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AN EMPIRICAL STUDY OF CONSUMER IMPULSE BUYING BEHAVIOR INFLUENCED BY FLASH SALES AND LIMITED-TIME PROMOTIONS IN RANCHI CITY, JHARKHAND

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Abstract: This study explores consumer impulse buying behavior influenced by flash sales and limited-time promotions in Ranchi City, Jharkhand. In the era of digital marketing and e-commerce growth, time-bound promotional strategies such as flash sales and limited-time offers have become powerful tools to stimulate unplanned purchasing decisions among consumers. The research aims to understand how these promotional techniques affect consumer psychology, decision-making, and purchasing patterns in an emerging urban market like Ranchi. The study is based on primary data collected through a structured questionnaire from 100–150 respondents. The collected data has been analyzed using percentage analysis along with the help of tables, bar graphs, and pie charts to present the findings in a clear and systematic manner. The research focuses on identifying key factors such as urgency, perceived discounts, social influence, emotional triggers, and convenience that contribute to impulse buying behavior. The findings reveal that flash sales and limited-time promotions significantly influence consumers by creating a sense of urgency and fear of missing out (FOMO), leading to spontaneous purchase decisions. Consumers, especially young and digitally active individuals, are more prone to impulse buying during such promotional events. However, factors like income level, awareness, and prior purchase planning also play a moderating role. The study concludes that while these marketing strategies effectively boost short-term sales, they also shape consumer behavior patterns in the long run. It suggests that businesses should use such promotional tools strategically while consumers should develop awareness to make more rational purchasing decisions.

Index Terms – Impulse Buying Behavior, Flash Sales, Limited-Time Promotions, Consumer Behavior, Ranchi, Jharkhand.

I. INTRODUCTION

Background of the Study

In the past decade, retail has changed drastically in India with the advent of e-commerce, the surge in smartphone penetration and increasingly competitive digital marketing tactics. In the world of marketing, few tactics are as effective as limited-time promos for a quick spike in consumer demand, as flash sales and limited-time promotions are among the many promotional tools that both online and offline retailers have embraced. The steep discounts, narrow time periods and the fact that they are frequently sold out are all tactics used to make the consumer feel the need to buy without hesitation, often without thinking.

In general, impulse buying is the immediate and unplanned need to buy something; this phenomenon has been investigated in the marketing and consumer behaviour literature for a long time. The digital age has, however, amplified the urgency factor by inserting urgency into the shopping process with countdown timers, low-stock alerts, flash notifications and one-day-only offers. The study is especially interesting in Tier-II and emerging urban markets of India like Ranchi in Jharkhand. After gaining momentum in the last few years, the internet, e-commerce and organized retail have witnessed significant growth in Ranchi, and the socio-economic and cultural attributes of the city may create a difference in how consumers respond to different stimuli in a promotional campaign compared to a metropolitan city.

Despite the massive number of flash sales being used by big online corporations and small local stores alike, little empirical information exists about how consumers in cities such as Ranchi think about and react to the phenomenon of flash sales, and what psychological and situational processes are involved between seeing a flash sale and engaging in impulse buying. This study aims to overcome that gap, so an empirical study of consumer impulse buying behaviour has been conducted in the context of ‘Flash Sale’ and ‘Limited Time Promotion’ in the city of Ranchi.

Statement of the Problem

Flash sales and limited-time promotions are common methods of demand generation, but their impact on consumer behavior and how they work in various market situations are not well understood. The literature available on impulse buying and urgency-based promotions has largely been confined to consumers living in metros or western countries, with little information available concerning consumer reaction to these tactics in smaller cities that are undergoing rapid growth like Ranchi.

In particular, retailers and marketers do not have clarity about: (a) the impact of flash sales and limited-time offers on purchase impulsivity among the consumer base in Ranchi; (b) which specific characteristic of the offer (such as time pressure, perceived scarcity, discount depth or social proof) has the strongest influence on purchase impulsivity; and (c) whether the impact of flash sales and limited-time offers on purchase impulsivity is moderated by demographic variables (such as age, income, gender). Without this understanding, businesses could be creating promotions that do not work or are even unethical in terms of their manipulative marketing practices. Thus, this study aims to empirically explore the relationship between flash sale characteristics and impulse buying behavior of consumers in Ranchi city.

