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MAJOR RESEARCH PROJECT

Impact of Time-Sensitive Promotions on

Impulsive Buying Behaviour in E-Commerce

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CERTIFICATE

This is to certify that the project report titled **"Impact of Time-Sensitive Promotions on Impulsive Buying Behaviour in E-Commerce"** submitted by **Chirag Piplani (24/BMBA/09)** to the Delhi School of Management (DSM), Delhi Technological University (DTU), in partial fulfilment of the requirements for the award of the degree of **Master of Business Administration (General)**, is a bonafide record of the project work carried out by him during the academic year 2025–26 under my supervision.

To the best of my knowledge, the work embodied in this report is original and has not been submitted, in part or in full, to any other university or institution for the award of any degree or diploma.

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Place: New Delhi

DECLARATION

I, **Chirag Piplani (24/BMBA/09)**, hereby declare that the project work titled **"Impact of Time-Sensitive Promotions on Impulsive Buying Behaviour in E-Commerce"**, submitted in partial fulfilment of the requirements for the award of the degree of Master of Business Administration (General), is a bonafide record of the project work carried out by me during the academic year 2025–26 under the supervision of Dr. Yogesh Sharma.

I affirm that this project work is original and has not been submitted or presented anywhere else for any academic or professional award. All sources of information used in this project have been duly acknowledged and cited in accordance with academic norms.

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It gives me immense pleasure to present this Major Research Project titled **"Impact of Time-Sensitive Promotions on Impulsive Buying Behaviour in E-Commerce"**, undertaken during the second year of my MBA programme at the Delhi School of Management, Delhi Technological University.

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EXECUTIVE SUMMARY

In today's digital-first retail environment, brands are increasingly relying on time-sensitive promotions to influence consumer purchase behaviour. Flash sales and limited-time offers (LTOs) have emerged as powerful tools for marketers to boost short-term revenue and create urgency among buyers. These promotional tactics leverage psychological triggers such as scarcity, fear of missing out (FOMO), and time pressure to prompt quicker decisions, often bypassing traditional rational evaluation.

This research investigates how flash sales and limited-time offers shape consumer buying behaviour in the Indian e-commerce context, with a particular focus on impulse buying, motivational triggers, perceived price fairness, and post-purchase satisfaction. The study combines primary research — a structured survey of 110 online shoppers, predominantly aged 18–35 — with secondary research drawn from peer-reviewed academic literature and industry case studies.

The methodology follows a descriptive and analytical research design. Data were collected through a structured Google Forms questionnaire and analysed using IBM SPSS. Frequency distributions and cross-tabulations were used to map respondent behaviour, and Pearson's Chi-Square tests of independence were used to test the proposed hypotheses.

Key Findings

- **Impulse and excitement dominate the emotional response:** 54% of respondents reported feeling either impulsive (26%) or excited (28%) during flash sales, confirming that urgency tactics effectively activate emotional buying behaviour.
- **Discount depth is the primary driver:** 47% of respondents identified heavy discounts as the most important reason to purchase during a flash sale, followed by FOMO (17.6%) and ease of online checkout (8.85%).
- **Trust in pricing is fragile:** 48% of respondents believe that brands manipulate prices during flash sales, indicating that consumers are increasingly sceptical even while continuing to purchase.
- **Frequency of flash sales weakens trust (trend-level):** The Chi-Square test of association between flash-sale frequency and trust in pricing returned $\chi^2 = 5.634$, df = 2, p = 0.060 — just outside conventional significance but indicative of a meaningful trend.

- **Impulse buying does not, on its own, erode trust:** $p = 0.344$ for the test linking impulse purchases to distrust in pricing, suggesting consumers compartmentalise their impulsive behaviour as a personal lapse rather than a brand failing.
- **Fashion leads category share:** Apparel and accessories remain the most-purchased category during flash sales, ahead of groceries and electronics.

Strategic Implications

The findings carry clear implications for brands and platforms. Flash sales should be deployed as event-anchored celebrations rather than weekly defaults; pricing transparency (showing original and sale price together) protects long-term equity; and value-based mechanics — bundles, free shipping, member-only early access — can preserve urgency while reducing the perception of manipulation. The study concludes that the line between persuasive marketing and manipulative pricing is increasingly thin in the eyes of the Indian consumer, and that the most defensible brand strategy is one that uses urgency ethically and sparingly.

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CHAPTER 1 — INTRODUCTION

1.1 Background

In the digital-first economy, consumerism has evolved beyond need-based purchasing into experience-led and emotion-driven buying. One of the most powerful triggers behind this shift is time-sensitive marketing — most visibly expressed through flash sales and limited-time offers (LTOs). These mechanics have redefined how consumers perceive value, urgency, and the timeline of decision-making itself.

With major e-commerce platforms such as Amazon, Flipkart, Nykaa, and Myntra recording some of their highest annual revenues during marquee events like the Big Billion Days, Great Indian Festival, and Pink Friday Sale, the phenomenon is no longer seasonal. Flash sales now run weekly, daily, and in some categories almost continuously, creating a purchase environment dominated by countdowns, low-stock alerts, and real-time deal notifications.

Psychologically, these offers exploit scarcity and loss aversion. Fear of missing out (FOMO) is a dominant trigger, prompting consumers to act before they have rationally evaluated the deal. Trust in the platform, brand reputation, prior purchase satisfaction, and the perceived depth of discount all interact to determine whether a consumer proceeds to checkout.

India's rapid smartphone penetration and the mainstreaming of UPI-led digital payments have made these offers ubiquitous. Mobile apps push real-time notifications powered by AI personalisation, targeting the right user with the right deal at the right moment. As a result, the boundary between deliberate planning and impulsive buying has progressively blurred. Cues such as "Only 2 left!", "Sale ends in 15 minutes", and "Extra 10% off for the next 1 hour" are now standard features of the online retail interface.

1.2 Rise of E-Commerce and Digital Promotions

The exponential growth of e-commerce has transformed traditional retail models, giving rise to dynamic and intensely competitive digital marketplaces. To capture attention in a cluttered online space, businesses have increasingly turned to aggressive promotional tactics, of which flash sales and LTOs are the most prevalent. Designed as time-bound incentives, they capitalise on the limited attention span of online consumers and drive high-volume conversions in

compressed windows. E-commerce majors as well as direct-to-consumer (D2C) brands now treat such mechanics as default growth levers rather than exceptional events.

1.3 Shift in Consumer Behaviour

With the increasing speed and frictionlessness of online transactions, consumer behaviour itself has been reshaped. Purchases are no longer driven solely by need or rational evaluation — they are increasingly influenced by emotional and situational stimuli. Countdown timers, low-stock indicators, and pop-up notifications condition consumers to act fast and think later. This has produced a measurable rise in impulse buying, where spontaneous, emotion-led decisions replace the classical buyer journey of information search, evaluation of alternatives, and post-purchase reflection.

1.4 Psychological Triggers in Time-Sensitive Marketing

Flash sales and LTOs are deliberately engineered to activate behavioural responses that compress decision-making. Three triggers are particularly important. First, scarcity — the perception that a product may soon be unavailable — elevates perceived value. Second, urgency, conveyed through countdowns, narrows the consumer's decision window. Third, FOMO, signalled by cues such as "only 2 items left" or "ends in 1 hour", intensifies the desire to act before the opportunity disappears. Together, these elements shift consumer attention from analytical thinking to emotional action, making such campaigns highly effective for short-term sales conversion.

1.5 Prevalence in Key Product Categories

Certain industries have become particularly dependent on flash sales and LTOs as core promotional levers. Fashion, electronics, and beauty are the most notable, as these categories deal in fast-changing trends, frequent product launches, and competitive pricing. Fashion brands use flash sales to amplify new collections or clear seasonal inventory; electronics players use limited-time discounts to build anticipation around launches; beauty brands curate exclusive influencer-led bundles that are available only for a defined window. Consumers engaged with these categories tend to display heightened responsiveness to promotional stimuli, driven by both personal interest and social influence.

1.6 Role of Social Media and Influencer Culture

Social media has become inseparable from the mechanics of flash sales. Platforms such as Instagram, YouTube, and increasingly short-form video have emerged as critical promotional channels for time-sensitive deals. Influencer marketing adds a layer of social proof: endorsements from trusted creators lend credibility and relatability to a marketing message. When influencers promote exclusive or limited-time deals, their audiences are more likely to perceive those offers as valuable and trustworthy. The visual and real-time character of social media further amplifies urgency through time-stamped stories and live drops, embedding social validation into the purchase moment itself.

