

How Fast Digital Payments Make It Easier To Buy Electronics Impulsively In E-Commerce

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Abstract

The present study discovers the effect of fast digital payment technologies on e-impulsive buying in the Indian e-commerce atmosphere. To make payments easier for consumers, without the “pain of paying” related with cash payments, financial technologies are being established that include Unified Payments Interface (UPI) and digital wallets. The study was quantitative and cross-sectional, which received 806 valid responses from online shoppers from different cities of India and then analysed by using JASP (Statistical data analysis software). The empirical results show that fast digital payments have an important positive direct impact on the level of unplanned electronic purchases online. But this relationship is not moderated or enhanced by the instant checkout discounts and flash sales; they are pretty independent and parallel drivers. Furthermore, the mediation analysis results validate that shopping excitement is a key in-between phenomenon, thus giving insights into the psychological mechanism that lies between the digital payment convenience and impulsiveness of consumers. The findings provide important theoretical and practical implications for online retail strategy, platform design and consumer behaviour studies.

Keywords: Digital Payments, Electronic Impulse Buying, Shopping Excitement, Moderation, Mediation, E-Commerce, Consumer Behaviour

1. Introduction

The retail ecosystem in India has evolved from a cash-payment based friction to real-time digital experiences powered by sophisticated Digital Public Infrastructures such as Unified Payment Interface (UPI) and in-built Buy Now Pay Later (BNPL) credit rails over the last decade. Traditionally, the literature in consumer behaviour focused impulse buying as a low involvement activity and applicable to inexpensive, low-risk items. But unlike the “cooling-off” periods and financial hassles that were mandated for purchasing large investments of electronics, modern e-commerce sites have systematically eliminated both. Now, biometric authentication and saved payment tokens give consumers the ability to buy high value devices in seconds, bypassing the traditional “pain of paying” and challenging the notion of the typical consumer's self-control and risk evaluation.

Platform gamification features flash sales, immediate discounts on the bank, and more, which intensifies the impulsive incentive issue. While real-time payments are omnipresent, empirical evidence on the relation of payment velocity and digital financial instruments on driving high-value transactions in developing markets is limited. This study captures the direct, indirect, moderating and mediating effect of fast digital payments in unplanned electronic purchases, filling an important void in the fintech adoption

and behavioural economics research literature that provides important insights for retail strategy, consumer protection and platform design.

2. Literature review

The advent of e-commerce solutions has revolutionized consumer shopping habits, moving retail away from the careful planning and consideration phase toward a more spontaneous and impulsive approach. Impulsive buying occurs when a consumer gets a momentary urge to buy something without any scrutiny, and the urge is so strong that they are unable to resist it. This has a substantial impact in digital retail. In the digital shopping landscape, which is essentially different from physical stores with cash transactions, digital marketing tools and technologies are utilised to minimize consumers' thinking time and ease their decision-making process.

2.1.Digital Payment Systems as Drivers of Impulse Buying

The use of digital payment methods such as UPI, mobile wallets, credit/debit cards, and net banking are some of the key factors persuading consumer behaviour in the ecommerce domain in today's world. The classical consumer research has indicated that there is 'pain of paying' which is the discomfort that consumers feel when they have to pay out money. These cashless transaction ecosystems, however, diminish this tactile touch feedback, which may result in less actual "feel" of what's being bought when the time comes.

Empirical research in the past few years has found that the ease and convenience of digital payments have a direct and positive effect on the likelihood and quantity of consumers making spontaneous purchases. Digital wallets and instant payment apps eliminate the structural time for consumers to think things through. Thus, the strong integration of various kinds of digital payment promotes a situation in which purchase intention towards unplanned electronic purchases is very favourable.(Kailas & Supervisor, 2025).

2.2.Promotional Incentives and the Boundaries of Moderation

Payment mechanisms offer the structural ease that allows for transactions, and promotional stimuli, like flash sales, instant discounts and limited time offers, are external marketing stimuli meant to push the person to buy. Promotional cues have been studied in consumer behaviour in the context of either boundary conditions or as moderators that increase consumer sensitivity when combined with technological ease.(Mary & Antony, 2022).

New studies, however, have shown that a combination of payment speed and a promotional discount will not necessarily have a multiplicative amplification effect on consumer arousal, but each will have a strong direct effect.(Fitriyani & Afrizal, 2024). Payment methods and promotional offers do not necessarily act in a synergistic fashion, enhancing payment-induced impulsivity; instead, they are more likely to be independent processes that serve different motivational aspects of the online shopping experience.

2.3.Psychological Mechanisms and Emotional Mediation

Modern conceptual approaches to digital payment technologies stress the importance of exploring the internal psychological mediators to fully grasp the implications of spontaneous purchasing behaviour(Faraz & Anjum, 2025). Frictionless checkout architectures are not just about moving faster through administrative processes, they are about changing the consumer emotional state, taking place in real time such as shopping excitement and immediate pleasure(Fitriyani & Afrizal, 2024) .

