

Dynamics in Family Purchase Decision Making – Exploring Influence of Adolescents in Kolkata District, West Bengal

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Abstract

The influence of children in family purchase decision-making is highly admitted by the entire society due to the rapid changes in socioeconomic and demographic structures of the family. The study aims at determining the levels of adolescents' influences with respect to different stages of family purchase decision-making across different product categories. It also seeks to highlight several factors considered by the adolescents at different stages of family purchase decision making process and investigate the levels (degree) of adolescents' influences with respect to different stages of family purchase decision-making process. An online survey is conducted and the primary data have been collected through an electronic questionnaire, which results in sample of 194 respondents (adolescents) from Kolkata. The data are analysed using statistical package SPSS version 20. The findings of the study focus on several stimulating factors at different stages of purchase decision making process and ultimately to determine which one is the most and the least influencing stage based on the degree of influences of such factors used by them. It will also help the marketers to analyse how the influence and dominance of adolescents varies based on diversified range of the product categories.

Keywords: Adolescents, Family, Influencing factors, Purchase decision-making process, Product categories.

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I. BACKGROUND OF THE STUDY

A family is the primary and powerful decision-making unit in the society (Assael, 1998 cited by Chaudhury, 2013). It is observed that the family structure has been changing significantly since the past few decades due to a rapid turn down in average size of the family (from extended to nuclear), a decrease in average number of children per family, an increase in family income due to existence of both income parents or dual career parents in the family and above all a shift from command to negotiation method in family purchase decision making. As a result, the responsibilities of the family members have become more equivocal and ambiguous. These demographic and social shifts have changed the attitude of parents. As a result, they give their children an increased status for influencing purchase decision directly or indirectly, actively or passively (Geuens et al., 2002). Now children in the Indian family are more vocal about their needs (Godhani, Khant, and Jadeja, 2012) and enjoy more autonomy and dominance as compared to the previous generation.

The present study attempts to develop a conceptual framework with regard to product categories, purchase decision stages and factors affecting sub-decisions to assess the levels of influences of adolescents in family purchase.

II. SURVEY OF LITERATURE

Family decision making has recently become an emerging field of study (Kozak, 2010) and the youth have progressively caught the attention to the marketers due to their increasing command and persuasion power over family purchasing decisions (Shoham and Dalakas, 2003).

Kotler et al. (2014) stated five stages of the purchase decision process. These are initiation or need recognition, information search, and evaluation of alternatives, purchase decision and post-purchase decision.

Moschis and Mitchell (1986) and Beatty and Talpade (1994) also agreed about children's influences at different decision-making stages. Wimalasiri, 2004 and Martensen and Gronholdt, 2008 also proved that children are the greater initiators to influence the family purchase decision-making process and they are independent at the subdivision stages of the buying process. Wut and Chou (2009) agreed that Children's influence and involvement are high in the initiation, searching information, and evaluation of alternatives stages, but low in the final purchase decision.

Children's roles vary according to their levels of involvement and product categories (Saboor, et al., 2013). This is because children try to influence more for those products in which they have the primary interests. Children show less involvement for those products that are used in household and they do not have any interest in.

III. IDENTIFICATION OF RESEARCH GAP

Although, there is an increasing amount of empirical research on children's influence on family decision making conducted (Thomson, Laing and McKee, 2007 cited from Williams and Burns, 2000), still a gap exists in the literature concerning how the children influence family purchase decisions in Indian perspective. During early period of twenty-first century several studies were conducted indicating the

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growing influence of children but did not recognize them as chief actors in family purchase decisions in Indian context.

The present study purports to fill the research gap by focusing on four stages of the purchase decision process and thereby identifying the levels of influences of adolescents at every stage of family purchase process.

IV. OBJECTIVES OF THE STUDY

- To determine the levels of adolescents' influences with respect to different stages of family purchase decision-making across different product categories.
- To identify several factors considered by the adolescents at different stages of family purchase decision making process and
- To determine which stage is influenced most and which one is influenced least by the adolescents based on the degree of influences of such factors used by them.

