Chaid And Anova Analysis On The Factors Of Impulsive And Compulsive Buying Behavior – A Comparative Study

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ABSTRACT

This paper presents a comprehensive review and comparison of impulsive and compulsive buying behavior, two distinct but related phenomena in consumer psychology. Impulsive buying refers to spontaneous and unplanned purchases driven by immediate emotional or situational triggers, while compulsive buying involves repetitive and excessive purchasing behaviors characterized by an irresistible urge to buy, often leading to negative consequences. The aim of this review is to analyze the similarities and differences between impulsive and compulsive buying behavior, examining their underlying psychological mechanisms, triggering factors, and consequences. By understanding these distinct consumer behaviors, marketers, psychologists, and policymakers can develop effective strategies to address their impact on individuals and society. Commonalities between the two behaviors include the role of emotions, cognitive factors, and environmental cues in stimulating buying urges. Furthermore, this review discusses the psychological, social, and financial consequences associated with both behaviors. Impulsive buying may lead to immediate gratification but can also result in regret, financial strain, and reduced well-being. In contrast, compulsive buying is often associated with deeper psychological issues, such as low self-esteem, anxiety, and compulsive hoarding. The implications of these findings extend beyond individual consumer behavior. Businesses can utilize this knowledge to tailor marketing strategies that appeal to impulsive or compulsive buyers, while also

implementing responsible selling practices. Moreover, healthcare professionals and psychologists can develop targeted interventions and therapies to help individuals struggling with these buying behaviors, fostering healthier consumption habits and overall well-being. In conclusion, this review highlights the distinct characteristics of impulsive and compulsive buying behavior, providing a foundation for further research and practical interventions. By gaining a deeper understanding of these consumer tendencies, stakeholders can work towards minimizing the negative impacts of impulsive and compulsive buying while promoting mindful and responsible consumption patterns.

Keywords: Women apparels, psychiatric behavior, CHAID, mental health conditions, materialism.

INTRODUCTION

Impulsive and compulsive buying behaviors are two distinct types of consumer behaviors related to purchasing decisions. While both involve an element of uncontrollable urges to buy, there are key differences between the two. Impulsive buying refers to making unplanned or spontaneous purchases without much thought or consideration. Impulsive buying behavior is primarily driven by emotional factors, such as excitement, pleasure, or the desire for instant gratification. The Impulsive buyers often make quick decisions without thoroughly evaluating the product's usefulness, price, or long-term consequences. It is often triggered by external factors, such as attractive product displays, promotional offers, or peer influence. The Impulsive buyers may experience post-purchase regret or guilt after realizing that their purchase was unnecessary or unwise. The Impulsive buying behavior is typically sporadic and not a consistent pattern. It may occur in response to specific situations or stimuli. Compulsive buying refers to repetitive, excessive, and uncontrollable purchasing behavior that is difficult to resist, even when it leads to negative consequences. Compulsive buying behavior is associated with psychological factors, such as an attempt to relieve stress, anxiety, or depression. It may also serve as a coping mechanism or a way to gain a sense of control. These types of buyers often have an intense preoccupation with shopping, constantly thinking about it, and experiencing an overwhelming urge to engage in buying activities. They have difficulty controlling their urge to buy and may feel a temporary sense of relief or

euphoria during the shopping process. These buyers can lead to financial problems, relationship strain, and emotional distress due to accumulating debt, cluttered living spaces, or feelings of guilt and shame. Compulsive buying behavior is characterized by repetitive and ongoing patterns of excessive buying, often interfering with daily functioning and relationships. While impulsive buying behavior is typically more situational and driven by emotions, compulsive buying behavior is a more persistent and compulsive pattern of excessive purchasing driven by psychological factors. It's important to note that both impulsive and compulsive buying behaviors can have negative consequences and may require intervention or professional help if they become problematic.

REVIEW OF LITERATURE

Impulsive and compulsive buying behavior has been the subject of extensive research in the field of consumer behavior and psychology. Researchers have investigated various aspects of these behaviors, including their prevalence, underlying psychological factors, consequences, and possible interventions. Here is a review of some key literature on impulsive and compulsive buying behavior:

Roberts, J. A. (1998). Compulsive buying among college students: An investigation of its antecedents, consequences, and implications for public policy. Journal of Consumer Affairs, 32(2), 295-319. This study explores the factors influencing compulsive buying behavior among college students, its consequences on individuals and society, and proposes recommendations for public policy to address the issue.

