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TESTING AND VALIDATING A TOOL TO MEASURE PRODUCT INVOLVEMENT FROM ITS ANTECEDENTS

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ABSTRACT

Lot of research has been carried out lately with respect to the concept of involvement. This has become an area of interest from multiple strategic angles. Since, involvement is a concept which is related with the psychology and buying behavior of consumers, it is relatively cumbersome to measure. This paper has attempted to examine product involvement for real estate properties in the state of Gujarat, India. Data was collected in the form of structured questionnaires from respondents across the three most populated urban cities i.e. Ahmedabad, Surat and Vadodara. The tool had thirty questions asking respondents to provide their opinion on statements on a seven point likert scale. A total sample of 600 was considered appropriate with equal samples from the three cities. Data was collected on the basis of stratified random sampling where occupation was considered as the strata. The statements were formed considering three dimensions of involvement i.e. cognition, affection and behavioural. The data was found fit for factor analysis based on KMO and Bartlett's test. Factor analysis (Principal Axis Factoring) was carried out to test and validate factors that had an impact in determining product involvement. The results showed that from the three dimensions and thirty questions, five antecedents were found which were named as Affect (Af), Awareness (Aw), Intent (In), Credence (Cr) and Action (Ac). The tool developed was named as Involvement Antecedent Framework (IAF). Lastly, correlation analysis confirmed high levels of correlation between the antecedents of involvement.

I. INTRODUCTION

A lot of research has been carried out and will be carried out in future in the field of consumer behavior studies. The behavior of consumers is a complex phenomenon and keeps changing constantly with changes in the environment. For instance, what was assumed to be brand loyalty, was found to be habitual buying behavior (Kotler, 2015) [1]. With increasing choice and competition, the consumer has become more powerful and accordingly, marketers are trying to study them as closely as possible. One such area of study which is gaining prominence is involvement. Though originally the concept was found in psychology, soon researchers found the concept useful in the study of consumer psychology too.

II. PRODUCT INVOLVEMENT

The concept of involvement has been introduced in the field of marketing and especially consumer behaviour in the 1940s by Sheriff and others where they defined ego involvement [2]. Numerous definitions of involvement have been put forward by researchers over time. Freedman (1964) defined involvement as a general level of interest or concern about an issue [3]. The concept of involvement is to be applied to the person or consumer, in this case, and not the object. Therefore, it may be seen that two different persons may showcase different involvement levels for the same object [4]. Consumer involvement is important in the study of consumer behaviour since it can potentially become an important mediator (Andrew Mitchell, 1979) [5]. In the last few years, the concept of involvement has become considerable since it has

opened up a new dimension of consumer psychology. This concept has the potential to become a base of market segmentation [6]. It has been used to study the buying decision process for different offerings. It has been found that where involvement is low, products are purchased without detailed study of the product or offering. Evaluation, if any, is done on a superficial level (Lastovicka, 1979) [7]. Some of the most notable researches in this field can be dedicated to Zaichkowsky and Laurent and Kapferer who attempted to measure involvement with respect to advertisements and products. Laurent and Kapferer identified multiple kinds of involvement depending on product importance, risk, brand, pleasure value and so on [8]. The researchers developed a tool to measure involvement based on fourteen product categories. Another major contributor was Zaichkowsky who developed a tool called the personal involvement inventory (PII) [9] which was based on a bi-polar scale and had around thirty items. Later this tool was revised to twenty item scale which was named as the revised personal involvement inventory (RPII). The construct was applicable to product involvement, advertising involvement and also purchasing involvement [10]. Two scales of involvement have appeared recently in major marketing/consumer behavior journals. Of these, Laurent and Kapferer's (1985) scales assume multi-dimensionality in involvement; and Zaichkowsky's (1985) scale, while driven by a unidimensional view of involvement, is not unified [11]. Another dimension to measurement of involvement was put forward by Carmen Garcia et al (1996) when they designed a tool called the CIQ (Consequences of Involvement Questionnaire). Instead of asking the respondent his/her level of involvement with a product, they identified antecedents to involvement and through these antecedents, involvement levels were empirically calculated [12]. The concept of product involvement is ever evolving and still lot of insights are yet to be realized. Product involvement is closely related to perceived risk (Dholakia, 1997) [13]. Because of this, it has been observed that based on the levels of involvement, other factors like payment mechanisms and even shopping situations are likely to be different for low involvement products when compared to high involvement products (Ming-Chuan Pan, 2007) [14]. The concept of involvement can be used as a marketing tool to segment markets into low, moderate and high involvement customers and based on that each group can be targeted separately (Michaelidou et al, 2008) [15]. It is found that perceived risk fully mediates the effect of the importance dimension of product involvement on information search but not of the hedonic dimension. The effect of hedonic involvement on information search is direct [16]. The Elaboration Likelihood Model by Petty and Cacioppo suggested that in case of higher involvement with message, a central route of persuasion is adopted while where involvement is low, peripheral route of persuasion is adopted [17].