Significance of the Study

There are several stakeholders that can be served by this study. For academics, it adds to the literature on impulse buying with empirical data from a tier-II Indian city, which is largely underrepresented compared to metropolitan studies. It applies current consumer behaviour theories such as the Stimulus-Organism-Response (S-O-R) model to a regional Indian market.

Retailers and marketing practitioners, especially those who serve or advertise to new cities such as Ranchi, can use the results to inform their marketing decisions about which promotions are most likely to influence buying decisions, helping them allocate marketing resources more wisely. For e-commerce platforms and brand managers, the findings support more effective localised marketing efforts that respect local consumer psychology rather than relying solely on a pan-Indian promotional drive. Finally, the study also has implications for policymakers and consumer advocacy groups seeking a better understanding of how effective promotional strategies can be for inducing impulsive and/or unwise purchase decisions, especially among vulnerable consumer segments.

Scope of the Study

The scope of this study is limited to consumers of Ranchi city, Jharkhand, with prior experience of buying products on online e-commerce platforms as well as offline retail outlets offering limited-time promotional deals. The study specifically targets impulse buying behavior as the dependent construct in relation to variables of the promotion, namely perceived time pressure, scarcity (limited stock), discount magnitude and promotion framing.

The research is empirical and based on primary data gathered from consumers of Ranchi on a sample basis using a structured survey. It does not seek to extrapolate its results to the whole of Jharkhand or to other tier-II cities, although comparisons are made with literature available from other parts of the country where appropriate. The study has a shorter time frame of data collection and does not consider long-term post-purchase behavior such as product returns, buyer's remorse, and repeat purchase intentions, which are proposed as future research directions.

II. LITERATURE REVIEW

1. Rook (1987) explored the psychological nature of impulse buying, which occurs when a person makes an impulsive, unconsidered and emotional buying decision. The study was one of the first to classify impulse buying as an affective process instead of a rational one, and identified that impulse buying may lead to post-purchase satisfaction or regret; it remains a key reference in the field.

2. Muruganantham & Bhakat (2013) constructed a conceptual framework that categorizes the antecedent factors of impulse buying under external stimuli, internal psychological factors, situational factors and demographic factors. External factors identified for both offline and online retail included store environment, promotions and discounts.

3. Karbasivar & Yarahmadi (2011) applied Structural Equation Modelling to Iranian respondents (N = 275). Unplanned purchases were significantly higher when external stimuli were raised, supporting the visual and promotional stimuli employed in flash sales.

4. Nyrhinen et al. (2024) revealed that lower self-control and positive attitudes toward personalized ads and social media marketing were associated with higher levels of online impulse buying, further emphasizing the emotional nature of ads used by digital marketers.

5. Agrawal & Sareen (2016) studied the emerging e-commerce trend of flash sales in India, finding that time-limited discounted pricing creates a sense of urgency that leads to quick purchase decisions and promotes involvement, though frequent use may reduce consumers' willingness to buy at regular prices.

6. Hartono & Ingriana (2025) analyzed 33 research papers from Scopus (2020–2025), revealing that the key forces behind digital-era impulse buying are promotion strategy, visual appeal, emotional response, and social interaction, as seen on platforms like Shopee and TikTok Shop that effectively use urgency-based tactics.

7. Hong (2021) simulated the pricing and duration of flash sales and found that shorter time windows increase the sense of urgency and pressure, while a more visible countdown timer drives consumers to rush their purchases.

8. Duy & Nguyen (2026) used the S-O-R model and PLS-SEM to examine how time pressure, quantity pressure, information quality and economic benefits influence emotional arousal and pleasure, which further mediate the role of flash sale features on impulsive buying intention.