Dittmar, H. (2005). Compulsive buying—a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. British Journal of Psychology, 96(4), 467-491. The author investigates the relationship between compulsive buying, gender, age, and materialistic values. The study highlights the predictors of compulsive buying tendencies and their implications for different demographic groups.

Rook, D. W., & Fisher, R. J. (1995). Normative influences on impulsive buying behavior. Journal of Consumer Research, 22(3), 305-313. This research examines the impact of normative influences on impulsive buying behavior. It investigates how social and situational factors influence individuals' propensity to engage in impulsive buying.

Faber, R. J., & O'Guinn, T. C. (1992). A clinical screener for compulsive buying. Journal of Consumer Research, 19(3), 459-

469. The authors develop and validate a screening measure for compulsive buying behavior. The study provides insights into the assessment and identification of compulsive buying tendencies.

Verplanken, B., & Herabadi, A. (2001). Individual differences in impulse buying tendency: Feeling and no thinking. European Journal of Personality, 15(1), S71-S83. This study investigates the role of emotions and cognitive processes in impulse buying tendencies. It highlights the individual differences in impulsive buying behavior and the influence of emotional states on such behavior.

Black, D. W. (2007). A review of compulsive buying disorder. World Psychiatry, 6(1), 14-18. The author provides an overview of compulsive buying disorder, including its definition, diagnostic criteria, prevalence, comorbidity with other disorders, and treatment options. The review contributes to the understanding of compulsive buying as a distinct clinical condition.

Trotzke, P., Starcke, K., Müller, A., & Brand, M. (2015). Pathological buying online as a specific form of internet addiction: A model-based experimental investigation. PLoS ONE, 10(10), e0140296. This study explores the concept of pathological buying as a form of internet addiction. It investigates the cognitive and behavioral mechanisms underlying compulsive online buying behavior.

Rose, P., & Segrist, D. J. (2014). Impulse buying: Trait and state aspects of self-regulation. Journal of Business Research, 67(7), 1366-1374. The authors examine both trait and state aspects of self-regulation in relation to impulse buying behavior. The study sheds light on the role of self-control and self-regulatory processes in impulsive buying tendencies.

These studies represent a small sample of the vast literature on impulsive and compulsive buying behavior. They provide valuable insights into the prevalence, causes, consequences, and interventions related to these behaviors. Further research in this field continues to contribute to our understanding of the complex nature of impulsive and compulsive buying behavior.

OBJECTIVES OF THIS STUDY

This study proposed the following objectives:

a) The first objective is to identify the internal relationship between the factors chosen for impulsive buying behavior and compulsive buying behavior.
b) The second objective is to provide some suggestions to reduce the tendency of compulsive buying behaviour

among the people who are more prone to compulsive buying tendencies.

HYPOTHESIS DEVELOPMENT

a) Null Hypothesis (H_0):

The null hypothesis is a statement of no effect or no difference between groups or variables in a scientific experiment or study. It is often denoted as H0 and is typically contrasted with the alternative hypothesis (H1), which represents the claim or hypothesis that the researcher wants to support.

$$H_0 = \bar{y_1} - \overline{y_2} = 0$$

b) Alternate Hypothesis (H_1):

The alternate hypothesis (H_1) is formulated as an opposing statement to the null hypothesis, suggesting that there is a significant effect, relationship, or difference between variables of interest.

$$H_1 = \bar{y_1} - y_2 \neq 0$$

METHODOLOGY:

a) Dataset Collection

The primary data was collected through a well-structured questionnaire method through google form. This empirical research, based on questionnaire survey, was carried out on convenience sample of women and men in and around the places of Chennai region in the age-group of 25-60 years. 20 questionnaires were floated through the google form. It is a 10 point likert scale ranging from 1 to 10, where 1 being strongly disagree and 10 being strongly agree. A total of 5600 instances was received, out of which, 992 instances were found to be invalid. Remaining 4608 instances were determined to be valid and taken for analysis.