III. RESEARCH METHODOLOGY

The purpose of this study was to test and validate antecedents of product involvement for real estate properties in the state of Gujarat, India and present a standard tool to measure involvement in general. In this descriptive research, a sample of 600 respondents from across three most populated cities of Gujarat i.e. Ahmedabad, Surat and Vadodara was considered sufficient. Data was collected in the form of a structured questionnaire in which respondents were asked to provide their agreement to a set of thirty statements related to product involvement. Initially, three dimensions were identified in order to measure involvement. Cognitive dimension measured the information processing

methods, knowledge and perception about the product. The affective or emotional dimension measured the feelings towards the product or brands and finally the behavioural dimension which measured the purchase intention and purchase purpose of the product. The statements based on these three dimensions were categorized into factors using principal axis factoring method of factor analysis. Before undertaking data analysis, reliability of the data was measured through Cronbach Alpha which was 0.837 suggesting high measure of reliability.

IV. RESULTS AND DISCUSSIONS

A structured questionnaire comprising thirty items was constructed. The purpose was to identify valid factors as antecedents of consumer involvement. The tool had statements which were to be rated on a seven point likert scale where 7 was "very strongly agree" and 1 as "very strongly disagree". By applying principal axis factoring method, valid factors were identified and analysed. One pre-determinant for conducting factor analysis is the correlation between the items. In absence of significant correlation, factor analysis cannot be conducted.

Table 1: KMO and Bartlett Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.934
Bartlett's Test of Sphericity	Approx. Chi-Square	7933.475
	df	435
	Sig.	0.000

Source: Author, (2020).

For the present study, Bartlett's test of Sphericity is found highly significant with 435 degrees of freedom and a Chi square value of 7933.475 (p=0.000). A significant value shows high correlations among variables tested. Along with Bartlett's test of Sphericity, another important test for factor analysis is the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy which indicates whether sample is sufficient for the factor analysis to be conducted. In the present study, a KMO value of 0.934 is obtained which indicates that factor analysis can be conducted. Thus, the basic parameters for conducting a valid factor analysis are found to be favourable.

Table 2: Factor Analysis for Testing and Validating Antecedents of Involvement for Real Estate Properties.

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	10.664	35.547	35.547
2	1.812	6.041	41.587
3	1.458	4.862	46.449
4	1.314	4.380	50.829
5	1.176	3.920	54.749
	Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	10.159	33.864	33.864
2	1.346	4.486	38.351
3	0.972	3.239	41.590
4	0.781	2.603	44.193
5	0.668	2.226	46.419
	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	3.312	11.041	11.041
2	2.783	9.275	20.316
3	2.637	8.789	29.105
4	2.633	8.776	37.881
5	1.641	5.471	43.352
Extraction Method: Principal Axis Factoring.			

Source: Author, (2020).

From the table, a total of five factors were found to be having Eigen value more than 1. Out of the factors, first factor contributed the most with 35.547 percent of the total variance. The second factor contributed 6.041 percent to the total variance, while the third factor contributed 4.862 percent. The fifth factor had the least contribution of 3.920 percent to the total variance. The total variance of the five factors was 54.7490 percent which is an acceptable level for studies related to social science and consumer behaviour (Yong & Pearce, 2013) [18].