9. Prakasa & Karunia (2024) examined how the adoption of flash sale and cashback promotions affects impulse buying in live-streaming marketplaces, concluding that both promotions positively affect purchase behaviour, with a positive brand image enhancing the impact of both.

10. Zhang et al. (2026) demonstrated that flash sales increase sales in the short term but also increase the probability of post-transaction cancellation due to buyer's regret, especially for hedonic products, highlighting the importance of responsible promotion design.

11. Rani et al. (2026) studied the impact of flash sales and social media promotions on e-commerce consumers in India, finding that both were effective in inducing impulse buying through creating a sense of urgency and awareness about products respectively.

12. Karunia et al. (2025) found that flash sale promotions increase consumers' FOMO, consequently leading to a significant increase in impulse buying because consumers are required to make faster decisions with less product evaluation.

13. Ongyono et al. (2024) demonstrated that flash sales can significantly boost impulse buying behavior due to the short decision window, but can also create higher post-consumer regret when the product does not meet expectations, highlighting the trade-off between short-term sales and long-term satisfaction.

14. Gupta & Cooper (1992) employed experimental and econometric methods to demonstrate that the consumer response curve to discounts is S-shaped, meaning purchase intentions increase only after a certain discount threshold, which can guide the design of discount depth in flash sales.

15. Monroe & Krishnan (1985) provided a theoretical foundation for how consumers compare perceived quality of a product with the monetary sacrifice needed to make a purchase, explaining why discounts and time-limited offers can lead to a higher sense of value and faster purchasing decisions.

III. RESEARCH GAP

This study seeks to address five gaps in existing research. Geographically, the response to mobile-first flash sales is under-researched in tier-2 Indian cities compared to markets in the West. Theoretically, urgency, scarcity and FOMO have been studied separately and not together as a single promotional stimulus. Methodologically, existing measurement scales were developed prior to the emergence of mobile-first flash sales and have yet to be validated in smaller, more tightly-knit cities. Practically, there is a lack of city-specific, evidence-based guidance to retailers and policymakers for designing or regulating such promotions. Culturally, existing studies have largely overlooked how local saving and spending norms moderate consumer response to such promotional stimuli.

IV. RESEARCH QUESTIONS

1. What are the effects of flash sales on consumer impulse buying?
2. What is the impact of limited-time promotions on consumers' purchase decisions?
3. Which reasons (urgency, discounts, emotions) influence impulse buyers in the city of Ranchi?

V. RESEARCH OBJECTIVES

1. To analyze the effect of flash sales on consumer impulse buying behavior.
2. To test the effects of limited-time promotions on the decision to purchase.
3. To determine the most important factors that affect impulse buying among consumers in the city of Ranchi.

VI. HYPOTHESIS OF THE STUDY

H0 (Null Hypothesis): Flash sales and limited-time offers do not have a significant influence on consumer impulse buying behaviour in Ranchi city.

H1 (Alternative Hypothesis): Flash sales and limited-time offers play an important role in influencing consumer impulse buying behavior in Ranchi city.

VII. RESEARCH METHODOLOGY

Research Design

This study uses a descriptive-correlational design within a positivist quantitative research approach. As the study was not experimental, a descriptive method was adopted to capture consumers' natural attitudes and behavioral tendencies toward flash sales, while a correlational component enabled a deductive, hypothesis-driven test of the statistical relationship between consumers' exposure to flash sales and their impulse buying behavior.

Data Sources

Primary data was obtained directly from consumers in the field in Ranchi through a self-administered structured questionnaire. The literature review, development of hypotheses, and interpretation of findings were based on secondary data obtained from published peer-reviewed journal articles, meta-analyses and prior empirical studies on flash sales and impulse buying.

Sampling Technique and Sample Size

Non-probabilistic convenience sampling was employed, as no complete sampling frame of Ranchi consumers existed. Students, working professionals and general consumers with prior exposure to flash sale or limited-time offer shopping were surveyed. A final sample of 107 valid respondents was obtained, which is satisfactory for correlational and comparative statistical analysis, comparable to other studies in the impulse buying literature (e.g., N = 275 in Karbasivar & Yarahmadi, 2011; N = 180 in Rudhra, 2025).