b) Missing Variable Analysis

The analysis of missing variable is a crucial part in a dataset. Since, inclusion of missing variable may affect the overall performance. The missing variable analysis was carried out using the SPSS tool, a statistical analysis tool.

c) CHAID – Chi-squared Automatic Interaction Detection

CHAID (Chi-squared Automatic Interaction Detection) is a decision tree analysis technique that helps identify the most significant predictors in a categorical dependent variable.

d) ANOVA – Analysis of Variables

The basic idea behind ANOVA is to compare the variance between groups (often referred to as "group variance" or "treatment variance") with the variance within groups (often referred to as "error variance"). If the between-group variance is larger than the within-group variance, it suggests that there are significant differences among the groups. The ANOVA test produces an F-statistic, which is a ratio of the between-group variance to the within-group variance. If the F-statistic is large enough to exceed a critical value (based on the chosen significance level and the degrees of freedom), it indicates that the group means are significantly different from each other.

RESULTS AND DISCUSSION

This section presents the results obtained through the methodology adopted for analyzing the factors chosen for IBB and CBB.

a) Impulsive Buying Behavior (IBB):

Table 1 presents the univariable statistics of the factors chosen for the impulse buying behavior. It is observed from table 1 that the mean values of the factors colors, designs, brand and packaging are 7.98, 8.38, 8.38 and 8.75 respectively. On the other hand, the standard deviation of the factors is 1.282, 1.111, 1.111 and 1.199. It is to be noted that the designs and brands holds the same value for the mean and standard deviation which indicates that both the factors carry equal attention among the purchasers.

Table 1 Univariable statistics of the factors of IBB

Factors	Statistical Analysis		Missing	
	Mean	Std. deviation	Count	Percent
Colors	7.98	1.282	0	0.0
Designs	8.38	1.111	0	0.0
Brand	8.38	1.111	0	0.0
Packaging	8.75	1.199	0	0.0

*No. of cases out of range (Q1-1.5*IQR, Q3+1.5*IQR)

For the proposed analysis, the CHAID analysis is presented in the table 2. Out of the chosen factors, brand is considered as the dependent variable and the remaining factors as the independent variables. From the analysis, it is found that the maximum tree depth is 3, minimum cases is parent node is 100 and the minimum cases in child node is 50. This yields design as the independent variable with 5 nodes, 4 terminal nodes and depth value as 1.

Table 2 CHAID Analysis

Specifications	Growing Method	CHAID
	Dependent Variable	Brand
	Independent Variables	Colors, Designs, Atmosphere, Type, Display, Packaging, Promotion, Time, Payment
	Validation	None
	Maximum Tree Depth	3
	Minimum Cases in Parent Node	100
	Minimum Cases in Child Node	50
Results	Independent Variables Included	Designs
	Number of Nodes	5
	Number of Terminal Nodes	4
	Depth	1

