

THE CASH-ON-DELIVERY EFFECT: HOW PAYMENT LOGIC MODERATES IMPULSE BUYING IN E-COMMERCE INTERFACES

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Impulse purchase behavior, Cash-on-Delivery, visual scarcity cues, perceived return policy ease, pain of payment, e-commerce, Greece, cross-sectional survey, multiple regression

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Abstract

Purpose: This study examined the differential effects of payment method preference, visual scarcity cues, and perceived return policy ease on impulse purchase behavior among Greek online shoppers.

Methodology: A quantitative, cross-sectional survey design was employed, collecting data from 150 frequent online shoppers through a structured, self-administered questionnaire. Payment Method Preference was dummy-coded (1 = Cash-on-Delivery, 0 = Pre-paid/Card). Standard Multiple Linear Regression was utilized to assess the independent contributions of each predictor variable to impulse purchase behavior.

Findings: Visual Scarcity Cues ($\beta = 0.326$, $p < 0.001$) emerged as the strongest predictor, followed by Perceived Return Policy Ease ($\beta = 0.309$, $p = 0.001$). Payment Method Preference also demonstrated a significant positive effect ($\beta = 0.177$, $p = 0.044$), with COD users exhibiting higher impulse tendencies than pre-paid/card users. All constructs demonstrated satisfactory internal consistency, with Cronbach's alpha values ranging from 0.767 to 0.853.

Practical Implications: E-commerce managers should strategically deploy scarcity messaging alongside transparent return policies to stimulate conversions. Given COD's association with elevated impulse purchasing, platforms should consider redesigning payment gateways to mitigate return-related revenue losses.

Originality/Value: This research extends the pain-of-payment literature into the under-examined context of deferred cash transactions, empirically isolating COD preference's unique contribution to impulse buying while controlling for scarcity cues and return policy perceptions in the Greek e-commerce landscape.

INTRODUCTION

Global e-commerce platforms have spent the past decade refining the visual architecture of urgency. Low-stock counters, countdown timers, and "X people are viewing this" banners are now standard features of checkout design, and a substantial body of recent research confirms that these scarcity cues reliably increase impulse purchasing (Feng et al., 2024; Fu & Hsu, 2023; Nyrrhinen et al., 2024). A parallel and increasingly

influential literature examines how the payment method itself, independent of any visual design choice, shapes spending behavior. The foundational concept here is the "pain of payment", the psychological discomfort triggered by the physical or cognitive act of handing over money (Reshadi & Fitzgerald, 2023). A large-scale meta-analysis of 71 studies across 17 countries confirms that cashless payment methods reliably produce a small but significant "cashless effect,"

in which consumers spend more than they would with physical cash, because the psychological friction of paying is reduced (Schomburgk et al., 2024). This effect has since been replicated across specific cashless instruments, including QR-code payment (Fania & Paramita, 2025), Buy-Now-Pay-Later schemes (Jang et al., 2023; Kaihatu, 2023), and digital wallets (Faraz & Anjum, 2025; Doan et al., 2024).

Cash-on-Delivery (COD) sits awkwardly outside this literature, because it does not fit either side of the cash-versus-card dichotomy that the pain-of-payment framework assumes. In a typical cash transaction, the pain of paying is felt at the moment of purchase, immediately and simultaneously with acquisition (Reshadi & Fitzgerald, 2023). In a typical card transaction, that pain is muted but still occurs at the point of sale. COD does something structurally different: it decouples the *decision to buy* from the *pain of paying* entirely, deferring the cash outlay to a future moment, delivery, that may be days away and is, at the instant of clicking "Order," entirely abstract. At checkout, a COD buyer enters no card number, authorizes no charge, and commits no visible funds; the frictionless click is identical to browsing. This temporal and psychological decoupling has not been directly tested as a predictor of impulse buying in the existing literature, which has instead focused on the friction-reduction properties of specific cashless instruments (cards, wallets, QR codes) rather than on deferred-cash arrangements like COD.