V. RESEARCH METHODOLOGY

The population units consist of adolescents having age group of 13 to 18 years, who are living together with their parents (essentially married couple) and residing in Kolkata over the last 5 years. Primary data is collected through self-administered online survey where the questionnaire is framed using Google form (Vasanth and Harinarayana, 2016) and included closed questions for easy and quick response accessibility. Those have been shared with social network and on social media such as Facebook and WhatsApp or their personal E-mail accounts. There are all total 262 participants, from which 210 are satisfying the given criteria, which is almost 81% positive response rate. After looking through the answers, some has to be removed and not counted due to incomplete answers. The final number of complete and usable responses is 194. The survey was active and shared for 25 days (from 1st May to 25th May 2021). The variables used in the study are quantified to facilitate the analysis done by SPSS Version 20.

VI. DATA ANALYSIS AND FINDINGS

6.1. Validity and Reliability of questionnaire

During the data collection process, the validity and reliability are most important, because the test of validity or reliability of the data identifies the erroneous data. Table 1.1 shows the validity and reliability of the present study.

Table1: Validity and Reliability of Questionnaire

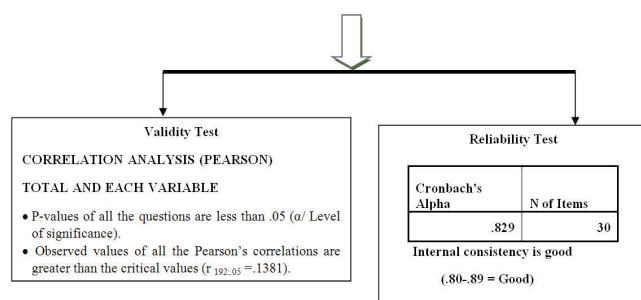


Table 1 shows that p-values of all the questions are less than .05 (α/ Level of significance). Simultaneously, considering

the observed value of Pearson's correlation, it is seen that all the observed values are greater than the critical values ($r_{192; .05} = .1381$). Hence, it can be concluded that all the items in the questionnaire are valid. Again, it shows the value of Cronbach Alpha (.829) for measuring the reliability of a given set of the questionnaire in the survey. The above value is on the good level focusing the interrelations of the questionnaire items.

6.2. Levels of adolescents' influences with respect to different stages of family buying decision-making across different product categories

To determine the level of adolescents' influences with respect to different stages of family buying decision-making in terms of different product categories, research hypothesis is developed as:

H1: There is significant difference in the effect of level of influence among different stages of family purchase decision-making across different product categories.

Hypothesis 1 is again divided into 3 sub-hypotheses based on different product categories.

Hypothesis 1.1: There is significant main effect of the stages of purchase decision-making on levels of influence of adolescents

Hypothesis 1.2: There is significant main effect of the product categories on levels of influence of adolescents.

Hypothesis 1.3: The interaction effect between the stages of decision-making and the product categories is significant

The above hypotheses are tested using two-way repeated measure ANOVA in SPSS.

Here, 3X4 repeated measure design is used. The two independent variables are- Process of purchase decision-making and Product categories.

- Here process of purchase decision-making considered four levels or stages- initiation, information search, evaluation of alternatives and final decision.
- Product categories consists of three levels-Common, Shopping and Premium.

The levels of influence of children are taken as dependent variable.

All the children participants took part in all the levels. The results of the analysis are tabulated below.

Table 2: Tests of Normality

Stages	Product	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
INITIATION	common	.288	194	.062	.765	194	.291
	shopping	.304	194	.175	.801	194	.152
	premium	.228	194	.120	.883	194	.288
INFORMATIONSEARCH	common	.306	194	.087	.806	194	.159
	shopping	.255	194	.223	.872	194	.230
	premium	.248	194	.129	.854	194	.061
EVALUATION	common	.217	194	.211	.858	194	.198
	shopping	.195	194	.163	.847	194	.112
	premium	.240	194	.065	.891	194	.077
FINALDECISION	common	.231	194	.323	.833	194	.142
	shopping	.283	194	.055	.784	194	.299
	premium	.247	194	.289	.858	194	.203

a. Lilliefors Significance Correction

Source: Primary Data, Processed by SPSS V.20

Significance Level 5%

Table 2 shows that the significant values of all the levels are greater than .05. Hence, the sample is not significantly deviated from normality. The Shapiro–Wilk test is more appropriate method for small sample sizes (<50 samples) although it can also be handling on larger sample size while Kolmogorov–Smirnov test is used for $n = 50$ (Ghasemi A, Zahediasl S, 2012). For both of the above tests, null hypothesis states that data are taken from normal distributed population. When $P > 0.05$, null hypothesis accepted and data are called as normally distributed.