Consumer psychology studies suggest that transferring money in a smooth manner, via digital channels, diminishes the perceived financial stress, and positive emotional states take over the decision-making

window. This can be the psychological state of the consumer at the point of sale and it is a powerful link between payment convenience and behavioural outcome as the consumer is feeling overexcited (Fitriyani & Afrizal, 2024). Hence, psychological arousal is a crucial mediator mechanism that encapsulates direct and indirect routes in which digital financial architectures regulate contemporary e-commerce consumption (Faraz & Anjum, 2025) .

3. Research Methodology and Data Analysis

3.1. Research Design and Approach

This study adopts a quantitative, cross-sectional research design using a structured survey method to examine consumer behaviour within e-commerce platforms. The primary objective is to examine the structural relationships governing electronic product impulse buying amongst Indian consumers, specifically testing direct, moderating, and mediating paths including digital payment methods, promotional incentives, and psychological arousal.

3.2. Sampling and Data Collection

- **Target Population:** Online shoppers in India who have experience purchasing electronic products through e-commerce platforms.
- **Sample Size (N):** The final analysed dataset comprised 806 valid responses after severe data cleaning and screening for incomplete entries or outliers.
- **Sampling Technique:** A purposive and convenience sampling was used to select diverse consumer segments across Type X, Type Y and Type Z (as per Govt. of India HRA cities classification, 2011) cities across India capturing a broad range of differences in consumer behaviour in the adoption of digital transactions.

3.3. Hypothesis Formulation

Based on the theory of Consumer Behaviour in the context of e-commerce, the following hypotheses are proposed:

- **H1 (Direct Relationship):** Faster digital payment methods significantly increase the likelihood of unplanned electronic purchases.
- **H2 (Moderation Effect):** Instant checkout discounts combined with fast payments strengthen the urge to buy on impulse.
- **H3 (Mediation Effect):** The feeling of psychological excitement and detachment from digital money mediates the link between fast payments and electronic impulse buying.

3.4. Measurement and Operationalization of Variables

All hypotheses were measured using multi-item or single-item scales adapted from established consumer behaviour and e-commerce literature, evaluated via multi-point Likert scales:

Dependent Variable (Electronic Impulse Buying) (Y): Rated on a scale that reflects validated frequency of spontaneous, nonplanned purchases of electronic gadgets in an ecommerce context, and the behavioural tendency to purchase in that same way.

Independent Variable (Digital Payment Index) (X): It is a composite index calculated by averaging the core technological impact measures, like UPI, credit cards, digital wallet, net banking, and debit card options. Items that referred specifically to the outcomes of impulse-buying were not included in the construction of the index because of the risk of circularity and the need for discriminant validity.

Moderating Variable (Flash Sales and Instant Discounts) (W): Captured the perceived behavioural influence of time sensitive promotional triggers and checkout discounts. This variable was mean centred

before analysis as would be normal for interaction models in economic work.

Mediating Variable (Shopping Excitement) (M): Assessed immediate emotional arousal, affective activation and psychological involvement of consumers in a streamlined digital checkout process.

3.5. Statistical Scrutiny Procedure

Data analysis was done using JASP for testing the Hypotheses:

- **Testing H1 (Direct Relationship):** A simple linear regression model evaluated the predictive effect of the digital payment index on electronic impulse buying, examining model fit (R^2), unstandardized regression coefficients (B), and standard errors at a threshold of $p < .05$.
- **Testing H2 (Moderation Analysis):** A moderated multiple regression analysis evaluated interaction effects. To mitigate multicollinearity, variables were mean-centered earlier to generating the interaction term.
- **Testing H3 (Mediation Analysis):** A mediation model using the Maximum Likelihood estimator tested the indirect pathway ($X \rightarrow M \rightarrow Y$) through 5,000 bootstrap samples with bias-corrected 95% confidence intervals.

4. Results and Discussion

4.1. For H1 (Direct Relationship): Faster digital payment methods significantly increase the likelihood of unplanned electronic purchases.

Table 1: Model Summary table

Note. M_1 includes Digital Payment Index.

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	df1	df2	p
M_0	0.000	0.000	0.000	1.249	0.000	0	805	—
M_1	0.232	0.054	0.052	1.216	0.054	1	804	< .001

- **$R^2 = 0.054$:** The model summary evaluates how well the independent variable predicts the dependent variable. The Digital Payment Index describes 5.4% of the variance ($R^2 = .054$) in electronic impulse buying.
- **Adjusted $R^2 = 0.052$:** Approves that this analytical power holds true when adjusted for sample size and model complexity.
- **$p < .001$:** The change in R^2 is statistically significant, confirming that adding the Digital Payment Index provides a meaningful enhancement over the baseline null model (M_0).