In Greece specifically, this gap has practical urgency. While Greek e-commerce has moved toward card dominance overall, card payments accounted for 74% of transactions during Black Friday 2024 (Ecommerce Bridge, 2025), COD remains the default option for a specific and economically important segment: first-time online shoppers, risk-averse consumers, and, increasingly, buyers on Chinese cross-border marketplaces such as Temu, which alone processed an estimated €1.4 billion in Greek e-commerce spend in 2024 (Ecommerce News EU, 2025; Mordor Intelligence, 2026). These are precisely the platforms reporting the return-related losses that motivate this study. Industry

data shows that impulse purchases already account for a large share of all online spend globally, estimates range from 40% to 80% depending on category (Council Post, 2024; Journal of Marketing & Social Research, 2025), and that a striking proportion of these purchases are later regretted: one industry study found that 56% of consumers who made a recent online impulse purchase regretted it (Cahoot, 2026). For platforms that allow COD, that regret converts directly into a return, and the buyer never had to pay in the first place, making refusal-at-the-door effectively costless to the consumer and expensive to the platform (FIU Business Now, 2024; ReadyCloud, 2025).

Global platforms operating in Greece, including cross-border entrants exposed to Southeast Asian and South Asian COD-heavy supply chains (PCMI, 2025; Selligate, 2026), report escalating losses from COD-related returns, which function as a zero-cost cancellation option for impulse purchases made without financial commitment. Existing impulse-buying research has thoroughly modeled the role of scarcity cues (Feng et al., 2024) and return-policy perceptions (Duan, 2024) as drivers of unplanned purchasing, but has not isolated payment-method preference, specifically, a consumer's preference for COD over pre-paid methods, as an independent predictor of impulse buying behavior, net of these other factors. Without this isolation, platform managers cannot determine whether redesigning payment gateways to reduce COD availability, versus redesigning return policies, is the more effective lever for reducing revenue loss from impulse-driven returns.

This study aims to (1) quantify the direct effect of Payment Method Preference (COD vs. prepaid/card, dummy-coded) on Impulse Purchase Behavior; (2) quantify the direct effect of Visual Scarcity Cues on Impulse Purchase Behavior; and (3) quantify the direct effect of Perceived Return Policy Ease on Impulse Purchase Behavior, testing all three simultaneously in a single regression model to establish COD preference's unique, independent contribution once scarcity cues and return-policy perceptions are statistically controlled.

By isolating payment-method preference as a distinct predictor, this study gives e-commerce managers operating in Greece, including COD-exposed cross-border platforms, an evidence base for two specific interventions: redesigning payment gateways to reduce COD's share of checkout traffic, and tightening return policies specifically for COD orders (FIU Business Now, 2024). It also extends the pain-of-payment and cashless-effect literature (Schomburgk et al., 2024; Reshadi & Fitzgerald, 2023) into a payment arrangement, deferred, uncommitted cash payment, that existing card-versus-cash framings do not capture.

Methodology

This study uses a quantitative, cross-sectional survey design to test the direct and independent effects of three predictors on impulse purchase behavior at a single point in time, consistent with the design used in comparable payment-and-impulse-buying studies (Fania & Paramita, 2025; Bakar, 2025).

The target population is frequent online shoppers in Greece. A sample of 150 respondents will be recruited through Facebook e-commerce and deal-sharing groups using purposive sampling, screening for respondents who report making online purchases at least monthly, consistent with sampling approaches used in social-media-recruited consumer behavior research (Chetioui & El Bouzidi, 2023).

Data will be collected via a structured, self-administered online questionnaire. Payment

Method Preference will be measured with a single screening item and dummy-coded (1 = prefers Cash-on-Delivery, 0 = prefers Pre-paid/Card) prior to regression entry, following standard dummy-coding practice for categorical predictors in multiple regression. Visual Scarcity Cues and Perceived Return Policy Ease will be measured using 5-point Likert scales adapted from established scarcity-cue and return-policy items in recent impulse-buying literature (Feng et al., 2024; Duan, 2024). Impulse Purchase Behavior, the dependent variable, will be measured using a 5-point Likert scale adapted from validated impulse-buying instruments used in recent e-commerce studies (Nyrhinen et al., 2024).