Table 3: Descriptive Statistics

Stages	Product	Mean	Std. Deviation	N
INITIATION	common	3.95	1.264	194
	shopping	3.70	1.298	194
	premium	2.66	1.253	194
	Total	3.44	1.387	582
INFORMATION SEARCH	common	3.47	1.458	194
	shopping	3.47	1.226	194
	premium	3.02	1.454	194
	Total	3.32	1.398	582
EVALUATION	common	3.24	1.488	194
	shopping	2.96	1.553	194
	premium	2.87	1.166	194
	Total	3.02	1.419	582
FINAL DECISION	common	2.11	1.119	194
	shopping	2.25	1.201	194
	premium	2.05	1.053	194
	Total	2.14	1.127	582

Source: Primary Data, Processed by SPSS V.20

Table 3 shows first the mean values measuring the children's level of influence on family purchasing decision making among different stages of family purchase decision-making across different product categories. The levels of influences are measured on a 5-point Likert Scale, where, 1= Strongly non-influence by the children, 2= Somewhat non-influence by the children, 3= Neutral / Co-influence by both children and parents, 4= Somewhat influence by the children and 5= Strongly influence by the children. It implies that where mean value is less than 3 (mid-point), the product is subjected to parental influence and where it is above 3 (mid-point), the product is subjected to children influence. It is reflected that the children's levels of influences are highest when initiation stage and regular product category are matched (mean=3.95) and the same are lowest when final decision stage and durable product category are matched (mean=2.05). It suggests that there is an interaction between variables, hence, needs to look at the inferential statistics to confirm this.

Table 4: Mauchly's Test of Sphericity

Measure: Influence						
Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon	
					Greenhouse-Geisser	Huynh-Feldt
stages	.899	61.622	5	.100	.934	.943
Sphericity is assumed if Sig. > 0.05.		$\chi^2(5) = 61.622, p = .100$		Mauchly's Test does not indicate any violation of Sphericity.		

Significance Level :

The sphericity assumption is required for all univariate main effect tests and interaction tests (O'Brien & Kaiser, 1985). As mentioned under assumptions in Table 4, repeated measures ANOVA requires sphericity and Mauchly's test evaluates if this holds. It is stated that sphericity is met if $p > 0.05$, so the sphericity assumption is met by the data. We don't need any correction such as Greenhouse-Geisser or Huynh-Feldt.

Table 5: Tests of Within-Subjects Effects

Measure: Influence						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
stages	Sphericity Assumed	605.750	3	201.917	113.931	.000
	Greenhouse-Geisser	605.750	2.803	216.105	113.931	.000
	Huynh-Feldt	605.750	2.828	214.213	113.931	.000
	Lower-bound	605.750	1.000	605.750	113.931	.000
						.326
stages * product	Sphericity Assumed	125.550	6	20.925	11.807	.000
	Greenhouse-Geisser	125.550	5.606	22.395	11.807	.000
	Huynh-Feldt	125.550	5.656	22.199	11.807	.000
	Lower-bound	125.550	2.000	62.775	11.807	.000
						.239
Error(stages)	Sphericity Assumed	3078.450	1737	1.772		
	Greenhouse-Geisser	3078.450	1622.956	1.897		
	Huynh-Feldt	3078.450	1637.291	1.880		
	Lower-bound	3078.450	579.000	5.317		

Significance Level 5%

Source: Primary Data, Processed by SPSS V.20

Table 5 is the most important table in the output, as it gives us the results of the ANOVA. Based on the above the result can be reported that the main effect of the stages of decision making on the level of influence is statistically significant, sphericity assumed $F(3,1737) = 113.931, p < .05$. This effect is qualified by significant stages X product group interaction effect, sphericity assumed $F(6,1737) = 11.807, p < .05$.

Table 6: Tests of Between-Subjects Effects

Measure: Influence						
Transformed Variable: Average						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	20659.031	1	20659.031	13965.587	0.000	.960
Product	99.715	2	49.857	33.704	.000	.204
Error	856.504	579	1.479			

Significance Level 5%

Source: Primary Data, Processed by SPSS V.20

Table 6 shows that the test of Between-subjects Effect is a test of the main effect of the grouping variables on the level of influences on the repeated measure averaged over stages. The main effect of product group on the average level of influence across stages is statistically significant, $F(2,579) = 33.704, p < .05$.