5. Table 2: ANOVA Table

Model	Sum of Squares	df	Mean Square	F	p
M_1	Regression	67.351	1	67.35	45.54
Residual	1189.000	804	1.479		
Total	1256.351	805			

Note. M_1 includes Digital Payment Index. The intercept model is omitted.

- **$F(1, 804) = 45.54, p < .001$:** The ANOVA table investigates the overall statistical significance of the regression model.
- **What it means:** The F -statistic of 45.54 with a p -value are well below .001 proves that the regression model as in the whole is statistically trustworthy and strong. It proves that the association between

digital payment methods and spontaneous electronic purchases did not occur by random chance, providing initial validation for H_1 .

5.1. For H2 (Moderation Effect): Instant checkout discounts combined with fast payments strengthen the urge to buy on impulse

Table 3: Model Summary Table

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	df1	df2	p
M_0	0.000	0.000	0.000	1.249	0.000	0	805	—
M_1	0.256	0.066	0.062	1.210	0.066	3	802	< .001

Note. M_1 includes Centered Payment Index, Centered Discount, and the Interaction term.

- **$R^2 = 0.066$ (Adjusted $R^2 = 0.062$):** The model summary displays that the combined set of predictors (main effects and the interaction product) books for 6.6% of the variance in electronic impulse buying.
- **R^2 Change = 0.066 ($p < .001$):** The inclusion of these predictors produces a statistically significant improvement in model fit relative to the baseline null model (M_0).

Table 4: ANOVA Table

Model	Sum of Squares	df	Mean Square	F	p
M_1	Regression	82.32	3	27.44	18.74
Residual	1174.00	802	1.464		
Total	1256.00	805			

Note. M_1 includes Centered Payment Index, Centered Discount, and the Interaction term. The intercept model is omitted.

- **$F(3, 802) = 18.74, p < .001$:** The ANOVA test evaluates the total statistical dependability of the regression model.
- **What it means:** The high F -statistic and significant p -value consent that the total regression model is vigorous and statistically sound, verifying that the combined variables reliably predict variance in consumer shopping behaviour.

Table 5: Coefficients Table

Model	Unstandardized (B)	Standard Error	Standardized (β)	t	p	Lower (95% CI)	Upper (95% CI)
M_0 (Intercept)	2.536	0.044	—	57.63	< .001	2.450	2.622
M_1 (Intercept)	2.534	0.045	—	56.42	< .001	2.446	2.622
Centered Payment Index	0.272	0.051	0.192	5.290	< .001	0.171	0.373

Centered Discount	0.115	0.036	0.116	3.197	.001	0.044	0.185
Interaction (Payment × Discount)	0.005	0.037	0.004	0.122	.903	-0.069	0.078

Centered Payment Index ($B = 0.272, t = 5.290, p < .001$): Shows a strong, positive, and statistically significant direct impact on impulse buying.

Centered Discount ($B = 0.115, t = 3.197, p = .001$): Shows a significant independent positive relationship with spontaneous purchases.

Interaction Term ($B = 0.005, t = 0.122, p = .903$): The main test for H2. Because the p -value is well beyond 0.05 and the 95% confidence interval spans across zero $[-0.069, 0.078]$, the interaction is **not statistically significant**. This is steady with the fact that H2 has not been supported, founding that there is no magnification or moderation effect of exact relationships between velocity of digital payment and electronic impulsive buying through checkout discounts.

5.2.For H3 (Mediation Effect): The feeling of psychological excitement and detachment from digital money mediates the link between fast payments and electronic impulse buying.

Table 6: Direct Effects Table

Path	Std. Estimate	Std. Error	z-value	p	Lower (95% CI)	Upper (95% CI)
Digital Payment Index → Electronics_often_bought_online_in_spontaneous_fashion	0.200	0.040	5.022	< .001	0.119	0.278

The relationship between Digital Payment Index and Electronic impulse buying, controlling for the mediator (shopping excitement) is direct. The standardized estimate is 0.200 with a z-value of 5.022 ($p < .001$). The p -value is very low (well below the significance threshold of 0.05) and the 95% confidence interval $[0.119, 0.278]$ does not contain zero, so this supports the claim that digital payment methods have a direct, statistically significant influence on spontaneous purchasing behaviour.

Table 7: Indirect Effects Table

Path	Std. Estimate	Std. Error	z-value	p	Lower (95% CI)	Upper (95% CI)
Digital Payment Index → Influence_Excitement_IB →	0.032	0.016	2.006	.045	8.959×10^{-4}	0.063

Electronics_often_bought_online_in_spontaneous_fashion

This table tests the mediation pathway through shopping excitement (H3). The standardized indirect effect is 0.032 with a z-value of 2.006 ($p = .045$). Because the p -value is below 0.05 and the 95% confidence interval [0.0009,0.063] does not comprise zero, the indirect effect is statistically significant. This sanctions that shopping excitement effectively mediates the relationship between fast digital payments and electronic impulsive buying.

