

Psychological Antecedents of Digital Purchase Decisions: A Structural Model of Cognitive Processing, Perceived Risk, and Trust Among Online Consumers

Dr. Prabhakar. K¹, Dr. Sazina Khan², Dr. Vichitra R³, Dr. Divya Rose Peter⁴,
Dr. Padma Nandan⁵, Dr. Santhosh Y.⁶

¹ Assistant Professor, Management Department, St. Josephs University, Bengaluru, India.

² Faculty & Senior Outreach Manager, Academics, Westford University College, Sharjah, UAE.

³ Assistant Professor, School of Business & Management, Christ (Deemed to be University), Bengaluru, India.

⁴ Associate Professor, Department of Education Institution, Management & Science University, Shah Alam, Selangor, Malaysia.

⁵ Assistant Professor, Commerce Department, St. Josephs University, Bengaluru, India.

⁶ Associate Professor, Commerce & Management Department, Jain (Deemed to be university), Bengaluru, India

Email: ¹prabhakar.k@sju.edu.in, ²sazina.k@westford.org.uk, ³vichitrasomshekar23@gmail.com,

⁴divya_rose@msu.edu.my, ⁵padma.nandan.research@gmail.com, ⁶santhosh3@gmail.com

Orchid Id number: ¹307-312-307-312, ²307-312-307-312, ³307-312-307-312, ⁴307-312-307-312, ⁵307-312-307-312, ⁶307-312-307-312

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The digital marketplace has transformed how consumers evaluate information and make purchase decisions, elevating the role of psychological factors in online consumption. This study examines how three psychological constructs cognitive processing, perceived risk, and trust jointly shape online purchase decision-making. Grounded in consumer psychology and behavioural decision-making theory, the study follows a quantitative, descriptive-analytical design. Data are collected via a structured questionnaire administered to active online consumers and analysed using reliability testing, exploratory and confirmatory factor analysis, and structural equation modelling (SEM).

Cognitive processing is expected to positively affect purchase decisions, perceived risk to exert a negative effect, and trust to positively influence decisions while partially mediating the negative effect of perceived risk. (Final findings must be reported once the collected dataset is analysed.) The reliance on convenience sampling and self-reported data limits generalisability; the proposed model nonetheless offers a unified lens for integrating cognitive, risk, and trust-based explanations of digital consumer behaviour. The findings offer e-commerce platforms and digital marketers concrete levers — trust signals, risk-reduction cues, and decision-support tools — for improving conversion and customer confidence.

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1. Introduction

The rapid expansion of digital commerce has fundamentally reshaped how consumers search for information, evaluate alternatives, and commit to purchases. The proliferation of e-commerce platforms, mobile applications, and digital payment systems has shifted an increasing share of retail activity from physical stores to online channels. Unlike traditional retail settings, however, online shopping strips away sensory and interpersonal cues — the ability to touch a product, question a salesperson, or gauge a store's legitimacy from its physical presence. This absence increases uncertainty, raises information load, and heightens perceived risk, pushing psychological factors to the centre of the online purchase decision. Consumer behaviour in digital environments is no longer adequately explained by economic rationality alone. Purchase decisions are shaped by how information is cognitively processed, how risk is perceived and tolerated, and how much trust a consumer extends to an unfamiliar seller or platform. Among the many psychological constructs studied in digital consumer research, cognitive processing, perceived risk, and trust recur most consistently as proximate determinants of online purchase intention. This study develops and empirically tests a structural model linking these three constructs to online purchase decisions. By integrating perspectives from behavioural economics and consumer psychology, the research aims to contribute both to the theoretical literature on digital consumer behaviour and to practice-oriented guidance for e-commerce platforms and digital marketers.

2. Literature Review and Hypothesis Development

2.1 Cognitive Processing in Consumer Decision-Making

Cognitive processing refers to how individuals attend to, interpret, and evaluate information

before forming a judgment. Dual-process accounts of cognition distinguish an intuitive, fast mode of thinking (System 1) from a deliberate, analytical mode (System 2); decisions typically draw on a blend of both, with the balance shifting according to task difficulty, time pressure, and personal involvement (Kahneman, 2011; Evans, 2008). In online shopping, System 1 processing manifests as reliance on heuristics — star ratings, review volume, brand familiarity — while System 2 processing involves the deliberate comparison of specifications, prices, and seller credentials. Because online environments simultaneously offer abundant heuristic cues and rich comparative information, they are a natural setting in which both processing modes operate side by side (Evans, 2008). Prior research broadly associates greater analytical involvement with more confident, better-informed purchase decisions, motivating the first hypothesis:

H1: Cognitive processing positively influences online purchase decisions.