Summarized results:

- The result of the two-way repeated measures ANOVA reveals that there is significant main effect of the stages of decision-making on the levels of influences [$F(3,1737) = 113.931, p < .05, \eta^2 = .326$] which is an indicative of large effect size.
- The main effect of product group on the average level of influence across stages is statistically significant, [$F(2,579) = 33.704, p < .05, \eta^2 = .204$] which is an indicative of large effect size.
- There is a significant interaction effect between stages of decision-making and product group [$F(6,1737) = 11.807, p < .05, \eta^2 = .239$] which is an indicative of large effect size.

6.3. Identification of several factors considered by the children at different stages of family purchase decision-making process and determination of most influential stage based on the relative importance of those factors.

Here Exploratory Factor analysis (EFA) is conducted as a dimension reduction technique to handle the large number of factors that are coded against 5-point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree) which is used for the 31 statements

Table 7: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.903
Bartlett's Test of Sphericity	Approx. Chi-Square	13878.913
	df	465
	Sig.	.000

5% Significance level

Source: Primary Data, Processed by SPSS V.20

In table 7 KMO=.903 which indicates that the sample is adequate and intend to proceed for the factor analysis. The Kaiser-Meyer-Olkin (KMO) measure is used to test the sampling adequacy, which varies between 0 and 1. The value closer to 1 is better and the value of .6 is the suggested minimum. The Bartlett's Test of Sphericity follows chi-square distribution which indicates there is a significant correlation (as level of significance = .000 < 0.05) among variables. Hence, Bartlett's test is significant and factor analysis is appropriate

Table 8: Components of the Result of Factor Analysis summarised					
Statement No.	Statements	Eigen Values	% of Variance	Cumulative % of Variance	Factor Loadings
F1	Factors affecting stage of Initiation/Need recognition	8.149	26.286	26.286	-
S6	Product is used only for me.				.996
S9	Product is used for the family.				.998
S10	Product is used by me and my siblings.				.998
S12	Product is required for regular household.				.993

S13	The crisis of any emergency or unpredictable problem like the breakdown of the computer				.995
S17	Priority or urgency of the problem is important				.996
S19	The Product is used for my education purpose				.983
S30	My friend uses the product				.989
F2	Factors affecting stage of Information search	7.369	23.772	50.057	-
S2	The brand of the product is important to me				.973
S3	The advertisement of the product is very popular.				.940
S5	The reference group assists me to get the information				.882
S7	I am the ultimate consumer of the product.				.983
S8	I have the personal experience about the quality of the product				.969
S14	The warranty of the product is great				.930
S16	The parents consult with us before purchase.				.864
S24	The promotional offer of the product is very eye catching				.990
F3	Factors affecting stage of Evaluation of Alternatives	6.097	19.669	69.726	-
S4	The product is cheaper than competitors' one.				.992
S11	The product has found in the convenient location.				.979
S18	The quality of the product is more important than the design.				.910
S21	The design is more important than the quality.				.908
S26	The price is reasonable to meet the family demand.				.750
S27	You can differentiate the product from the choices.				.967
S29	Involvement with the product is more important than the attributes.				.985
S31	Time in search is important to influence.				.932
F4	Factors affecting stage of Final Decision	5.792	18.685	88.411	-
S1	The brand proliferation of the product is attractive				.955
S15	Perceived value of the product satisfied me.				.827
S20	Product is available in the market/virtually at competitive price				.899
S22	Product attributes are thoroughly examined				.814
S23	Characteristics of the product satisfy my need.				.949
S25	Product is frequently available				.949
S28	Will reduce searching cost				.721

Source: Primary Data, Processed by SPSS V.20

Table 8 reveals that each of the above four factors (stages) have the eigen value exceeding 1.0 and all the four factors together explain 88.411% of the total variance (using varimax rotation). Thus 31 variables are reduced to four-factor model and each factor is intensified with corresponding variables.