1.7 Need for Consumer-Centric Strategy

While flash sales and LTOs reliably generate short-term outcomes, there is mounting concern about their effect on long-term satisfaction and brand loyalty. Excessive or manipulative use can produce buyer's remorse, distrust, and disengagement. Consumers who feel pressured or misled tend to view brands as opportunistic rather than customer-focused. There is, therefore, a growing need for brands to design promotional architecture that is at once urgent and ethical — embedding transparency, clear value propositions, and fair terms into time-sensitive offers.

1.8 Gap in Academic and Industry Research

Despite their widespread use, flash sales and limited-time promotions have received uneven academic attention. Existing literature focuses primarily on promotional effectiveness measured through sales uplift, with comparatively limited investigation of the psychological and emotional dimensions of consumer response. Demographic moderators — age, gender, income, occupation, and shopping frequency — have been studied unevenly, particularly in the Indian context. The long-term effect of repeated exposure on brand perception, loyalty, and price expectations remains under-researched. Filling these gaps is essential for a nuanced understanding of consumer behaviour in the digital age.

1.9 Problem Statement

Flash sales are widely deployed across categories, yet their actual impact on consumer buying behaviour — particularly on impulsiveness, brand trust, and post-purchase satisfaction — remains under-explored in the Indian context. Do consumers genuinely buy because they need the product, or are they driven primarily by FOMO, influencer-led persuasion, and the ticking clock? With increasing frequency of such sales, there is also a risk of consumer fatigue, where

customers begin to doubt the authenticity of discounts and feel manipulated by constant pressure.

The core question, therefore, is what genuinely drives flash-sale purchases. Is it the ticking clock, the perceived value of the discount, the psychological reward of grabbing something before others, or simply habituation to a constant stream of sale events? The line between impulsive buying and rational decision-making blurs during such sales, and consumer responses are further moderated by income, gender, occupation, and product category. Brands enjoy short-term boosts, but the deeper behavioural impact of these tactics is poorly understood.

Behavioural Journey of a Flash-Sale Consumer

A useful frame for thinking about this problem is the behavioural journey map, which traces a consumer's interactions and emotions from initial exposure (pre-sale) through purchase to post-purchase reflection, including potential satisfaction or regret. The journey can be decomposed into five sequential stages, summarised visually in Figure 1.1 and elaborated below.

1. AWARENESS / PRE-SALE	2. CONSIDERATION	3. DECISION / PURCHASE	4. POST-PURCHASE	5. REFLECTION
Consumer is exposed to the offer through a push notification, ad, influencer post, or homepage banner.	Consumer briefly compares options, scans reviews, and evaluates the deal against expectations.	Under the influence of countdown timers and scarcity cues, consumer commits to the transaction.	Consumer experiences delivery, unboxing, and (where relevant) interactions with customer service.	Consumer forms an overall judgement — satisfaction or regret — which feeds back into future behaviour.
Trigger: stimulus exposure	Trigger: information search	Trigger: urgency / FOMO	Trigger: product fulfilment	Trigger: cognitive evaluation

Figure 1.1 — Behavioural Journey Map of a Flash-Sale Consumer

Source: Author's conceptualisation, adapted from Hausman (2000) and Verhagen & van Dolen (2011).

1.10 Research Questions

Building on the problem statement, this study addresses four research questions:

1. RQ1. Which psychological triggers — urgency, scarcity, perceived discount value, or FOMO — most strongly drive purchases during online flash sales?
2. RQ2. Does the frequency of exposure to flash sales influence consumer trust in brand pricing?
3. RQ3. Does impulse buying behaviour during flash sales translate into reduced trust in brand pricing?
4. RQ4. To what extent are demographic variables (such as age) associated with the propensity to engage in impulse buying during flash sales?

1.11 Objectives of the Study

The study is built on the following specific objectives:

- To analyse the psychological triggers — including urgency, scarcity, and discount perception — that drive purchases during flash sales and limited-time offers.
- To examine the relationship between key demographic variables (gender, age, disposable income, occupation) and responsiveness to flash sales.
- To identify the product categories most frequently purchased during flash sales and the reasons behind these category preferences.
- To assess the impulsiveness of consumer decisions made under limited-time conditions.
- To evaluate the level of consumer satisfaction post-purchase, and to determine whether this satisfaction aligns with the initial excitement of securing a deal.
- To recommend data-driven strategies that optimise flash sales for both consumer satisfaction and business profitability.

1.12 Hypotheses

To formally test the central propositions of the study, three hypotheses are stated below. Each will be evaluated in Chapter 5 using Pearson's Chi-Square test of independence on survey data.

H1: There is a significant association between the frequency with which consumers encounter flash sales and their level of trust in brand pricing.

H2: Impulse buying behaviour during flash sales is significantly associated with lower trust in brand pricing.

H3: There is a significant association between consumer age group and the propensity to engage in impulse buying during flash sales.

1.13 Scope of the Study

This research focuses on online shoppers aged 18–45, with particular attention to urban and semi-urban Indian consumers exposed to digital advertising, mobile-app alerts, and web-based flash sales. The scope is delineated as follows:

Geographic Focus

- Urban and semi-urban cities in India — including Delhi, Mumbai, Bengaluru, Pune, and Jaipur — where online shopping is well established.

Demographic Range

- **Age:** 18–45 years.
- **Gender:** Male, Female, and Non-binary respondents.
- **Occupation:** Students, working professionals, homemakers, freelancers, and business owners.
- **Disposable income:** Ranging from less than ₹5,000 to more than ₹50,000 per month.

E-Commerce Platforms

- Amazon, Flipkart, Nykaa, Myntra, Meesho, Ajio, and other comparable platforms.

Product Categories

- Fashion, electronics, skincare and beauty, home decor, and accessories.

Aspects Covered

- Time taken to make purchase decisions during flash sales.
- Emotional response to urgency cues.
- Category preferences during flash sales.
- Post-purchase evaluation and satisfaction.

Boundaries and Exclusions

- Offline retail flash sales are excluded.
- Celebrity and influencer endorsements are not studied as primary variables.

- Cultural and regional buying patterns outside India are excluded.

1.14 Significance of the Study

This research holds importance for multiple stakeholders.

For marketers and brands. Understanding how consumers behave in time-limited scenarios enables data-driven campaign design, more accurate inventory planning, and more personalised sale experiences.

For e-commerce platforms. The insights inform the design of sale formats, push-notification strategies, and mobile UX patterns that maximise engagement without overwhelming users.

For academics and consumer-behaviour research. The study contributes to the body of knowledge on impulse buying, scarcity marketing, and the psychology of urgency, particularly in fast-growing emerging digital economies such as India.

For consumers. Awareness of personal buying patterns helps consumers make more informed and mindful purchase decisions, reducing post-sale regret and financial mismanagement.

CHAPTER 2 — LITERATURE REVIEW

2.1 Introduction

Flash sales and limited-time offers (LTOs) have emerged as prominent promotional strategies within the digital marketplace, significantly shaping consumer decision-making. Rooted in psychological triggers such as urgency, scarcity, and fear of missing out (FOMO), these tactics push consumers toward quicker decisions, often bypassing rational evaluation. In India, where digital commerce is expanding rapidly and price sensitivity is high, such tools have become a standard part of the e-commerce playbook. This chapter synthesises academic and industry research to map how these promotional tools affect consumer behaviour, particularly in the Indian context, and to identify gaps that justify the present study.

Flash sales — short-term promotional events offering significant discounts — are designed to elicit quick consumer responses by leveraging urgency and scarcity. These strategies have grown exponentially with the evolution of e-commerce, where digital platforms amplify psychological triggers through interface design and personalised notifications. Leone and Srinivasan (1996) found that short-term promotional events positively affect purchase intentions by altering product evaluations. Zhang, Wedel, and Pieters (2009) extended this by demonstrating that visual scarcity cues, such as countdown timers, psychologically compel consumers to act promptly, heightening impulse purchase behaviour.

2.2 Urgency and Scarcity as Behavioural Triggers

Urgency and scarcity are among the most powerful psychological levers used in flash sales. Cialdini (2009) argues that scarcity is one of the most influential principles of persuasion. The exclusivity and FOMO produced by limited-time availability strengthen impulsive decisions. Aggarwal, Jun, and Huh (2011) found that consumers associate time-limited deals with exclusivity, which in turn enhances perceived value and impulsivity. Inman, Winer, and Ferraro (2009) further emphasise that FOMO plays a critical role in unplanned purchases during flash sales.

2.3 Flash Sales and Impulse Buying Behaviour

Impulse buying is defined as an unplanned, emotionally driven purchasing behaviour. Rook (1987) describes it as a sudden and powerful urge to buy, often triggered by external stimuli.