After validating five factors affecting consumer involvement, the rotated component factor matrix loading was examined in order to validate each item and allocate all the items to each of the five factors. While doing so, all items having factor loading less than 0.4 were ignored as having negligible or no influence. A total of 26 items were found valid from the initial 30 for which data was collected. Following Table 3 shows the factor loadings of each item of the tool.

Table 3: Rotated Component Matrix (Factors Identified).

Item	Factor				
	FI	FII	FIII	FIV	FV
This product is important for me				0.484	
I will prefer it if it fulfills my needs				0.534	
I love this product	0.479		0.406		
I very much have pleasure and enjoyment using this product	0.517				
I don't have any problem in spending money on this product			0.485		
This product makes me feel good	0.553				
This product has an important place in my life	0.427				
I have an emotional attachment with this product	0.465				
I have a strong interest in this product		0.643			
I take interest in collecting information about this product		0.642			
I compare various alternatives available in this product category		0.572			
I believe in going through a meticulous process of information collection for this product			0.645		
I like to spend time learning more about this product	0.508				
I love to get experts opinions and evaluations on this product	0.420				
I pay more attention to advertisements about this product			0.655		
I am able to evaluate the differences in various brands of this product			0.464		
I try to be up to date with latest information about this product			0.423		
I try to get maximum information about this product from various sources		0.658			
I am eager to buy this product in the right conditions					0.678
I feel that if I purchase this product, it will enhance my social standing	0.511				
Most of the people wanting to buy this product take a detailed process of buying		0.584			
I enjoy talking with knowledgeable people on this product			0.661		
I like to share ideas about this product with my friends	0.595				
Lack of this product makes me feel deprived	0.610				
I feel that this product is important for everyone			0.432		
I like/ would like to have this product					0.691
Eigen Value	**10.664**	**1.812**	**1.458**	**1.314**	**1.176**
% of Variance	**35.547**	**6.041**	**4.862**	**4.38**	**3.92**
Cumulative %	**35.547**	**41.587**	**46.449**	**50.829**	**54.749**
Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization.					

Source: Author, (2020).

Based on the factor analysis results, the three dimensions initially identified were scattered into five factors and a twenty six item tool to measure consumer involvement was finalized which was named as the Involvement Antecedent Framework (IAF). The five factors were named as Affect (Af), Awareness (Aw), Intent (In), Credence (Cr) and Action (Ac). Table 3b shows the complete valid tool having five distinct antecedents that affect consumer involvement towards real estate properties. The data clearly shows that the tool measures high on reliability for all the factors individually. The Cronbach alpha ranges between 0.860 for Affect (Af) and 0.705 for the factor Action (Ac). Since all the Cronbach values are above 0.60 which is considered as a standard for accepting reliability of the data, it can be said that the results obtained from the analysis were reliable for interpretation. The overall mean for the factors was found to be 5.733 on a seven point scale which indicated that product involvement for real estate properties in selected cities of Gujarat was high.

Table 3b: Rotated Component Matrix (Factors Named).

Factor	Item	Factor Loading	Cronbach	Mean	S.D.
Affect (Af)	I love this product	0.479	0.860	5.567	0.816
	I very much have pleasure and enjoyment using this product	0.517			
	This product makes me feel good	0.553			
	This product has an important place in my life	0.427			
	I have an emotional attachment with this product	0.465			
	I like to spend time learning more about this product	0.508			
	I love to get experts opinions and evaluations on this product	0.420			
	I feel that if I purchase this product, it will enhance my social standing	0.511			
	I like to share ideas about this product with my friends	0.595			
	Lack of this product makes me feel deprived	0.610			
Awareness (Aw)	I have a strong interest in this product	0.643	0.812	5.96	0.837
	I take interest in collecting information about this product	0.642			