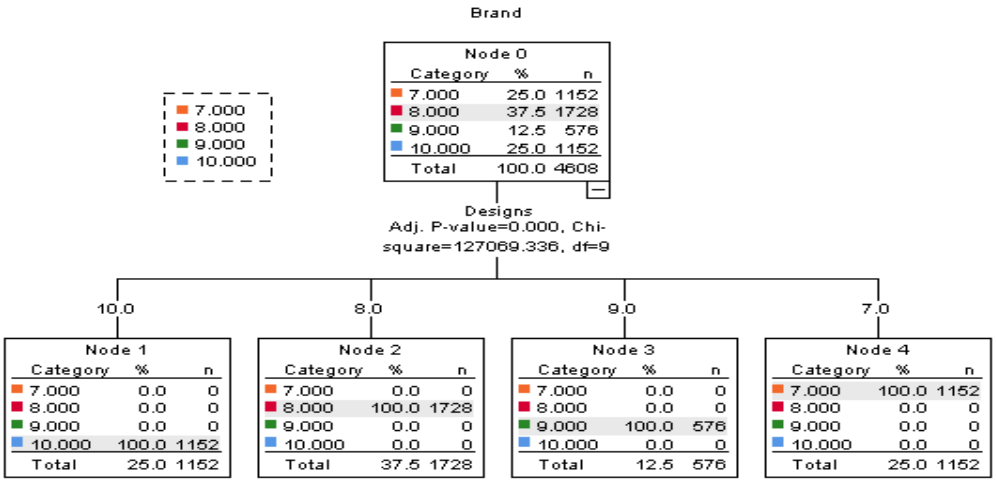

Figure 1 CHAID Tree Analysis

From figure 1, it is observed that the dependent node is brand, and the independent node is design and the total number of instances classified under the likert scale of 7, 8, 9 and 10 are 1152, 1728, 576 and 1152 respectively. The total number of instances ended up with 4608, which represents that all the instances are grouped, and none is missing out. Table 3 epitomizes the total instances classified according to the likert scale. Figure 2 represents the receiver operating characteristic curve which gives the ratio of the occurrence between the true positive rate (sensitivity) and false positive rate (1-specificity).

Table 3 Classification as per the likert scale

Observed	**Predicted**

	7	8	9	10	Percent Correct
7	1152	0	0	0	100.0%
8	0	1728	0	0	100.0%
9	0	0	576	0	100.0%
10	0	0	0	1152	100.0%
Overall Percentage	25.0%	37.5%	12.5%	25.0%	100.0%

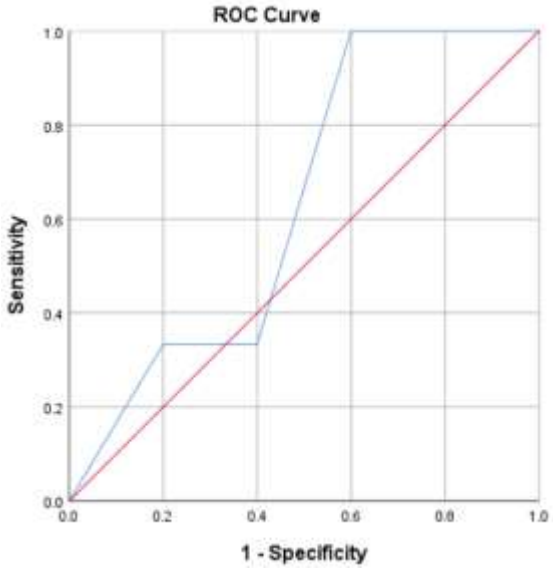

Figure 2 True Positive Rate Vs False Positive Rate

Table 4 Area Under the Curve

Test Result Variable(s): Brand				
			Asymptotic 95% Confidence Interval	
Area	Std. Error[a]	Asymptotic Sig.[b]	Lower Bound	Upper Bound
.633	.008	.000	.617	.649
The test result variable(s): Brand has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.				
a. Under the nonparametric assumption				
b. Null hypothesis: true area = 0.5				

Table 5 Coordinates of the Curve

Positive if Greater Than or Equal To	Sensitivity	1 - Specificity
6.00	1.000	1.000
7.50	1.000	.600
8.50	.333	.400
9.50	.333	.200
11.00	.000	.000

From table 5, it is depicted that the brand has at least one tie between the positive actual state group and the negative

actual state group. The smallest cut-off value is the minimum observed test value minus 1, and the largest cut-off value is the maximum observed test value plus 1. All the other cut-off values are the averages of two consecutive ordered observed test values.