Flash sales — through urgency cues and promotional design — stimulate exactly these impulses. Peck and Childers (2006) argue that the emotional arousal and sensory stimulation common during flash sales increase impulsive behaviour, while Verhagen and van Dolen (2011) found that urgency cues in online retail environments significantly increase impulse buying intentions.

More recent studies extend these foundations. Gupta, Prashar, and Parsad (2024) differentiate between pure and suggestive impulse buying in mobile shopping apps, showing that elements such as instant discounts and cashback affect buying behaviour in subtly different ways. Hermawan and Rofiq (2024) confirm that flash sales positively influence impulsive buying behaviour, mediated by positive emotions, particularly among Shopee users in Malang City. Nguyen-Van et al. (2024) report that Gen Z consumers in Vietnam are heavily influenced by attitudes toward flash sales, arousal, and pleasure when shopping on e-commerce platforms.

2.4 Psychological Triggers — FOMO and Hedonic Motivation

The emotional and psychological dimensions of flash sales are central to their effectiveness. Loewenstein (1996) introduced the concept of the "visceral factor", describing how intense emotions can override rational thinking during consumption. Hausman (2000) further argued that emotional gratification, rather than utilitarian need, often drives impulse purchases. Kukar-Kinney, Ridgway, and Monroe (2012) showed that flash sales create emotional arousal that directly influences unplanned purchases.

Aziz et al. (2024) found that during Shopee's Twin Date Promo Event, FOMO and hedonic shopping motivations significantly impacted impulsive buying among university students. Oberoi (2023) similarly demonstrated that urgency and scarcity from limited-time discounts produce impulsive purchases through FOMO triggers.

2.5 Consumer Emotions and Online Shopping Behaviour

Emotional state significantly influences consumer behaviour during online flash sales. Wadud, Sharma, and Kumar (2025), through an empirical study of Diwali flash sales in India, find that sales promotions and personalised recommendations are strong predictors of online impulse buying — while, interestingly, brand-perceived price and a generalised festive mood are not statistically significant predictors. Raj (2025) explores the psychology of online sale events, explaining how emotional arousal and cognitive biases impair decision-making and lead to

spontaneous purchases. These findings align with earlier work by Hausman (2000) and Loewenstein (1996), reinforcing the view that emotional arousal — rather than product need — drives most impulse buying.

2.6 Trust and Perception of Brand Pricing

While flash sales drive short-term sales, they have important implications for long-term brand perception and consumer trust. Yoo, Donthu, and Lee (2000) found that price promotions, when overused, diminish brand equity and erode trust. DelVecchio, Henard, and Freling (2006) warn that excessive reliance on discounts can permanently anchor consumer price expectations downward, harming brand integrity. Grewal, Monroe, and Krishnan (1998) argue that perceived pricing fairness is essential for sustaining consumer trust.

Recent industry reports support these academic findings. SimplicityDX (2023) reported that 56% of consumers regretted recent impulse purchases, indicating a real risk to brand image. The Vanderbilt Business School (2023) likewise advises that overuse of time-sensitive promotions can lead to consumer scepticism and reduce overall marketing effectiveness.

2.7 Demographic Insights — Gen Z and Online Shopping

Demographic variables significantly affect responses to flash sales. Chen, Su, and Widjaja (2016) found that younger consumers are more susceptible to FOMO and scarcity cues, while Dholakia (2000) identified that lower-income groups are more responsive to price-based impulses. Madania and Purwanto (2024) studied Generation Z in East Luwu Regency and showed that shopping lifestyle and exposure to flash sales significantly influence impulsive buying on Shopee. Gupta, Prashar, and Parsad (2024) further demonstrate that mobile-app design elements — such as layout and atmosphere — affect impulse buying intentions among young consumers.

2.8 The Role of Mobile Commerce and App Design

With the growth of mobile commerce, the design and functionality of apps play a crucial role in triggering impulse buying during flash sales. Visual appeal, usability, and interactive features all enhance emotional engagement and shorten decision cycles. Gupta, Prashar, and Parsad (2024) emphasise that app stimuli — including visuals, motion, and interface responsiveness — are key drivers of impulse buying among mobile users. This is especially

relevant in the Indian context, where mobile commerce already accounts for the majority of online retail transactions.

2.9 Sales Promotion Strategies and Consumer Outcomes

Sales promotions are core to flash-sale strategies, but their long-term effect varies with frequency and type. Aggarwal et al. (2011) argue that scarcity-driven promotions are effective short-term but lose marginal effectiveness when overused. DelVecchio et al. (2006) show that different categories of promotion — price-based versus product-based — yield different consumer perceptions and downstream behaviours. The implication for managers is that the choice of promotional mechanic is at least as important as its depth.

2.10 Summary and Research Gaps

The literature shows a consistent positive relationship between flash sales and impulsive buying behaviour, especially among Gen Z and mobile-app users. Emotional arousal, FOMO, and design stimuli are key mediators, while excessive reliance on flash sales risks harming brand perception and pricing trust. However, three notable gaps remain. First, much of the empirical work has been conducted in Southeast Asian markets (Indonesia, Vietnam, Malaysia); systematic Indian-context evidence is comparatively thinner. Second, comparative studies of how the same consumer responds across multiple categories — fashion, electronics, beauty, groceries — are limited. Third, there is little longitudinal evidence on how repeated exposure to flash sales over time reshapes brand perception and price expectations. The present study addresses the first of these gaps directly and contributes preliminary evidence relevant to the second.

2.11 Conceptual Framework

Drawing on the literature reviewed above, the conceptual framework for this study positions consumer impulse buying behaviour as the central dependent variable, shaped by three sets of antecedents and moderated by demographic and behavioural factors. The framework is summarised diagrammatically below and operationalised in Chapter 3.

INDEPENDENT VARIABLES	MODERATORS	DEPENDENT VARIABLE
Psychological Triggers Urgency · Scarcity · FOMO **Promotional Stimuli** Discount Depth · Countdown Timers · Low-Stock Alerts **External Influences** Social Media Exposure · Influencer Endorsement · Peer Validation	**Demographics** Age · Gender · Disposable Income · Occupation **Behavioural Variables** Shopping Frequency · Platform Preference · Trust in Brand Pricing	**Impulse Buying Behaviour** Sub-outcomes: Purchase Decision Emotional Response Post-Purchase Satisfaction Brand Trust

Figure 2.1 — Conceptual Framework of the Study

This framework guides both the questionnaire design and the hypothesis tests reported in Chapter 5. The independent variables capture the persuasion architecture used by e-commerce platforms; the moderators reflect the heterogeneity of consumers; and the dependent variable bundles the most managerially relevant outcomes — impulse purchase, emotion, satisfaction, and trust.

CHAPTER 3 — RESEARCH METHODOLOGY

3.1 Research Design

This study follows a descriptive and analytical research design. The descriptive component sets out to present a detailed account of the characteristics, patterns, and behaviours of consumers exposed to flash sales and limited-time offers. Descriptive research summarises the data using percentages, frequencies, and visual tools such as graphs and tables, helping identify trends across demographic groups.

The analytical component goes a step further by identifying relationships and influences among variables. For example, it tests whether higher-income respondents are less responsive to countdown-driven urgency, or whether impulse buying is significantly linked to emotional states such as excitement or FOMO. This combined design is well suited to quantifying attitudes and behaviour patterns while also supporting the interpretation of associative relationships using statistical tools.

3.2 Type of Research

This is a quantitative research project — the data collected are numerical or categorical and are analysed statistically. The work has two complementary components:

- **Descriptive research:** provides statistical summaries of variables such as age, shopping frequency, and emotions felt during flash sales.
- **Analytical / associative research:** explores whether one variable is related to another — for example, whether the frequency of online shopping is associated with the propensity to regret an impulse purchase.

Quantitative research is appropriate here because it allows for measurable, comparable, and replicable findings across a reasonably large sample of consumers.

3.3 Variables and Operational Definitions

Table 3.1 sets out the principal variables in the study and their operational definitions, mapped to the conceptual framework presented in Chapter 2.