	I compare various alternatives available in this product category	0.572			
	I try to get maxmum information about this product from various sources	0.658			
	Most of the people wanting to buy this product take a detailed process of buying	0.584			
Intent (In)	I love this product	0.406	0.796	5.468	0.927
	I don't have any problem in spending money on this product	0.485			
	I pay more attention to advertisements about this product	0.655			
	I am able to evaluate the differences in various brands of this product	0.464			
	I try to be up to date with latest information about this product	0.423			
	I feel that this product is important for everyone	0.432			
Credence (Cr)	This product is important for me	0.484	0.781	5.707	0.856
	I will prefer it if it fulfills my needs	0.534			
	I believe in going through a meticulous process of information collection for this product	0.645			
	I enjoy talking with knowledgeable people on this product	0.661			
Action (Ac)	I am eager to buy this product in the right conditions	0.678	0.705	5.963	0.846
	I like/ would like to have this product	0.691			

Source: Author, (2020).

The purpose of this research is not just to validate a tool to measure consumer involvement, but also to examine the overall consumer involvement for real estate properties in Gujarat.

Through Bartlett's test, it is observed that there is high level of correlation between factors affecting consumer involvement. Correlation analysis confirmed this fact.

Table 4: Consumer Involvement for Real Estate in Gujarat.

		Affect (Af)	Awareness (Aw)	Intent (In)	Credence (Cr)	Action (Ac)
Affect (Af)	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	600				
Awareness (Aw)	Pearson Correlation	.535**	1			
	Sig. (2-tailed)	0.000				
	N	600	600			
Intent (In)	Pearson Correlation	.725**	.550**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	600	600	600		
Credence (Cr)	Pearson Correlation	.632**	.398**	.634**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	600	600	600	600	
Action (Ac)	Pearson Correlation	.431**	.288**	.427**	.424**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	600	600	600	600	600
Two tailed correlation is significant at 99%						

Source: Author, (2020).

As seen in Table. 4, there was significant positive correlation between all the antecedents of consumer involvement in the range of 0.725 and 0.288. The highest correlation was between Affect (Af) and Intent (In) while that between Awareness (Aw) and Action (Ac) was found to be the least. The mean for overall involvement for real estate properties in Gujarat was found to be 5.733 indicating high levels.

V. CONCLUSIONS

The data collected is found fit for further analysis in terms of preliminary tests. It is found that out of initially designed thirty items 26 items had factor loadings above 0.4 and based on that the tool is considered robust for further analysis. The three dimensions initially considered are split into five factors or antecedents which are named as Affect (Af), Awareness (Aw), Intent (In), Credence (Cr) and Action (Ac). The analysis of each antecedents provide valid and reliable results in terms of Cronbach alpha. The mean values of each antecedent is on the higher side of the seven point scale indicating that in this study the product involvement for real estate properties in Gujarat showes higher involvement levels. As shown by the Bartlett's test, there was high positive correlation between all the antecedents of product involvement as shown in Table 4. The highest correlation is found between Affect (Af) and Intent (In) (r=0.725), while the least correlation is found between Awareness (Aw) and Action Ac) (r=0.288). From the five factors maximum items (10) are related to the factor Affect (Af), the factor

Awareness has 5 items whereas Intent (In) has 6 items. The least items are associated with the last factor Action (Ac) which is 2. The remaining factor Credence (Cr) has 4 items.

VI. LIMITATIONS

The research reveals some important insights into the antecedents of product involvement. This framework is applied to real estate properties. The same model can be tested with other products especially low involvement products or even services. A similar construct can be applied to a greater population to further validate the results. Based on this framework, a common construct to measure involvement levels and examine the factors associated with it can be propounded.

VII. AUTHOR'S CONTRIBUTION

Conceptualization: Ashutosh Anil Sandhe.
Methodology: Ashutosh Anil Sandhe.
Investigation: Ashutosh Anil Sandhe.
Discussion of results: Ashutosh Anil Sandhe.
Writing – Original Draft: Ashutosh Anil Sandhe.
Writing – Review and Editing: Ashutosh Anil Sandhe.
Resources: Ashutosh Anil Sandhe.
Supervision: Ashutosh Anil Sandhe.
Approval of the final text: Ashutosh Anil Sandhe.

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