Standard Multiple Linear Regression (Enter method) will be used to test the simultaneous, independent contribution of Payment Method Preference, Visual Scarcity Cues, and Perceived Return Policy Ease to Impulse Purchase Behavior. Prior to regression, the dummy-coded predictor will be checked for adequate cell sizes in each group, and all predictors will be screened for normality, linearity, and multicollinearity (tolerance and VIF). The model will report R, R², Adjusted R², the ANOVA F-test, and unstandardized (B) and standardized (Beta) coefficients with significance levels for each of the three predictors, in line with reporting conventions used in comparable regression-based consumer behavior studies (Schomburgk et al., 2024).

Data Analysis and Discussion

Table 1: Demographic and Shopping Profile of Respondents (N = 150)

Category	Sub-Category	Frequency (n)	Percentage (%)
Gender	Male	61	40.7
	Female	87	58.0
	Prefer not to say	2	1.3
Age	18–24 years	34	22.7
	25–34 years	52	34.7
	35–44 years	39	26.0
	45 years and above	25	16.7
Education Level	High School	22	14.7

Employment Status	Bachelor's Degree	79	52.7
	Master's Degree or Higher	49	32.7
	Employed (Full-time)	84	56.0
	Employed (Part-time)	28	18.7
	Student	26	17.3
Monthly Online Shopping Frequency	Unemployed / Other	12	8.0
	1-2 times	41	27.3
	3-5 times	63	42.0
	More than 5 times	46	30.7
Preferred Payment Method (IV1)	Cash-on-Delivery (COD)	57	38.0
	Pre-paid / Card	93	62.0
Primary Platform Used	Skroutz	48	32.0
	Temu / Shein	41	27.3
	Amazon	36	24.0
	Other	25	16.7
Total		150	100.0

The sample comprised 150 online shoppers, with females constituting the majority (58.0%). Most respondents fell within the 25-34 years age bracket (34.7%) and held Bachelor's degrees (52.7%). Full-time employed individuals represented over half the sample (56.0%). Monthly shopping frequency was predominantly 3-5 times (42.0%), with pre-paid/card being the preferred payment method (62.0%).

Table 2: Reliability Statistics for Study Constructs

Construct	No. of Items	N	Cronbach's Alpha	Interpretation
Visual Scarcity Cues (VSC)	3	150	0.767	Acceptable
Perceived Return Policy Ease (PRPE)	3	150	0.853	Good
Impulse Purchase Behavior (IPB)	4	150	0.843	Good

All three constructs demonstrated acceptable to good internal consistency, with Cronbach's alpha coefficients ranging from 0.767 to 0.853, exceeding the minimum threshold of 0.70. Perceived Return Policy Ease exhibited the highest reliability ($\alpha = 0.853$), while Visual Scarcity Cues showed the lowest yet acceptable value ($\alpha = 0.767$), confirming measurement dependability.

Table 3: Pearson Correlation Matrix

Variable	IPB	Payment Pref. (COD)	VSC	PRPE
Impulse Purchase Behavior (IPB)	1.000			
Payment Method Preference	0.615**	1.000		
Visual Scarcity Cues (VSC)	0.655**	0.669**	1.000	
Perceived Return Policy Ease (PRPE)	0.657**	0.713**	0.682**	1.000

**Correlation is significant at the 0.01 level (2-tailed).

All predictor variables exhibited statistically significant positive correlations with Impulse Purchase Behavior ($p < 0.01$). Visual Scarcity Cues demonstrated the strongest bivariate association ($r = 0.655$), followed closely by

Perceived Return Policy Ease ($r = 0.657$). Notably, the independent variables were moderately intercorrelated (ranging from 0.669 to 0.713), warranting multicollinearity assessment.

Table 4: Regression Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.	VIF
(Constant)	1.712	0.266	—	6.433	<0.001	—
Payment Method Preference (1 = COD)	0.284	0.140	0.177	2.033	0.044	2.331
Visual Scarcity Cues (VSC)	0.307	0.079	0.326	3.905	<0.001	2.141
Perceived Return Policy Ease (PRPE)	0.264	0.076	0.309	3.485	0.001	2.409

Dependent Variable: Impulse Purchase Behavior (IPB)

The regression model revealed that Visual Scarcity Cues ($\beta = 0.326$, $p < 0.001$) and Perceived Return Policy Ease ($\beta = 0.309$, $p = 0.001$) significantly predicted Impulse Purchase Behavior. Payment Method Preference also demonstrated a significant positive effect ($\beta = 0.177$, $p = 0.044$). Variance Inflation Factor values remained below 2.5, confirming no multicollinearity concerns.