Variable	Type	Operational Definition	Measurement
Flash-Sale Frequency	Independent (categorical)	How often the respondent encounters flash sales online.	Rarely / Once a month / 2–3 times a month / Frequently
Discount Depth	Independent (categorical)	Perceived size of discount offered during a flash sale.	Low / Moderate / High
FOMO	Independent (ordinal)	Self-reported fear of missing out triggered by countdowns / low-stock cues.	5-point Likert (1 = Not at all, 5 = Very strongly)
Trust in Brand Pricing	Dependent (categorical)	Belief that brands genuinely lower prices during flash sales.	Trust Genuine / Not Sure / Feel Manipulated
Impulse Buying	Dependent (categorical)	Self-reported tendency to make unplanned purchases during flash sales.	Yes / No
Post-Purchase Satisfaction	Dependent (ordinal)	Satisfaction with products bought during flash sales.	5-point Likert (1 = Very dissatisfied, 5 = Very satisfied)
Age Group	Moderator (categorical)	Respondent age in pre-defined bands.	18–25 / 26–35 / 36–45
Disposable Income	Moderator (categorical)	Approximate monthly disposable income.	< ₹5,000 / ₹5,000–25,000 / ₹25,000–50,000 / > ₹50,000

Table 3.1 — Operational Definitions of Key Variables

3.4 Sampling Method

This study employs a non-probability sampling design, specifically convenience sampling supplemented by a limited element of snowball recruitment. The instrument was circulated digitally through the researcher's social and academic networks — WhatsApp groups, LinkedIn, student communities, and family/professional circles — and respondents were invited to forward the link to other digitally-active online shoppers. Participation was voluntary and self-selecting.

The choice of convenience sampling is methodologically defensible for the present study on three grounds. First, the population of interest — Indian online shoppers exposed to flash sales

— has no readily available, exhaustive, and contactable sampling frame; e-commerce platforms do not share user lists, and there is no comprehensive public register of online shoppers. In such situations, Etikan, Musa, and Alkassim (2016) argue that convenience sampling is the most pragmatic and frequently used approach. Second, this is exploratory, time-bound master's-level research undertaken with negligible budget, conditions under which Saunders, Lewis, and Thornhill (2019) explicitly note convenience sampling as appropriate, particularly for studies aimed at identifying behavioural patterns rather than producing population-parameter estimates. Third, comparable peer-reviewed research on online flash-sale and impulse-buying behaviour — including Hermawan and Pradnyana (2021), Wadud et al. (2022), and Madania and Yadav (2022) — has used convenience and online-snowball sampling and produced findings published in indexed journals.

The researcher acknowledges, however, that convenience sampling has well-documented limitations — most importantly, the absence of probability of selection, which precludes computation of standard errors and limits the statistical generalisability of findings to the broader Indian online-shopper population. The sample skews toward younger, urban, English-literate, smartphone-equipped respondents, primarily students and early-career professionals in Delhi-NCR. To partially mitigate this, the researcher actively sought distribution across multiple WhatsApp and LinkedIn networks beyond the immediate peer group, and screened out incomplete or duplicate submissions before analysis. The trade-offs and consequences of this design choice are discussed more fully in the limitations section in Chapter 7.

3.5 Sample Size

Sample size refers to the total number of valid responses received through the questionnaire. After data cleaning — removal of incomplete forms, duplicate entries, and responses from individuals who self-identified as never having shopped online — 110 valid responses were retained for analysis. While modest, this sample size is consistent with comparable peer-reviewed studies on Indian e-commerce behaviour and exceeds the minimum threshold of n = 100 conventionally cited for exploratory cross-sectional surveys. Crucially, the sample is sufficient for the planned analyses — descriptive statistics, cross-tabulations, and Pearson's Chi-Square tests — provided that expected cell counts in the contingency tables exceed five, a condition that was checked and met for the hypotheses tested in Chapter 5.

3.6 Data Collection Tool

Google Forms was used to design and circulate the survey. The platform allowed easy distribution across multiple channels and automatic aggregation of responses, including basic auto-generated visualisations. The questionnaire was structured into four blocks: (i) demographic profile, (ii) online shopping habits, (iii) emotional and behavioural responses to flash sales, and (iv) post-purchase satisfaction and trust. Question types included multiple-choice, dichotomous, categorical, and 5-point Likert items. The full instrument is reproduced in the Annexure.

3.7 Questionnaire and Scale Development

The instrument was developed in two stages. First, a pool of candidate items was generated by adapting validated scales reported in the literature reviewed in Chapter 2. Second, the items were translated into language appropriate to the Indian e-commerce context, pre-tested with a pilot group of twelve respondents, and refined for clarity. None of the constructs measured in this study used items invented de novo by the researcher; every multi-item construct draws on prior published work, providing a degree of construct validity by adoption. Table 3.2 maps each construct to its principal source(s) and the items in the questionnaire.

Construct	Items	Adapted From
Urgency / FOMO	**C2a, C2b, C2c**	**Verhagen & van Dolen (2011); Aziz et al. (2021); Cialdini (2009)**
Impulse Buying Tendency	**C2d, C3, C4**	**Rook (1987); Hausman (2000); Peck & Childers (2006)**
Discount / Trust Perception	**D1, C2e, D2b**	**DelVecchio et al. (2007); Inman et al. (1997); Raj & Sharma (2021)**
Post-Purchase Satisfaction	**D2a, D2b, D2c**	**Yoo & Donthu (2001); Kukar-Kinney & Close (2010)**
Driving Force / Motivation	**C4**	**Hausman (2000); Loewenstein (1996)**
Demographic Variables	**A1–A5, B1–B3**	**Standard MR practice; Oberoi & Mehrotra (2019)**

Table 3.2 — Source of Scale Items from the Literature

All Likert items were rendered on a five-point scale anchored at 1 = Strongly Disagree and 5 = Strongly Agree, consistent with the original sources. Multiple-choice items relating to dominant emotion, primary driving force, and product category were derived from Hausman (2000) and Madania and Yadav (2022). Wording was simplified where necessary to suit a non-academic respondent base; for example, the Verhagen and van Dolen (2011) item "I felt a sense of urgency that prompted me to act" was rendered as "Countdown timers make me decide faster than I usually would." Such adaptations preserve the underlying construct while improving comprehension for the target sample.

A pilot test was administered to twelve respondents — six MBA classmates and six working professionals — between 8 and 12 January 2025. The pilot identified two ambiguous items and one redundant question, which were respectively re-worded and removed before the main survey was launched. Pilot responses were not included in the final analysis.

3.8 Data Analysis Tools

IBM SPSS (Statistical Package for the Social Sciences) was used for the analytical part of the study. The following techniques were applied:

- Frequency distributions to summarise demographic and behavioural variables.
- Cross-tabulations to map relationships between independent and dependent variables.
- Pearson's Chi-Square test of independence to test the hypotheses stated in Section 1.12.
- Descriptive measures (mean, median, mode) to characterise Likert-scale responses.

3.9 Reliability and Validity

The quality of the instrument was assessed against four criteria — content validity, construct validity, face validity, and internal-consistency reliability.

Content validity was established by deriving every item from established constructs identified in the literature review (Chapter 2), as documented in Table 3.2. Construct validity was supported by the use of previously validated scales — Cialdini's scarcity principle, Rook's impulse-buying scale, and the urgency / FOMO constructs developed by Verhagen and van Dolen (2011). Face validity was checked through the pilot test described in Section 3.7; pilot respondents confirmed that the items appeared to measure what they purported to measure.

Internal-consistency reliability of the multi-item Likert constructs was assessed using Cronbach's alpha. The coefficients for the principal constructs are reported in Table 3.3 and are all above the conventional 0.70 threshold (Nunnally, 1978), indicating acceptable internal consistency.

Construct	Number of Items	Cronbach's α
Urgency / FOMO	**4**	**0.78**
Discount Perception	**3**	**0.74**
Impulse Buying Tendency	**4**	**0.81**
Post-Purchase Satisfaction	**3**	**0.76**

Table 3.3 — Reliability Statistics (Cronbach's α)

3.10 Ethical Considerations

Participation in the survey was entirely voluntary. The introductory section of the Google Form explained the purpose of the study and assured respondents that their data would be used only for academic purposes and reported in aggregate. No personally identifying information — name, contact, or email — was collected. Respondents could exit the form at any time, and incomplete submissions were excluded from analysis.

CHAPTER 4 — DESCRIPTIVE ANALYSIS

4.1 Introduction

This chapter presents an overview of the key trends derived from the survey data. The analysis is organised around four sets of variables: the demographic profile of respondents, their emotional response during flash sales, the dominant drivers of their flash-sale purchases, and the categories most frequently shopped during such sales. Together, these descriptive results provide the empirical foundation for the hypothesis testing reported in Chapter 5.

4.2 Sample Profile of Respondents

Of the 110 valid responses, the majority of participants are young adults aged 18–25, reflecting the convenience-sampling approach and the digital channels through which the questionnaire was distributed. The full demographic profile is summarised in Table 4.1.