2.2 Perceived Risk in Online Environments

Perceived risk captures a consumer's subjective assessment of the potential for loss associated with a purchase, and is commonly decomposed into financial, product/performance, privacy or security, and time-related dimensions (Featherman & Pavlou, 2003). Because online consumers cannot physically inspect products or verify a seller's legitimacy before payment, uncertainty is structurally higher than in offline retail (Pavlou, 2003). A recent systematic review of the perceived-risk–purchase-intention literature confirms that this relationship is one of the most consistently studied in e-commerce research, though the strength of individual risk dimensions varies across product categories and consumer segments — some studies find that specific facets such as delivery risk are not always significant, while others

report that all risk dimensions matter (Phamthi, 2024). Heightened perceived risk is generally associated with hesitation, cart abandonment, and reduced purchase likelihood, giving rise to the second hypothesis:

H2: Perceived risk negatively influences online purchase decisions.

2.3 Trust in Digital Platforms

Trust has been defined as a willingness to accept vulnerability to another party's actions, based on the expectation that the party will behave reliably (Mayer, Davis, & Schoorman, 1995). In digital commerce, trust extends beyond interpersonal exchange to encompass trust in the platform's competence, integrity, and benevolence, and is shaped by security features, brand reputation, review systems, and transparency of policies (McKnight, Choudhury, & Kacmar, 2002; Gefen, 2000). Trust functions as a psychological bridge over the uncertainty that online transactions inherently carry, and the literature positions it either as a direct antecedent of purchase intention or as a mediator that channels the effect of perceived risk into behavioural outcomes, with different structural configurations proposed depending on whether risk is modelled as a driver of trust, an independent parallel predictor, or an outcome of trust. This study adopts the first configuration, treating trust as both a direct predictor of purchase decisions and a mediator of perceived risk's effect, consistent with evidence that trust generally exerts a positive effect on purchase intention while perceived risk exerts a negative one. This motivates the third and fourth hypotheses:

H3: Trust positively influences online purchase decisions.

H4: Trust mediates the relationship between perceived risk and online purchase intention.

2.4 Research Gap and Conceptual Model

Cognitive processing, perceived risk, and trust have each attracted substantial independent attention in the consumer behaviour literature, and recent

reviews continue to call for research that consolidates these strands rather than treating them as parallel, disconnected explanations of digital purchase behaviour, particularly given that the way risk is examined and modelled continues to vary widely across studies depending on the complexity of the framework adopted (Phamthi, 2024). Few studies have combined a cognitive-processing lens with the risk–trust nexus in a single structural model. This study addresses that gap by proposing and testing a unified framework in which cognitive processing and trust exert positive effects on purchase decisions, perceived risk exerts a negative effect, and trust partially mediates the risk–decision relationship.

3. Research Objectives

- a. To analyse the impact of cognitive processing on online purchase decisions.
- b. To examine the effect of perceived risk on consumer purchase intention.
- c. To evaluate the role of trust in influencing digital buying behaviour.
- d. To develop and test a structural model linking cognitive processing, perceived risk, and trust with online purchase decisions.

4. Research Methodology

4.1 Research Design

The study adopts a descriptive-analytical, cross-sectional research design using a quantitative approach, consistent with prior structural-modelling studies of online consumer behaviour.

4.2 Population and Sampling

The target population consists of active online consumers who have made at least one online purchase within the preceding six months. Given the minimum case requirements for stable factor analysis and SEM estimation, a sample of 200–300 valid responses is targeted, which is consistent with sample sizes typically expected for Scopus-indexed empirical submissions. Respondents are recruited through convenience sampling via online

distribution channels, and a screening question is used to confirm recent online purchase experience before survey items are administered.

4.3 Instrument and Measurement

All constructs are measured using multi-item scales adapted from previously validated instruments in the consumer behaviour and technology-acceptance literature, rated on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Demographic items (age, gender, education, online shopping frequency) are included to describe the sample and support control-variable checks.

4.4 Data Analysis Procedure

- a. Reliability analysis using Cronbach's alpha to confirm internal consistency of each construct.
- b. Exploratory Factor Analysis (EFA) to examine underlying factor structure.
- c. Confirmatory Factor Analysis (CFA) to validate the measurement model, including convergent and discriminant validity checks (AVE, CR, and Fornell–Larcker or HTMT criteria).
- d. Structural Equation Modelling (SEM) to test the hypothesised paths (H1–H4) and assess overall model fit.

4.5 Ethical Considerations

The study complies with international research ethics standards. Participation is voluntary, informed consent is obtained prior to data collection, respondent identities remain

confidential, and data are used strictly for academic research purposes and stored securely.