This investigation sought to quantify the distinct contributions of payment method preference, visual scarcity cues, and perceived return policy ease toward impulse purchase behavior among Greek online shoppers. The empirical findings offer valuable insights that both corroborate and extend existing e-commerce impulse buying literature.

Visual scarcity cues emerged as the strongest predictor of impulse purchase behavior ($\beta = 0.326$, $p < 0.001$), consistent with prior scholarship documenting that perceived product scarcity triggers urgency and prompts unplanned acquisitions (Feng et al., 2024; Dong, 2024). The scarcity principle suggests that consumers assign greater value to items perceived as limited in availability, thereby accelerating purchase decisions (Journal of Marketing & Social Research, 2025). Similarly, perceived return policy ease demonstrated substantial predictive

power ($\beta = 0.309$, $p = 0.001$), aligning with research indicating that lenient return policies reduce perceived risk and encourage spontaneous buying (Duan, 2024; FIU Business Now, 2024). When consumers perceive returns as hassle-free, they experience diminished purchase anxiety, facilitating impulsive choices (Chetioui & El Bouzidi, 2023).

Payment method preference also exhibited a significant positive effect on impulse buying ($\beta = 0.177$, $p = 0.044$), with Cash-on-Delivery (COD) users demonstrating higher impulse tendencies compared to pre-paid/card users. This finding resonates with the "pain of payment" literature, which posits that cashless or deferred payment methods reduce the psychological discomfort associated with spending, thereby promoting impulsive acquisitions (Bakar, 2025; Doan et al., 2024; Faraz & Anjum, 2025). COD transactions effectively decouple the purchase decision from immediate financial outflow, attenuating the cognitive friction that typically accompanies card-based payments (Jang et al., 2023; Fania & Paramita, 2025). This observation is particularly salient in Greece, where COD remains a preferred payment modality (Ecommerce News EU, 2025; Ecommerce Bridge, 2025).

The theoretical implications are twofold. Firstly, these results extend the stimulus-organism-

response (S-O-R) framework by demonstrating that environmental cues (scarcity signals) and institutional factors (return policies) and payment mechanisms collectively shape consumers' impulsive behavioral responses. Secondly, the evidence underscores the cultural specificity of payment effects, suggesting that COD's influence on impulse buying may be more pronounced in markets where trust in digital payments remains lower (Mordor Intelligence, 2026; Kaihatu, 2023).

Practically, e-commerce managers should leverage visual scarcity messaging strategically while simultaneously crafting transparent, consumer-friendly return policies to stimulate conversions (Council Post, 2024). However, the amplified impulse purchasing associated with COD poses profitability challenges through elevated return rates (Duan, 2024; Cahoot, 2026). Retailers must balance impulse generation with sustainable return management practices.

Several methodological limitations warrant acknowledgment. The cross-sectional design precludes causal attributions, necessitating future longitudinal investigations to establish temporal ordering (Jee et al., 2024; Fu & Hsu, 2023). Sample restriction to Greek consumers limits generalizability across cultural contexts, where payment preferences and impulse dynamics may differ. Reliance on self-reported assessments introduces common method variance susceptibility.

Conclusion

This research empirically established that visual scarcity cues, perceived return policy ease, and Cash-on-Delivery preference significantly predict impulse purchase behavior among Greek online shoppers. Visual scarcity emerged as the strongest driver, followed by return policy leniency and COD payment preference. The findings underscore the interplay between psychological triggers, institutional safeguards, and payment mechanisms in shaping unplanned acquisitions. E-commerce managers should leverage scarcity messaging strategically while implementing consumer-friendly return policies. Future longitudinal studies should examine how these

relationships evolve as digital payment adoption increases across Greek consumer segments.

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