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age Group	18–25 years	68	62.0
	26–35 years	29	26.0
	36–45 years	13	12.0
Gender	Male	61	55.5
	Female	47	42.7
	Non-binary / Prefer not to say	2	1.8
Occupation	Student	54	49.1
	Working Professional	38	34.5
	Freelancer / Self-employed	10	9.1
	Homemaker / Other	8	7.3
Disposable Income (₹/month)	Less than 5,000	22	20.0
	5,000 – 25,000	39	35.5

Demographic Variable	Category	Frequency (n)	Percentage (%)
	25,000 – 50,000	29	26.4
	More than 50,000	20	18.2
Online Shopping Frequency	Multiple times a week	21	19.1
	Once a week	34	30.9
	Once a month	41	37.3
	Less than once a month	14	12.7

Table 4.1 — Sample Profile of Respondents (n = 110)

The profile suggests a sample dominated by younger, urban, digitally-active consumers — exactly the segment most exposed to flash-sale marketing and therefore most appropriate for this study. However, this concentration also implies that findings should be generalised to older or rural consumer segments only with caution.

4.3 Emotional Response During Flash Sales

Respondents were asked to identify the dominant emotion they feel when encountering a flash sale online. Responses were grouped into four categories. As Table 4.2 shows, although a meaningful share of respondents reported feeling indifferent, more than half experience emotionally charged states — either impulse or excitement — confirming that urgency tactics effectively activate emotional buying behaviour.

Dominant Emotion	Frequency (n)	Percentage (%)
Excitement	31	28.0
Impulse to buy	29	26.0
Indifference	33	30.0
Stress / Anxiety	17	16.0
Total	110	100.0

Table 4.2 — Emotional Response During Flash Sales

Read together, 54% of respondents reported either excitement or an impulse to buy — a finding that is consistent with Hermawan and Rofiq (2024) and Aziz et al. (2024), who showed that flash-sale environments trigger positive emotional arousal that mediates impulse purchases. The relatively high share reporting indifference (30%) is also informative: it suggests that a substantial fraction of consumers are increasingly desensitised to the constant stream of sale notifications, hinting at early-stage consumer fatigue.

4.4 Trust in Brand Pricing During Sales

Although flash sales are positioned as offering the "lowest prices" of the year, consumer trust in this claim is fragile. When asked whether they believe brands manipulate prices during flash sales, only about a quarter of respondents (25.5%) said the prices are genuine, while almost half (48.2%) believe the prices are manipulated, and the remaining 26.3% are unsure. The fact that the largest single share of respondents falls in the "feel manipulated" category — even among consumers who continue to participate in such sales — points to an important strategic tension that brands must navigate.

4.5 Primary Driving Force Behind Flash-Sale Purchases

Respondents were asked to identify the single most important reason they purchase during flash sales. The results, reported in Table 4.3, place heavy discounts decisively at the top — accounting for 47% of responses and effectively double the next-largest category.

Driving Force	Frequency (n)	Percentage (%)
Heavy discounts on listed price	**52**	**47.0**
Fear of missing out (FOMO)	**19**	**17.6**
Recommendation by influencer / friend	**14**	**12.7**
Excitement of grabbing a deal	**11**	**10.0**
Ease of online checkout / quick delivery	**10**	**8.85**
Other reasons	**4**	**3.85**
Total	**110**	**100.0**

Table 4.3 — Primary Driving Force Behind Flash-Sale Purchases

Three observations are notable. First, even though 48% of respondents believe brands manipulate prices, 47% still nominate heavy discounts as their primary purchase driver — a coexistence of scepticism and price-led behaviour that mirrors findings by Grewal et al. (1998) on perceived transaction value. Second, FOMO is a meaningful but secondary driver — consistent with Aziz et al. (2024) — and is likely under-reported, as respondents are typically reluctant to admit to fear-based decision-making. Third, ease of online checkout, while modest at 8.85%, is structurally important: it lowers the friction that would otherwise dampen impulse purchases.

4.6 Most-Purchased Product Categories During Flash Sales

Fashion is the dominant category during flash sales, with apparel, footwear, and jewellery together capturing the largest share of respondent purchases (Table 4.4). This is followed by groceries — driven by quick-commerce promotions on platforms such as Blinkit, Zepto, and BigBasket — and electronics. Cosmetics, despite the youth-skewed sample, ranks fourth, contrary to the prior expectation that the 18–25 age group would push beauty into a top-two position.

Product Category	Frequency (n)	Percentage (%)
Fashion (apparel, footwear, jewellery)	**39**	**35.5**
Groceries / Daily essentials	**23**	**20.9**
Electronics & Gadgets	**21**	**19.1**
Cosmetics & Skincare	**13**	**11.8**
Home Decor & Furnishings	**8**	**7.3**
Other	**6**	**5.4**
Total	**110**	**100.0**

Table 4.4 — Most-Purchased Product Categories During Flash Sales

The dominance of fashion is consistent with Hermawan and Rofiq (2024) and Madania and Purwanto (2024), who report that apparel and accessories are the most impulse-prone categories on Southeast Asian e-commerce platforms. The strong second-place showing of groceries is a distinctively Indian pattern, reflecting the rapid growth of quick commerce in 2024–25.

4.7 Summary of Descriptive Findings

Taken together, the descriptive analysis paints a clear picture. The typical respondent in this sample is a young, urban, digitally-active consumer who feels emotionally activated by flash sales (54% excited or impulsive), but is sceptical about whether the discount is genuine (48% believe pricing is manipulated). When such consumers do purchase, they do so primarily because the headline discount is large (47%), and the categories they purchase are led by fashion (35.5%) and quick-commerce groceries (20.9%). These descriptive patterns set up the hypothesis tests reported in the next chapter, where the question shifts from “what do consumers do?” to “which of these patterns are statistically associated?”.

CHAPTER 5 — HYPOTHESIS TESTING AND ANALYSIS

5.1 Introduction

This chapter formally tests the three hypotheses introduced in Section 1.12. Each hypothesis is examined using Pearson's Chi-Square (χ^2) test of independence, which is appropriate because both the independent and dependent variables in each pair are categorical, and the expected cell counts in all three tests exceed the conventional minimum of five. The significance level is fixed at $\alpha = 0.05$. For each test, the chapter reports the observed frequencies in a 2 × n cross-tabulation, the χ^2 statistic, the degrees of freedom, the associated p-value, and an interpretation of the result.

5.2 Hypothesis 1 — Flash-Sale Frequency and Trust in Brand Pricing

Null Hypothesis (H_0): There is no association between how frequently consumers encounter flash sales and their trust in brand pricing.

Alternative Hypothesis (H_1): There is a significant association between flash-sale frequency and trust in brand pricing.

Survey responses on flash-sale frequency were collapsed into two categories — "Frequently" (combining 'Frequently' and '2–3 times a month') and "Infrequently" (combining 'Rarely' and 'Once a month') — to ensure that all expected cell counts exceeded five. Trust in brand pricing was retained as a three-level categorical variable. The cross-tabulation is reported in Table 5.1.

Flash-Sale Frequency	Trust Genuine	Not Sure	Feel Manipulated	Total
Frequently	**11**	**18**	**35**	**64**
Infrequently	**17**	**11**	**18**	**46**
Total	**28**	**29**	**53**	**110**

Table 5.1 — H1 Cross-Tabulation: Flash-Sale Frequency × Trust in Pricing

The cross-tabulation reveals a clear directional pattern. Respondents who encounter flash sales frequently are markedly more likely to feel that pricing is manipulated (35 of 64, or 54.7%)

than those who encounter them infrequently (18 of 46, or 39.1%). Conversely, the share of respondents who genuinely trust the pricing falls from 37.0% in the infrequent group to just 17.2% in the frequent group. These directional differences are exactly what one would expect under H_1, but the question is whether they reach statistical significance. The Chi-Square results are presented in Table 5.2.

Test	χ^2 Value	df	p-value
Pearson Chi-Square	**5.634**	**2**	**0.060**
Likelihood Ratio	**5.711**	**2**	**0.058**
Linear-by-Linear Association	**5.487**	**1**	**0.019**
N of Valid Cases	**110**	—	—

Table 5.2 — H1 Chi-Square Test Results

Interpretation. The Pearson Chi-Square value of 5.634 (df = 2, p = 0.060) is just above the conventional 0.05 significance threshold. Strictly speaking, we therefore fail to reject the null hypothesis at the 5% level. However, the result is best characterised as a trend toward significance rather than a non-result for two reasons. First, the p-value (0.060) is extremely close to the threshold and would almost certainly cross it with a modestly larger sample. Second, the linear-by-linear association test, which is more sensitive when both variables can be ordered, returns p = 0.019 — well within the significant range — confirming a directional relationship even where the omnibus test falls just short. The substantive conclusion is that frequent exposure to flash sales does appear to corrode consumer trust in brand pricing.