Data Collection Method

Data was gathered using a structured questionnaire administered through Google Forms, comprising two parts: demographic data and a measurement section using 5-point Likert scale items measuring attitudes toward the promotion mechanisms and self-reported impulse buying tendencies.

Statistical Tools and Software

Responses were scored from 1 (Strongly Disagree) to 5 (Strongly Agree) and analyzed using statistical libraries compatible with SPSS-style analysis. Descriptive statistics (frequency, percentage), Pearson correlation, simple linear regression, independent samples t-test (gender comparison) and one-way ANOVA (age, income and occupation comparisons) were used, with hypotheses tested at a significance level of 0.05.

VIII. DATA ANALYSIS AND HYPOTHESIS TESTING

Reliability Analysis

The questionnaire items were adapted from impulse buying scales previously validated by Amos et al. (2014), Rook (1987) and Karbasivar & Yarahmadi (2011). A formal Cronbach's Alpha could not be computed for the single-item Flash Sales Influence construct; however, the three composite items measuring Impulse Buying Behaviour exhibited high, positive inter-item correlations, indicating good internal consistency for the composite items.

Demographic Analysis

Table 1 presents the gender distribution of respondents, showing a fairly balanced sample of male and female participants.

Table 1: Gender Distribution of Respondents

Gender	Frequency	Percentage
Female	57	53.3%
Male	49	45.8%
Trans	1	0.9%

Table 2 shows the age distribution, which is skewed toward young adults (20–30 years), the most active consumers of flash sales and e-commerce promotions.

Table 2: Age Group of Respondents

Age Group	Frequency	Percentage
10–20 Years	16	15.0%
20–30 Years	66	61.7%
30–40 Years	19	17.8%
40 & Above	6	5.6%

Table 3 reports occupation; students represent the largest occupational group, consistent with the young age profile of the sample.

Table 3: Occupation of Respondents

Occupation	Frequency	Percentage
Student	47	43.9%
Employed	31	29.0%
Unemployed	18	16.8%
Business	11	10.3%

Table 4 shows educational qualification; the sample is moderately educated, as 82.8% hold at least an undergraduate degree.

Table 4: Educational Qualification of Respondents

Qualification	Frequency	Percentage
Graduate	45	42.1%
Undergraduate	22	20.6%
Post Graduate	22	20.6%
12th	13	12.1%
10th	5	4.7%

Mean Score Analysis

Consumer attitudes toward flash sales and promotional mechanisms are generally positive, as indicated by the mean values in Table 5. Overall, 71.0% of respondents reported that flash sales impact their purchases, while 79.4% said promotions help them save money.

Table 5: Mean Score Analysis of Key Constructs

Construct	Mean Score
Flash Sales Influence	3.72
Promotion/Discount Attractiveness	3.68
Limited-Time Promotion Tools	3.63

Correlation Analysis

A Pearson correlation analysis found a significant, positive correlation between all three promotion constructs and impulse buying behaviour ($p < 0.001$). Promotion/Discount Attractiveness showed the strongest positive correlation with impulse purchases among Ranchi consumers.

Table 6: Correlation between Promotion Constructs and Impulse Buying Behaviour

Construct	Correlation (r) with Impulse Buying
Flash Sales Influence	0.601
Limited-Time Promotion Tools	0.613
Promotion/Discount Attractiveness	0.718

Regression Analysis

A simple linear regression of the three promotion constructs (limited-duration products, discount products and promotion appeal) on impulse buying produced $F(1,105) = 106.53$, $p < 0.001$, with $R^2 = 0.504$. This indicates that the three constructs of promotion account for approximately 50.4% of the variance in impulse buying behaviour — a substantial effect for a single behavioural outcome.

Hypothesis Testing

H0 (Null Hypothesis): Impulse buying behaviour of consumers in Ranchi city is not significantly influenced by flash sales and limited-time offers.

H1 (Alternative Hypothesis): Flash sales and limited-time offers have a significant impact on the impulse buying attitude of consumers in Ranchi city.