Table 6 Statistical analysis of the factors related to IBB

SA	LS	Colors		Design		Atmosphere		Type		Display		Packaging		Promotion		Time		Payment	
		P	B	P	B	P	B	P	B	P	B	P	B	P	B	P	B	P	B
M	1	-	-	-	-	9.50	8.50	-	-	-	-	-	-	-	-	9.50	8.00	-	-
N		-	-	-	-	24	24	-	-	-	-	-	-	-	-	1152	1152	-	-
SD		-	-	-	-	.511	1.532	-	-	-	-	-	-	-	-	.500	.000	-	-
M	2	-	-	-	-	8.35	8.98	-	-	-	-	-	-	-	-	8.67	8.50	-	-
N		-	-	-	-	126	126	-	-	-	-	-	-	-	-	3456	3456	-	-
SD		-	-	-	-	1.261	.820	-	-	-	-	-	-	-	-	1.106	1.258	-	-
M	3	-	-	-	-	8.00	7.00	-	-	-	-	-	-	-	-	-	-	-	-
N		-	-	-	-	94	94	-	-	-	-	-	-	-	-	-	-	-	-
SD		-	-	-	-	.000	.000	-	-	-	-	-	-	-	-	-	-	-	-
M	4	8.33	8.01	-	-	10.00	8.00	-	-	8.33	8.01	-	-	-	-	-	-	-	-
N		143	143	-	-	82	82	-	-	143	143	-	-	-	-	-	-	-	-
SD		.948	.818	-	-	.000	.000	-	-	.948	.818	-	-	-	-	-	-	-	-
M	5	8.00	8.48	-	-	9.00	8.00	-	-	8.00	8.48	-	-	-	-	-	-	-	-
N		85	85	-	-	576	576	-	-	85	85	-	-	-	-	-	-	-	-

SD		.000	1.509	-	-	.000	.000	-	-	.000	1.509	-	-	-	-	-	-	-	-
M	6	10.00	10.000	-	-	9.50	8.50	-	-	10.00	10.00	-	-	-	-	-	-	-	-
N		87	87	-	-	32	32	-	-	87	87	-	-	-	-	-	-	-	-
SD		.000	.0000	-	-	.508	1.524	-	-	.000	.000	-	-	-	-	-	-	-	-
M	7	10.00	8.000	8.50	7.00	8.33	9.00	8.50	8.50	10.00	8.00	9.00	10.00	8.50	7.00	-	-	-	-
N		1152	11152	1152	1152	1602	1602	1152	1152	1152	1152	1152	1152	1152	1152	-	-	-	-
SD		.000	.0000	.500	.000	1.247	.817	1.501	.500	.000	.000	1.000	.000	.500	.000	-	-	-	-
M	8	8.33	8.000	9.67	8.00	8.00	7.00	8.00	10.00	8.33	8.00	10.00	8.00	9.67	8.00	-	-	8.00	10.00
N		1585	15885	1728	1728	482	482	576	576	1585	1585	576	576	1728	1728	-	-	576	576
SD		.943	.817	.472	.000	.000	.000	.000	.000	.943	.817	.000	.000	.472	.000	-	-	.000	.000
M	9	8.00	8.50	7.00	9.00	10.00	8.00	9.00	8.50	8.00	8.50	8.50	8.50	7.00	9.00	-	-	9.40	8.20
N		1067	10667	576	576	494	494	1152	1152	1067	1067	1152	1152	576	576	-	-	2881	2881
SD		.000	1.501	.000	.000	.000	.000	1.000	1.501	.000	1.501	1.501	.500	.000	.000	-	-	.801	.980

M	10	10.00	10.000	9.00	10.00	9.50	8.50	9.33	7.67	10.00	10.00	8.67	7.33	9.00	10.00	-	-	8.00	8.00
N		489	489	1152	1152	1096	1096	1728	1728	489	489	1728	1728	1152	1152	-	-	1151	1151
SD		.000	.000	1.000	.000	.500	1.501	.472	.472	.000	.000	.472	.472	1.000	.000	-	-	1.000	1.000

*SA – Statistical Analysis, LS – Likert Scale, P – Price, B – Brand

b) Compulsive Buying Behaviour (CBB):

According to a review conducted in the year 2014, some of the craving and withdrawl symptoms some people experience may resemble addictions, which involves both physical and psychological factors. In this section, the factors that influences the compulsive buying behavior is analysed using ANOVA and the statistical analysis is presented. The factors such as mental health conditions (MHC), personality characteristics (PC), materialism (M), advertising exposure (AE), retail therapy (RT) are analyzed. Table 7 presents the statistical analysis of the factors considered.