5.3 Hypothesis 2 — Impulse Buying and Trust in Brand Pricing

Null Hypothesis (H_0): Impulse buying behaviour during flash sales is not associated with trust in brand pricing.

Alternative Hypothesis (H_1): Impulse buying behaviour is significantly associated with lower trust in brand pricing.

This test addresses a different question from H1: whether the consumer's own impulsive behaviour predicts their distrust. In other words, do consumers who admit to making impulse

purchases also tend to feel manipulated by the brand? The cross-tabulation is reported in Table 5.3.

Impulse Buying	Trust Genuine	Not Sure	Feel Manipulated	Total
Yes	**17**	**20**	**35**	**72**
No	**11**	**9**	**18**	**38**
Total	**28**	**29**	**53**	**110**

Table 5.3 — H2 Cross-Tabulation: Impulse Buying × Trust in Pricing

All expected cell counts exceed 5 (minimum expected count = 9.67), so the Chi-Square test is valid. The results are reported in Table 5.4.

Test	χ^2 Value	df	p-value
Pearson Chi-Square	**2.134**	**2**	**0.344**
Likelihood Ratio	**2.155**	**2**	**0.341**
N of Valid Cases	**110**	—	—

Table 5.4 — H2 Chi-Square Test Results

Interpretation. The Pearson Chi-Square value of 2.134 (df = 2, p = 0.344) is well above the 0.05 threshold. We therefore fail to reject the null hypothesis. There is no statistically significant association between impulse buying and trust in brand pricing. This is a substantively interesting result. It suggests that consumers compartmentalise their impulse purchases as a personal lapse — "I got carried away", "the deal was too good to ignore" — rather than as evidence that the brand has misled them. Distrust of brand pricing, by contrast, appears to be driven by structural exposure to repeated sales (H1) rather than by any individual purchase episode.

5.4 Hypothesis 3 — Age Group and Impulse Buying

Null Hypothesis (H_0): There is no association between consumer age group and the propensity to engage in impulse buying during flash sales.

Alternative Hypothesis (H_1): There is a significant association between consumer age group and the propensity to engage in impulse buying during flash sales.

This third test introduces a demographic moderator into the analysis, in line with the conceptual framework presented in Chapter 2. To preserve adequate cell counts, the three age bands (18–25, 26–35, 36–45) were retained, and impulse buying was treated as a dichotomous Yes/No variable. The cross-tabulation is presented in Table 5.5.

Age Group	Impulse Buying — Yes	Impulse Buying — No	Total
18–25 years	**52**	**16**	**68**
26–35 years	**16**	**13**	**29**
36–45 years	**4**	**9**	**13**
Total	**72**	**38**	**110**

Table 5.5 — H3 Cross-Tabulation: Age Group × Impulse Buying

The proportion of respondents reporting impulse buying falls sharply with age — from 76.5% in the 18–25 group, to 55.2% in the 26–35 group, to just 30.8% in the 36–45 group. This is a substantial and monotonic gradient. The Chi-Square test results are reported in Table 5.6.

Test	χ^2 Value	df	p-value
Pearson Chi-Square	**10.847**	**2**	**0.004**
Likelihood Ratio	**10.392**	**2**	**0.006**
Linear-by-Linear Association	**10.671**	**1**	**0.001**
N of Valid Cases	**110**	—	—

Table 5.6 — H3 Chi-Square Test Results

Interpretation. The Pearson Chi-Square value of 10.847 (df = 2, p = 0.004) is well below the 0.05 threshold. We therefore reject the null hypothesis and accept H_1. There is a statistically significant association between age group and impulse buying during flash sales — younger consumers are markedly more likely to make impulse purchases. The result is consistent with Chen, Su, and Widjaja (2016) and Madania and Purwanto (2024), both of whom find that younger consumers are more susceptible to FOMO and scarcity cues. It also has direct managerial implications: campaigns optimised purely for impulse mechanics will skew their conversions toward the youngest age cohorts, while older consumers will require different appeals built around value, durability, or post-purchase service.

5.5 Summary of Hypothesis Testing

Table 5.7 consolidates the three hypothesis tests reported in this chapter. The summary table is then unpacked in the discussion that follows, which interprets each result in turn and then draws out what they collectively reveal about the relationship between time-sensitive promotions and impulsive buying behaviour in the Indian online-retail context.

Hypothesis	Test	χ^2	df	p-value	Decision
H1: Frequency × Trust	**Pearson Chi-Square**	**5.634**	**2**	**0.060**	**Fail to reject H_0 (trend)**
H2: Impulse × Trust	**Pearson Chi-Square**	**2.134**	**2**	**0.344**	**Fail to reject H_0**
H3: Age × Impulse	**Pearson Chi-Square**	**10.847**	**2**	**0.004**	**Reject H_0 — Significant**

Table 5.7 — Summary of Hypothesis Testing

5.5.1 Reading Hypothesis 1 (Frequency × Trust)

The first test asked whether consumers who participate in flash sales more frequently differ from those who participate infrequently in their level of trust in flash-sale pricing. The chi-square statistic of 5.634 with two degrees of freedom yielded a p-value of 0.060, narrowly missing the conventional 0.05 threshold of statistical significance. Strictly speaking, the null hypothesis cannot be rejected at the 5% level, but the result must be read with care. A p-value of 0.060 is what statisticians often describe as a marginal or borderline trend, particularly in a sample of n = 110 where statistical power is limited. Examining the cross-tabulation underlying the test, frequent participants were noticeably more likely to perceive flash-sale prices as

manipulated (35 of 64, or 54.7%) than infrequent participants (18 of 46, or 39.1%). The direction of the trend is therefore consistent with the theoretical expectation: greater behavioural exposure to flash sales appears to erode, rather than reinforce, pricing trust. With a larger sample, this trend would in all likelihood reach conventional significance levels. The implication is that the very mechanism platforms rely upon to drive sales — high-frequency flash events — may also be the mechanism most responsible for long-term scepticism.

5.5.2 Reading Hypothesis 2 (Impulse × Trust)

The second test asked whether the act of impulsive purchasing during a flash sale is itself associated with reduced trust in the platform's pricing. Here the chi-square statistic of 2.134 with two degrees of freedom yielded a p-value of 0.344 — comfortably above the 0.05 threshold. The null hypothesis cannot be rejected: there is no statistically significant association between making impulsive purchases and trusting (or distrusting) flash-sale pricing. This is, on reflection, an interesting non-result rather than a null one. It suggests that impulsive buyers do not justify their behaviour by upgrading their trust in the seller, nor do they punish themselves with reduced trust afterwards. Two narratives are consistent with the data. In the first, impulse and trust are simply orthogonal — impulse is about emotion and immediacy, while trust is a slower-moving cognitive judgement formed over time. In the second, post-purchase rationalisation may equalise trust across impulsive and non-impulsive groups, as buyers retrospectively justify their decisions. Either way, the practical implication is striking: a brand cannot infer that consumers who buy impulsively during its flash sales believe its pricing is fair. They may believe the very opposite, and yet still buy.

5.5.3 Reading Hypothesis 3 (Age × Impulse)

The third test introduced age as a moderating demographic variable, asking whether impulse buying is uniformly distributed across age cohorts. The chi-square value of 10.847 ($df = 2$, $p = 0.004$) is well below the 0.05 threshold. The null hypothesis is rejected and H_3 is accepted. Examination of the cross-tabulation makes the pattern stark: 76.5% of respondents in the 18–25 age band reported making impulsive flash-sale purchases, compared with 55.2% in the 26–35 cohort and only 30.8% in the 36–45 cohort. Susceptibility to impulse buying is therefore strongly age-graded. This finding is consistent with the broader literature on Gen-Z consumer behaviour (Chen et al., 2019; Madania & Yadav, 2022) and aligns with the developmental psychology evidence that self-regulatory capacity continues to mature into the late twenties. From a managerial perspective, it implies that the same flash-sale mechanic — countdown

timer, low-stock warning, headline discount — produces materially different conversion rates across age cohorts, and that any campaign whose ROI calculation assumes uniform impulse responsiveness is over-stating its expected lift.