Based on the above four purchase decision making stages (factors), it is required to perform multiple regression analysis to assess whether the independent variables have a significant influence to the dependent variable. Here, dependent variable is the level of influence of adolescents at family purchase decision making process whereas independent variables are the factors affecting at initiation, information search, evaluation and final purchase stage of decision-making process. To achieve the above objective, research hypothesis is developed as:

H2: There is significant relationship between the levels of influences of adolescents at family purchase decision making process (dependent variable) and the factors affecting at initiation, information search, evaluation and final purchase stage of decision-making process (independent variables).

The result of the multiple regression analysis is shown below.

Table 9: Result of Coefficient Correlation of Multiple Regression Analysis (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865	.749	.744	.36659
Predictors: (Constant), final purchase, initiation, evaluation, information search				
Dependent Variable: levels of influences				

Source: Primary Data Processed by SPSS V.20

Table 9 shows that independent variables have a strong correlation with decision (R) for 86.5%. The coefficient of determination (R^2) in table 1.4 is equal 0.749 that showed 74.9% of the variation in the willingness to purchase is described by all of the independent variables- i.e., factors affecting initiation, information search, evaluation and final purchase decision stages while the remaining 100% - 74.9% = 25.1% are explained by other variables which is not described in this research.

Table 10: Result of F-test (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30599.434	4	7649.858	140.968	.000
	Residual	10256.386	189	54.267		
	Total	40855.820	193			
Dependent Variable: levels of Influences						
Predictors: (Constant), Initiation, Info search, Evaluation, Final decision						

Significance Level 5%

Source: Primary Data, Processed by SPSS V.20

Table 10 shows that the value of F statistic is 140.968 with .000 probabilities. Since the F count is $140.968 > F$ table ($\alpha = 0.05$) 3.76, then alternative hypothesis in this research cannot be rejected and the above regression model can be used to predict the level of influence (dependent variable) of the adolescents in family purchase decision making process. Hence, all of the independent variables i.e., factors affecting initiation or need recognition, searching of information, evaluation of alternatives and final purchase decision stages have significant effect on the dependent variable, i.e., level of influence of children in family purchase decision making process.

Table 11: Regression Analysis: Coefficients

Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-24.200	1.517		-15.952	.000
	Initiation	1.550	.108	.525	14.363	.000
	Information search	1.309	.106	.452	12.346	.000
	Evaluation	1.243	.101	.450	12.345	.000
	Final purchase	1.692	.170	.363	9.960	.000
Dependent Variable: Level of Influence						

Significance Level 5%

Source: Primary Data, Processed by SPSS V.20

The table 11 shows the regression analysis of the relationship between dependent and independent variables in this research. All the p-values corresponding to the coefficients of the independent variable is significant (as Sig = .000). By looking at the independent variables in this research, none of the variables can be measured as of units. Since the condition of variables that cannot be measured as units (doesn't have constant value), the standardized coefficients column indicated by the beta value column are considered as the determinant for the coefficient regression. Thus, the regression equation shall be considered as follows:

Levels of influence(Y) = .525 Initiation + .452 Information search + .450 Evaluation of alternatives + .363 Final purchase

From the above it can be seen that all the coefficients of the regression equation are positive. Initiation stage is the highest contributing independent variable whereas Final purchase stage is the lowest contributing independent variable.

VII. CONCLUSION OF THE STUDY

The present study has statistically proved that the levels of adolescents' influences are significantly different with respect to different stages of purchase decision-making across different product categories. It has identified several factors that are considered by the adolescents at different stages of family purchase decision making process. It has also concluded that although the influences of adolescents persist at every stage of purchase decision process, however the degree of such influences varies depending on the existence of above factors considered understudy and ultimately determine that initiation stage is the most influencing stage and final decision stage is the least influencing stage based on the degree of influences of such factors used by them.

VIII. CONTRIBUTION OF THE STUDY

The study examines the influence and involvement of the children from two perspectives i.e., consumer behaviour and the child's psychology. Moreover, the concepts of sociology, marketing, economics and statistics will be pooled together in this study to make it multidisciplinary. It helps the researchers, scholars, evaluators, parents, children, family and the society as a whole to evaluate how the stages of purchase decision-making process affect children while they are influencing family purchase in Indian perspective. It also helps the marketers, marketing strategists, and sales executives to understand children and ultimately to develop suitable and effective marketing strategies as well as better target market programme focusing on children, mainly the group of adolescents.

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