-economic characteristics, geographies, etc.

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Appendix 1. Description of Constructs and Their Sources

Product class Knowledge (Duncan and Olshavsky, 1982).

- ✓ In general, I am quite capable when it comes to distinguishing good brand from bad brand.
- ✓ I am a good judge when I have to evaluate brands of FMCG.
- ✓ Generally speaking, I am a knowledgeable shopper.

Product class involvement (Zaichkowsky, 1985)

- ✓ I always wanted to know more about FMCG and enjoy it when people teach me about it.
- ✓ FMCG is important as well as essential.
- ✓ I am interested in reading information about what FMCG is made of.
- ✓ I am interested in reading the consumer reports articles about FMCG.
- ✓ I have interest in FMCG and I am fascinated with it.

Benefits of information search (Srinivasan and Ratchford, 1991)

- ✓ It pays to shop around before buying FMCG.
- ✓ By searching more information, I am certain of making the best buy.
- ✓ I learned which brand of FMCG is suitable for me by shopping around.
- ✓ I got exactly what I wanted by searching enough before I bought FMCG.
- ✓ Shopping around at various shops helped me to find the lowest price when I bought FMCG.

Satisfaction [Taylor et al. (2004) c.f. Oliver (1997) and Sirdeshmukh et al. (2002)]

- ✓ This brand of FMCG has exceeded my expectations.
- ✓ The brand is among the best I could ever buy.
- ✓ The brand is exactly what I needed.
- ✓ My choice to buy this brand was wise one.
- ✓ I am satisfied with my decision for this brand.
- ✓ I am sure that it was right to buy this brand.
- ✓ Using this brand has been a good experience.
- ✓ I have been delighted with this brand.