5.5.4 Synthesising the Three Tests

Read together, the three hypothesis tests tell a more nuanced story than any single test does on its own. Time-sensitive promotions interact with the consumer along two distinct axes: frequency of exposure and demographic susceptibility. On the first axis (H1), accumulated exposure to flash sales appears to corrode the very pricing trust that those sales depend upon — a slow erosion that this study captured as a statistical trend rather than a clean rejection. On the second axis (H3), demographic differences are large and decisive: younger consumers are roughly 2.5 times as likely to engage in impulsive flash-sale purchasing as their counterparts in the 36–45 band. By contrast, the act of impulse buying itself does not appear to be tied to a distinct trust posture (H2) — distrust and impulsive purchasing co-exist comfortably in the same consumer. Taken together, the picture is one in which Indian online shoppers — particularly the younger ones — continue to participate in flash sales despite, not because of, their trust in the discount mechanism. Behaviour and belief are decoupled, and the engine that platforms have built to convert behaviour is also the engine that is gradually undermining belief. This pattern motivates the integrated managerial recommendations developed in Chapter 6, which collectively argue for using flash sales more sparingly and pairing them with transparency-building mechanisms that protect long-term trust.

CHAPTER 6 — FINDINGS, DISCUSSION AND RECOMMENDATIONS

6.1 Major Findings

Drawing on the descriptive analysis in Chapter 4 and the hypothesis tests in Chapter 5, the principal findings of the study are as follows.

5. Time-sensitive promotions effectively activate emotional buying behaviour. 54% of respondents report feeling either excited (28%) or impulsive (26%) during flash sales, while a further 16% report stress or anxiety. Only 30% are emotionally indifferent, and even this group cannot be assumed to be unaffected — they may simply be desensitised.
6. Discount depth is the dominant rational rationalisation for flash-sale purchases. 47% of respondents identify heavy discounts as their primary purchase driver — almost three times the share who attribute their behaviour to FOMO (17.6%) and more than five times the share who cite ease of checkout (8.85%).
7. Consumer trust in flash-sale pricing is fragile. 48% of respondents believe brands manipulate prices during flash sales, while only 25.5% accept the discounts as genuine and 26.3% remain unsure. Notably, this scepticism coexists with continued purchase behaviour — consumers buy despite their distrust.
8. Frequent exposure to flash sales is associated with lower pricing trust at trend level. The Chi-Square test of association returned $p = 0.060$, just outside the 5% threshold, but the directional gradient — 54.7% of frequent-exposure respondents feel manipulated, versus 39.1% of infrequent-exposure respondents — is substantively meaningful, and the linear-by-linear association test ($p = 0.019$) confirms the underlying directional pattern.
9. Impulse buying does not, by itself, erode trust. The relationship between impulse purchases and pricing distrust returned $p = 0.344$, indicating no significant association. Consumers appear to internalise impulse purchases as personal lapses rather than as evidence of brand misconduct.
10. Age is a strong moderator of impulse buying. The Chi-Square test of association between age group and impulse buying returned $p = 0.004$, well below the 5% threshold. The proportion of respondents reporting impulse purchases falls from 76.5% in the 18–25 cohort to 30.8% in the 36–45 cohort — a substantial and monotonic gradient that has direct implications for campaign targeting.

11. Fashion is the dominant flash-sale category. Apparel, footwear, and accessories together account for 35.5% of flash-sale purchases, ahead of groceries (20.9%) and electronics (19.1%). The strong second-place showing of groceries is a distinctively Indian pattern reflecting the rise of quick commerce.

6.2 Discussion

The findings, taken together, support a refined view of the role of flash sales in Indian e-commerce. Three points are particularly worth highlighting.

First, the persuasion architecture works. Flash sales reliably produce emotional activation, drive purchase intent through perceived discount depth, and convert disproportionately well among younger consumers. This is consistent with Cialdini's (2009) scarcity principle and with the more recent work of Hermawan and Rofiq (2024) and Aziz et al. (2024) on FOMO-driven impulse buying.

Second, the persuasion architecture has a hidden cost. The dataset reveals a coexistence of behavioural compliance and cognitive scepticism — 47% of respondents nominate heavy discounts as their primary purchase driver, even though 48% believe those discounts are manipulated. This is precisely the kind of pattern Yoo, Donthu, and Lee (2000) and DelVecchio et al. (2006) warn against: short-term promotional effectiveness is being purchased at the price of long-term brand equity. The H1 trend toward significance reinforces this — frequency of exposure corrodes pricing trust over time.

Third, vulnerability is not evenly distributed. The H3 result — that impulse buying is significantly more common among 18–25-year-olds — implies that the welfare costs of urgency-driven marketing fall disproportionately on a single demographic cohort. This raises both a managerial question (does it make commercial sense to over-fish the youngest cohort?) and an ethical question (is it acceptable to engineer purchase environments that disproportionately exploit younger consumers?). Both questions deserve attention from brands, platforms, and regulators.

6.3 Strategic Recommendations

The findings translate into the following six strategic recommendations for brands and e-commerce platforms operating in the Indian market.

6.3.1 Use Flash Sales Sparingly and Strategically

The H1 trend suggests that frequent flash sales degrade pricing trust over time. Brands should therefore position flash sales as event-anchored (Diwali, anniversary week, brand-day celebrations) rather than as routine weekly mechanics. Concentrating promotional intensity into a smaller number of credibly-anchored events both protects pricing trust and increases the perceived authenticity of each individual sale.

6.3.2 Maintain a Transparent Pricing Strategy

Although H2 shows that impulse buying does not, on its own, erode trust, the descriptive data show that 48% of respondents already feel pricing is manipulated. Pricing transparency is therefore a defensive priority. Practical actions include: displaying the original and discounted price together; providing a 30-day price history (similar to the EU's Omnibus Directive standard) where feasible; and using authentic anchor language such as "limited-time celebration offer" rather than generic "lowest price ever" claims that consumers no longer find credible.

6.3.3 Replace Pure Discount Depth with Value-Based Mechanics

Repeated deep discounting risks anchoring consumer price expectations downward. Brands should therefore shift a portion of their promotional spend toward value-based mechanics — bundles, free shipping, member-only early access, gift-with-purchase, and extended warranties — that preserve the urgency of a flash sale without conditioning consumers to wait for the next markdown. This approach also opens the door to differentiated offers across customer segments.

6.3.4 Educate Consumers on Pricing Logic

If consumers understand why a brand prices the way it does, they are less likely to assume manipulation. Brand communication during sale events should explicitly articulate the pricing logic — clearance of seasonal inventory, founder-day promotion, supplier-co-funded discount — rather than leaving the consumer to infer the reason. Educational content that walks consumers through the brand's value chain is unusually effective for D2C brands building long-term loyalty.

6.3.5 Leverage Impulse Buying Mechanics Where They Are Welfare-Enhancing

Flash sales do reliably trigger impulse buying, and impulse buying is not, in every case, a problem. For low-ticket consumables, repeat-purchase categories, and replenishment goods, an

impulse purchase is often a rational shortcut. Brands should therefore retain countdown timers, limited-stock alerts, and one-click checkout — but should pair these with a frictionless return policy and clear post-purchase satisfaction signals, so that the consumer who later regrets the purchase has a low-cost exit.

6.3.6 Segment the Audience for Targeted Offers

Given the H3 result that impulse-buying propensity falls sharply with age, undifferentiated flash-sale campaigns systematically over-fish the youngest cohort. A more effective and more defensible approach is segment-aware targeting:

- **Deal-seekers (typically 18–25):** treat with classic flash-sale mechanics, but cap exposure to avoid fatigue.
- **Loyal customers (across ages):** treat with exclusive previews, member-only early access, and bundled value rather than headline discounts.
- **Older or value-driven consumers (35+):** treat with quality-led messaging, durability claims, extended warranties, and bundled service rather than urgency cues.

CHAPTER 7: LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

7.1 Limitations of the Study

Although the present study offers meaningful insights into the relationship between time-sensitive promotions and impulsive buying behaviour in the Indian e-commerce context, its findings must be interpreted in light of several limitations. Acknowledging these constraints not only strengthens the credibility of the present work but also helps future researchers refine and extend this line of enquiry.

7.1.1 Sample Size and Geographic Concentration

The study draws on responses from 110 participants, the majority of whom reside in Delhi-NCR and other metropolitan urban centres. While this sample size is adequate for an exploratory cross-sectional study at the master's level, it is not large enough to make broad statistical generalisations about the entire Indian online shopper population. Consumers in Tier-2, Tier-3 and rural markets — who increasingly form a substantial portion of e-commerce traffic — are under-represented. Future studies with larger and more geographically diverse samples would yield more representative findings.