Table 8: Total Effects Table

Path	Std. Estimate	Std. Error	z-value	p	Lower (95% CI)	Upper (95% CI)
Digital Payment Index → Electronics_often_bought_online_in_spontaneous_fashion	0.232	0.036	6.494	< .001	0.162	0.301

Total effect refers to the overall joint (direct and indirect) effect of the Digital Payment Index on electronic impulsive buying, but it overlooks the mediator. The standardized total effect is 0.232 with a z-value of 6.494 ($p < .001$) and a 95% confidence interval of [0.162,0.301]. It shows that there is a strong overall positive correlation between seamless digital payments and spontaneous online purchases.

Table 9: Path Coefficient Table

Path	Std. Estimate	Std. Error	z-value	p	Lower (95% CI)	Upper (95% CI)
Influence_Excitement_IB → Electronics_often_bought_online_in_spontaneous_fashion	0.080	0.039	2.023	.043	9.565×10^{-4}	0.155
Digital Payment Index → Electronics_often_bought_online_in_spontaneous_fashion	0.200	0.040	5.022	< .001	0.119	0.278
Digital Payment Index → Influence_Excitement_IB	0.397	0.030	13.250	< .001	0.335	0.453

This table breaks down all individual structural paths within the mediation model:

- **Mediator to Dependent Variable (Path b):** Shopping excitement significantly predicts impulse buying (Std. Estimate = 0.080, $z = 2.023$, $p = .043$).
- **Independent to Dependent Variable (Direct Path):** Digital payments directly predict impulse buying (Std. Estimate = 0.200, $z = 5.022$, $p < .001$).
- **Independent to Mediator (Path a):** Digital payments strongly and significantly drive shopping excitement (Std. Estimate = 0.397, $z = 13.250$, $p < .001$).

Table 10: Summary Table of Hypotheses and Empirical Results

Hypotheses	Structural Path / Relationship	Key Statistical Metrics	Empirical Decision
H₁ (Direct Effect)	Digital Payment Index → Electronic Impulse Buying	$R^2 = .054, F(1,804) = 45.54, p < .001$	Supported
H₂ (Moderation Effect)	(Digital Payments × Flash Discounts) → Electronic Impulse Buying	Interaction $B = 0.005, t = 0.122, p = .903$	Not Supported
H₃ (Mediation Effect)	Digital Payments → Shopping Excitement → Electronic Impulse Buying	Indirect Effect = $0.032, z = 2.006, p = .045$	Supported (Partial Mediation)

6. Synthesis and Discussion of Findings

The Direct Catalyst of Payment Speed (H1):

The modernization and seamless nature of financial transactions are proven to be strong direct motivators of spontaneous purchases by consumers (H1). The regression results show that electronic impulse buying is significantly predicted by the Digital Payment Index, and accounts for 5.4% of the variance. This mirrors the modern behavioural thinking on minimizing the cognitive friction and pain in cashless transactions.

The Independence of Promotional Triggers (H2):

Contrary to expectations, the moderation analysis showed that neither instant checkout discounts nor flash sales increased or interacted with digital payment speed to change impulsivity. Payment convenience and flash promotions are two independent drivers of purchasing behaviour, with the former driving sales, and the latter causing them. Consumers are not paying attention to financial speed and the urge to buy; they are paying attention to one aspect of the speed and the other aspect of the urge.

The Psychological Mechanism of Excitement (H3):

The mediation model is able to effectively reveal the internal mechanism between digital payment architectures and consumer behaviour, which is the Psychological Mechanism of Excitement (H₃). The positive impact of payment convenience on impulse buying is mediated partially by the concept of shopping excitement. The streamlined checkouts not only bring physical ease, but also serve as instant emotional arousal that quickens spontaneous electronic purchases.

7. Conclusion

Finally, this empirical research provides detailed information about the dynamics of the behaviour that affects the so-called electronic impulse buying phenomenon in the current e-commerce context. The results show that seamless digital payment systems are strong direct drivers of spontaneous consumer purchases (H1), rather than interactive amplifiers for the speed of payment (H2), as a parallel process. The mediation analysis also indicates that the psychological pathway of shopping excitement is a significant pathway that explains the relationship between payment convenience and the impulsiveness of consumers (H3) and would be worth investigating in the future. Overall, these findings suggest that the ease of technological transactions can influence affective emotional arousal, and that affective emotional arousal can influence digital purchasing behaviour, both theoretically and practically, for online retail strategies and consumer behaviour research.

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