5. Data Analysis and Results

The subsections below present the analytical structure to be reported once the collected dataset has been processed. Reporting thresholds are indicated in place of the study's own computed values, which should be inserted directly from the SPSS/AMOS or SmartPLS output before submission.

5.1 Sample Profile

[Insert demographic breakdown of the final sample: age, gender, education, online shopping frequency, and response rate.]

5.2 Reliability and Validity

Internal consistency is assessed using Cronbach's alpha, with a threshold of $\alpha \geq 0.70$ considered acceptable for each construct (cognitive processing, perceived risk, and trust). Convergent validity is assessed via Average Variance Extracted ($AVE \geq 0.50$) and factor loadings (≥ 0.60), while sampling adequacy is confirmed through the Kaiser-Meyer-Olkin (KMO) statistic (≥ 0.70) and Bartlett's test of sphericity.

5.3 Structural Model Results

Path coefficients, standard errors, t/critical ratios, and p-values for each hypothesised relationship, together with model fit indices (e.g., CFI, TLI, RMSEA, SRMR, or SEM/SmartPLS equivalents), should be reported here and summarised in the table below.

Hypothesis	Proposed Relationship	Status
H1	Cognitive Processing → Online Purchase Decision	To be confirmed from data
H2	Perceived Risk → Online Purchase Decision	To be confirmed from data
H3	Trust → Online Purchase Decision	To be confirmed from data
H4	Trust mediates Perceived Risk → Purchase Intention	To be confirmed from data

5.4 Key Findings (Expected Pattern)

- a. Consumers exhibiting greater analytical (System 2) engagement are expected to report higher purchase confidence.
- b. Perceived risk is expected to significantly reduce purchase intention.
- c. Trust is expected to act as a buffer against uncertainty and to positively influence purchase decisions.
- d. Trust is expected to partially mediate the negative effect of perceived risk on purchase intention.

6. Discussion

The proposed pattern of findings would reinforce behavioural decision theory's central claim that consumers are not purely rational actors but are shaped by cognitive, affective, and perceptual processes (Kahneman, 2011). Cognitive processing is theorised to enhance decision quality by enabling consumers to reconcile heuristic cues with analytical comparison, while perceived risk introduces hesitation rooted in the irreducible uncertainty of remote transactions (Pavlou, 2003; Featherman & Pavlou, 2003). Trust is positioned as the psychological mechanism that narrows this gap, consistent with evidence that trust and perceived risk operate as competing, and at times interacting, forces on purchase intention, since the relationship between the two constructs has been modelled in several alternative structural configurations across the literature. Taken together, the results would suggest that digital platforms cannot rely on functional or price-based benefits alone; psychological reassurance — through security cues, transparency, and consistent reputation signals — is an equally critical lever of conversion.

7. Implications

7.1 Managerial Implications

- a. Enhance trust mechanisms: secure payment gateways, transparent return and refund policies, and verified customer reviews.

- b. Reduce perceived risk: product guarantees, detailed descriptions, high-quality visuals, and clear delivery timelines.
- c. Support cognitive decision-making: comparison tools, structured product information, and AI-based recommendation systems.
- d. Build brand credibility: consistent digital presence and proactive customer engagement across channels.

7.2 Theoretical Contributions

- a. Integrates cognitive processing, perceived risk, and trust into a single structural framework rather than treating them in isolation.
- b. Extends behavioural decision theory into digital commerce contexts.
- c. Offers an empirically testable model using SEM, providing a template for future replication across markets.

8. Limitations and Future Research

8.1 Limitations

- a. Convenience sampling limits the generalisability of findings to the broader population of online consumers.
- b. Self-reported survey data may be subject to common-method bias and social-desirability effects.
- c. The cross-sectional design captures attitudes and behaviour at a single point in time and cannot establish causality.
- d. Geographic and cultural scope may be limited depending on the sampling frame used.

8.2 Future Research Directions

- a. Cross-cultural replication to test the stability of the proposed relationships across markets.
- b. Incorporation of emotional and social-influence variables (e.g., social proof, influencer trust, FOMO) alongside the cognitive-risk-trust framework.

c. Longitudinal designs to examine how trust and risk perception evolve over repeated purchase cycles.

9. Conclusion

This study underscores the growing importance of psychological factors — cognitive processing, perceived risk, and trust — in shaping digital purchase decisions. By integrating these constructs into a single structural model, the research offers a more complete account of why consumers hesitate,

deliberate, or commit when purchasing online than any single construct can provide alone. Trust is theorised as the most consequential of the three factors, functioning as the mechanism through which consumers overcome uncertainty and arrive at confident purchase decisions. As digital markets continue to evolve, understanding the interplay of these psychological dimensions will remain essential for both researchers and practitioners seeking to improve the online consumer experience.

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