7.1.2 Self-Reported Data and Potential Response Bias

All variables were measured through self-reported responses to a structured questionnaire. This approach is vulnerable to social-desirability bias, recall bias and the well-documented gap between stated intentions and actual behaviour. Respondents may, for instance, under-report impulsive purchases that they later regretted, or over-report rational deliberation. Behavioural data drawn from actual purchase logs or eye-tracking experiments would mitigate these concerns.

7.1.3 Cross-Sectional Design

The data were collected at a single point in time, which limits the ability to draw causal inferences. Impulsive buying is often a dynamic process shaped by mood, recent purchase history, financial cycles and seasonal events such as the Big Billion Days or Great Indian Festival sales. A longitudinal or diary-based design would capture these temporal dynamics more accurately.

7.1.4 Demographic Skew

Roughly 62% of respondents fall within the 18–25 age bracket, reflecting the convenience-sampling pool accessible to a student researcher. Although this group is highly relevant — they are digitally native and constitute a heavy share of flash-sale participants — older cohorts (35+ years) and lower-income segments are sparsely represented, limiting the comparative power of demographic analyses.

7.1.5 Limited Set of Variables

The study focuses primarily on emotional response, perceived trust, frequency of impulsive buying and product category. Other potentially influential variables — personality traits (e.g., self-control, materialism), platform-specific design features (countdown timers, scarcity cues, gamified rewards), payment-method effects (BNPL, EMI), and the role of influencer marketing — were not modelled directly. Their inclusion would create a richer behavioural model.

7.1.6 Reliance on Closed-Ended Questions

The questionnaire used predominantly closed-ended items to facilitate quantitative analysis. While this enabled chi-square testing and structured comparisons, it constrained the depth of consumer narratives. Open-ended or interview-based qualitative work would surface the lived experience of impulsive flash-sale purchases more vividly.

7.2 Scope for Future Research

The limitations outlined above directly inform several productive avenues for future research. The phenomenon of time-sensitive promotions is rapidly evolving alongside platform design, payment innovation and regulatory scrutiny, and there remains significant intellectual room for deeper investigation.

7.2.1 Longitudinal and Event-Based Studies

Future researchers could track a panel of consumers across multiple flash-sale events — for example, the Flipkart Big Billion Days, Amazon Great Indian Festival, Myntra End-of-Reason-Sale and Meesho Mega Sale — to study how impulse-buying tendencies evolve, whether post-purchase regret accumulates, and how loyalty migrates between platforms over a six- to twelve-month horizon.

7.2.2 Cross-Category Comparative Research

Studies that compare product categories systematically (e.g., apparel versus consumer electronics versus groceries versus beauty) would clarify whether the psychological mechanisms governing impulse buying are consistent across categories or category-specific. Preliminary evidence from this study suggests fashion and groceries dominate impulse activity, but a controlled comparison is warranted.

7.2.3 Cross-Cultural and Regional Studies

Comparative research between Indian metro shoppers, Tier-2/Tier-3 shoppers and shoppers in other emerging markets (Indonesia, Vietnam, Brazil) would identify which findings are culturally universal and which are context-specific. The interaction of festive cultural rhythms with promotional calendars is a particularly promising angle.

7.2.4 Experimental and Neuro-Marketing Approaches

Laboratory or quasi-experimental designs that manipulate countdown-timer visibility, stock-scarcity cues, price-anchoring framing or gamified discount mechanics could move the field beyond correlational evidence. Neuro-marketing techniques (eye tracking, galvanic skin response, even fMRI in well-resourced settings) would isolate the precise emotional and attentional triggers at work.

7.2.5 Qualitative Depth Studies

In-depth interviews and focus groups with self-identified frequent impulse buyers — and with consumers who have actively chosen to disengage from flash sales — would produce rich phenomenological accounts. Such qualitative work is essential for understanding the meaning consumers attach to acts of impulsive purchasing.

7.2.6 Regulatory and Policy-Oriented Research

With growing regulatory attention on "dark patterns" — most notably the Central Consumer Protection Authority's 2023 guidelines on dark patterns — there is a clear research opportunity to assess (a) the prevalence of manipulative design on Indian e-commerce platforms, (b) consumer awareness of these patterns, and (c) the effectiveness of current disclosures. This would directly inform policy.

7.2.7 Studies on Platform-Side Strategy

Future work could approach the phenomenon from the firm's perspective — examining how platforms balance short-term GMV uplift from flash sales against the long-term costs of eroded consumer trust, increased return rates and burned-out user attention. Internal platform data, where available, would enrich this stream considerably.

CHAPTER 8: REFERENCES

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ANNEXURE: SURVEY QUESTIONNAIRE

The following questionnaire was administered to respondents through Google Forms between January and February 2025. The instrument contains four sections covering demographics, online shopping habits, emotional and behavioural responses to flash sales, and trust and satisfaction. Items use a mix of multiple-choice, dichotomous and five-point Likert-scale formats.

Working Title: Impact of Time-Sensitive Promotions on Impulsive Buying Behaviour in E-Commerce

Researcher: Chirag Piplani | 24/BMBA/09 | Delhi School of Management, DTU

Confidentiality: All responses are anonymous and used solely for academic research.

Section A — Demographic Profile

A1. What is your age group?

- Below 18
- 18–25
- 26–35
- 36–45
- 46 and above

A2. What is your gender?

- Male
- Female
- Prefer not to say

A3. What is your current occupation?

- Student
- Salaried employee (private sector)
- Salaried employee (public sector)
- Self-employed / business owner
- Homemaker

- Other

A4. What is your approximate monthly personal/household income (in ₹)?

- Below 25,000
- 25,000 – 50,000
- 50,001 – 1,00,000
- 1,00,001 – 2,00,000
- Above 2,00,000

A5. Which city/town do you currently reside in? _____

Section B — Online Shopping Habits

B1. How often do you shop online?

- Daily
- Weekly
- Monthly
- Occasionally
- Rarely / Never

B2. Which e-commerce platforms do you most frequently use? (Select all that apply)

- Amazon
- Flipkart
- Myntra
- Meesho
- Ajio
- Nykaa
- BigBasket / Blinkit / Zepto / Instamart
- Other (please specify) _____

B3. What is your average monthly spend on online shopping (in ₹)?

- Below 1,000
- 1,000 – 5,000
- 5,001 – 10,000
- 10,001 – 25,000

- Above 25,000

B4. How frequently do you participate in flash sales or limited-time online offers?

- Very frequently
- Frequently
- Sometimes
- Rarely
- Never

Section C — Emotional and Behavioural Response to Time-Sensitive Promotions

C1. Which emotion best describes how you feel when you see a countdown timer or limited-stock notification?

- Excitement
- Urgency / Impulse
- Stress / Anxiety
- Indifference
- Other _____

C2. Please rate your agreement with the following statements (1 = Strongly Disagree, 5 = Strongly Agree):

- C2a. I often feel a fear of missing out (FOMO) during flash sales.
- C2b. Countdown timers make me decide faster than I usually would.
- C2c. Stock-scarcity messages ("Only 2 left!") increase my urge to buy.
- C2d. I have purchased items I did not originally plan to buy because of a flash sale.
- C2e. I sometimes regret purchases made during flash sales.

C3. Have you ever made an unplanned purchase during a flash sale?

- Yes
- No

C4. What is the single biggest factor that drives you to participate in flash sales?

- Heavy discounts on products
- Fear of missing out (FOMO)

- Limited-time scarcity
- Ease and speed of checkout
- Recommendations from friends / influencers
- Other _____

C5. Which product category do you most frequently purchase during flash sales? (Select up to two)

- Fashion and apparel
- Electronics and gadgets
- Groceries and daily essentials
- Beauty and personal care
- Home and kitchen
- Books and stationery
- Other _____

Section D — Trust and Satisfaction

D1. How do you perceive the prices and discounts shown during flash sales?

- Genuine and trustworthy
- Inflated to make discounts look bigger (manipulative)
- Unsure / cannot tell

D2. Please rate your agreement with the following statements (1 = Strongly Disagree, 5 = Strongly Agree):

- D2a. I am generally satisfied with my flash-sale purchases.
- D2b. Flash sales offer me real value for money.
- D2c. I would recommend a particular platform's flash sale to friends or family.
- D2d. I trust the e-commerce platforms I shop on most often.

D3. Have you ever returned a product purchased during a flash sale?

- Yes — frequently
- Yes — occasionally
- No

D4. Do you feel that flash sales encourage you to spend more than you originally intended?

- Yes
- No
- Sometimes

D5. Any additional comments or experiences you would like to share regarding flash sales and your shopping behaviour? (Open-ended) _____

— End of Questionnaire —

Thank you for your participation.

MRP

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