Table 7 Univariate Statistics for CBB

	N	Mean	Std. Deviation	Missing	
				Count	Percent
Materialism	4608	8.87	1.053	0	.0
MHC	4608			0	.0
PC	4608			0	.0
AE	4608			0	.0
RT	4608			0	.0

* Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR)

It is observed from table 7 that the mean and the standard deviation for the factor materialism is 8.87 and 1.053 respectively. Also, it is noticed that there are no missing values. The total instances are equal for all the factors considered. Table 8 presents the mean and standard deviation for all the factors considered.

Table 8 Statistical analysis for the factors considered for CBB

Materialism	**MHC**	**PC**	**AE**	**RT**

7	Mean	9.00	7.00	9.00	7.67
	N	576	576	576	576
	Std. Deviation	.000	.000	.000	1.107
8	Mean	8.50	8.50	8.50	8.70
	N	1152	1152	1152	1152
	Std. Deviation	1.501	.500	1.501	1.046
9	Mean	7.50	10.00	7.50	7.67
	N	1152	1152	1152	1152
	Std. Deviation	.500	.000	.500	1.101
10	Mean	8.67	8.67	8.67	7.80
	N	1728	1728	1728	1728
	Std. Deviation	.943	1.248	.943	1.400
Total	Mean	8.38	8.75	8.38	7.98
	N	4608	4608	4608	4608
	Std. Deviation	1.111	1.199	1.111	1.282

It is seen from table 8 that the highest mean value is 10.00 and the lowest mean value is 7.5 that holds for personality characteristics (PC) for a likert scale of 9. This indicates that the PC plays a major role in the compulsive buying behavior that influences the customers.

Table 9 Analysis of Variance (ANOVA)

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
MHC	Between Groups	1272.000	3	424.000	442.051	.000
	Within Groups	4416.000	4604	.959		
	Total	5688.000	4607			
PC	Between Groups	3648.000	3	1216.000	1881.204	.000
	Within Groups	2976.000	4604	.646		
	Total	6624.000	4607			
AE	Between Groups	1272.000	3	424.000	442.051	.000
	Within Groups	4416.000	4604	.959		
	Total	5688.000	4607			
RT	Between Groups	829.247	3	276.416	188.697	.000
	Within Groups	6744.222	4604	1.465		
	Total	7573.469	4607			

The final step in ANOVA in SPSS is to calculate the mean square which is obtained by dividing the sum of squares by the corresponding degrees of freedom. The null hypothesis of equal means, which is done by an F statistic, is the ratio between the mean square related to the independent variable and the mean square related to the error. From table 9, it is

seen clearly that the mean square value for the PC is 1216.000, which is very high when compared to the other factors and the lowest is the RT, which holds the value of 276.416. The F-static value of PC is 1881.204, which is higher when compared to other factors; the lowest is 188.697 for RT. The above analysis depicts that PC hold the highest sum of squares value, i.e., 3648.000.

CONCLUSION

The human tendency to take part in comparison is pervasive to the point that individuals automatically compare and other people who are unmistakably not applicable comparison targets, and they need to exert mental effort to fix the mental outcomes of such unseemly comparison. This comparative study provides the impacts of various factors on the purchasing behavior of the customers interested in buying the women apparels. Highly influenceable factors were chosen for critical analysis. This study has made some useful contributions to the field of marketing research relevant to consumer psychology pertinent to the selected factors of IBB and CBB. This study has found many new dimensions which are applicable on modern day consumers. This study highlights that impulsive buying is a stressful reaction to keep internal state relaxed. The findings of the study have an avenue for practicing marketers to find out in which markets and under what kind they can maximize their sales, by pushing the consumers towards Impulsive buying behavior. Moreover, this study has opened avenues for future researchers and encourage them to integrate clinical and behavioural domains of psychology in marketing research.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Though the study has lot to offer on the avenues of marketing and psychology literature and practice, but still there are some limitations which were part of this research and have affected the process of this research. Firstly, the sample is limited and was taken conveniently this has an implication for the generalizability of results to the whole population. This limitation is dependent on another limitation of budgetary and time constraints being faced by the researcher as this research was self-financed by the researcher. It is recommended that this research should be carried out on a larger sample with cultural diversity, by including many other dimensions like power distance belief, gender diversity, occasional impulsive buying and type of cultures that is collectivist and

individualistic cultures for more rich findings and more generalizable findings for the marketing literature.

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