Decision Rule: If p-value < 0.05, reject H0; if p-value ≥ 0.05, accept H0.

Conclusion: The regression and correlation analysis results show that all p-values are less than 0.05. The null hypothesis is rejected, and the alternative hypothesis is accepted.

Interpretation of Results

The findings indicate a statistically significant positive influence of flash sales and limited-time offers on the impulse buying behaviour of consumers in Ranchi city. More consumers agreed that Promotion/Discount Attractiveness was the biggest influence, followed by Limited-Time Promotion Tools and Flash Sales Influence. Demographic factors (gender, age, income and education) had no significant impact on impulse buying scores, indicating that the impact of promotions is not limited to any specific demographic group.

Objective-wise Achievement of Objectives

Objective 1 – To analyze the effect of flash sales on consumer impulse buying behaviour: Achieved. A strong positive relationship was found between Flash Sales Influence and Impulse Buying ($r = 0.601$, $p < 0.001$).

Objective 2 – To study the effect of limited-time offers on the purchase decision: Achieved. Limited-Time Promotion Tools showed a significant positive correlation with impulse buying ($r = 0.613$, $p < 0.001$).

Objective 3 – To determine the most significant factors influencing impulse purchases by consumers in Ranchi city: Achieved. The strongest predictor overall was Promotion/Discount Attractiveness ($r = 0.718$, $p < 0.001$).

Major Findings

1. There is a strong and positive response of consumers to flash sales and limited-time promotions in Ranchi.

2. The most important factor impacting impulse buying is Promotion/Discount Attractiveness.

3. Value-based triggers such as ‘save’, free gifts and coupons are more effective than quantity-based triggers such as ‘buy one get one free’ (BOGO).

4. The three constructs of promotion together account for 50.4% of the variance in impulse buying behavior.

5. Demography is not a strong moderator of impulse buying behaviour.

IX. CONCLUSION

This study explored the effect of flash sales and limited-time offers on consumer impulse buying behavior using a sample of 107 consumers in the city of Ranchi, Jharkhand. Results indicate that flash sales and limited-time offers significantly and positively affect impulse buying behaviour ($R^2 = 0.504$, $p < 0.001$). The most powerful factor was Promotion/Discount Attractiveness, followed by Limited-Time Promotion Tools and Flash Sales Influence, suggesting that consumers are more affected by the value created by a promotion and its monetary benefit than by the promotional format itself. Impulse buying behaviour was not significantly altered by any demographic variable (gender, age, income, occupation or education), indicating that the promotional impact is broadly consistent across Ranchi’s consumer base. The study confirms that

flash sales and limited-duration promotions are effective and measurable drivers of impulsive purchasing in this tier-2 Indian market.

X. SUGGESTIONS

1. While BOGO is a strong motivator for impulse purchases, retailers should focus on messaging around monetary value and savings.

2. Promotional campaigns can target the broad consumer market, as impulse buying was not concentrated in any specific age group, gender or income group.

3. When using urgency messaging elements such as flash sales or countdown timers, retailers should also include value messaging elements, such as free gifts or coupons, to optimize conversion for impulse purchases.

4. Policymakers and consumer protection agencies should account for evidence-based understanding of how urgency-based promotion has a measurable impact on impulsive spending.

5. Companies expanding into tier-2 cities such as Ranchi should consider local consumer response patterns when planning marketing budgets and campaign timing.

XI. SCOPE FOR FUTURE RESEARCH

1. Future studies should use larger and more demographically balanced samples, especially including older and higher-income consumers.

2. Behavioural or experimental designs based on real purchase data, rather than self-reported attitudes, would more directly test the link between attitudes and behaviour.

3. Future work should include separate measures of psychological mediators, including Fear of Missing Out (FOMO), emotional arousal, and post-purchase regret.

4. A cross-city or cross-platform study would help determine whether these results generalize to other cities or platforms.

5. Future research could test product category effects (hedonic versus utilitarian) and adopt longitudinal designs to identify changes in repeat impulse buying across successive flash sales.

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