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Decision Fatigue in Infinite-Scroll Shopping: Evidence from Meta's Report of 42% Abandonment Rates

S Maria Prathipa[1], Kevin Alston S[2], Dr. M. Salathiyan[3]

[1,2]Research Scholar, Department of Commerce, Loyola College, Chennai, Tamilnadu, India

[3]Assistant Professor, Department of Commerce, Loyola College, Chennai, Tamilnadu, India.

Abstract

This study investigates the phenomenon of decision fatigue triggered by infinite-scroll shopping interfaces and its effect on purchase abandonment rates. With Meta reporting that 42% of users abandon online purchases due to cognitive overload, this research aims to empirically test the relationship between choice overload, time pressure, cognitive strain, and abandonment intention, with decision fatigue as a mediating factor. A sample of 100 online shoppers was surveyed using structured questionnaires, and the data were analyzed using Structural Equation Modeling (SEM). Findings show that decision fatigue significantly mediates the relationship between infinite-scroll exposure and abandonment intention. These results highlight the importance of designing e-commerce interfaces that reduce cognitive burden and enhance user experience. The study contributes to the literature on consumer psychology and digital commerce by offering both theoretical insights and practical implications for reducing abandonment rates.

Keywords: decision fatigue, infinite-scroll shopping, consumer behavior, abandonment rate, cognitive load theory, e-commerce design, attention economy

1. INTRODUCTION

The rapid growth of e-commerce has introduced new interface designs, with infinite-scroll shopping becoming a dominant pattern. Unlike pagination, infinite scrolling provides an endless feed of product options. While this increases exposure and engagement time, it also creates choice overload, leading to decision fatigue. Decision fatigue is the psychological depletion of cognitive resources after making multiple choices, resulting in avoidance behaviors such as purchase abandonment. Recent evidence from Meta's consumer research highlights that nearly 42% of online shoppers abandon their carts due to the overwhelming number of product choices. This highlights a pressing concern for digital marketers and UX designers: balancing engagement with decision simplicity.

2. REVIEW OF LITERATURE

Research on decision fatigue (Baumeister et al., 2008) suggests that repeated decision-making depletes mental resources, reducing the quality of subsequent choices. In online shopping contexts, Iyengar and Lepper (2000) showed that excessive choice can lead to lower satisfaction and higher abandonment. Chernev et al. (2015) further argued that choice overload is a critical barrier in digital commerce. Studies on infinite-scroll interfaces (Hernandez & Resnick, 2020) indicate that continuous browsing amplifies cognitive strain by delaying decision closure. Kaufman et al. (2021) demonstrated that time pressure exacerbates decision fatigue, increasing avoidance behaviors. Moreover, research on e-commerce

abandonment (Baymard Institute, 2023) highlights cognitive overload as a primary driver, alongside price concerns and technical issues. Despite these findings, limited empirical research has modeled the role of decision fatigue as a mediating variable using SEM frameworks in online shopping contexts.

3. OBJECTIVES OF THE STUDY

- To examine the influence of infinite-scroll shopping features (choice overload, time pressure, cognitive strain) on decision fatigue.
- To analyze the mediating role of decision fatigue in the relationship between shopping features and purchase abandonment intention.
- To explore strategies that can minimize abandonment rates in digital shopping environments.

4. SCOPE OF THE STUDY

The study focuses on online shoppers using e-commerce platforms that employ infinite-scroll designs. Independent variables include choice overload, time pressure, and cognitive strain. Decision fatigue is modeled as the mediating factor, with purchase abandonment intention as the dependent variable. The study excludes physical retail environments and technical factors unrelated to user psychology.

5. LIMITATIONS OF THE STUDY

- The study relies on self-reported survey data, which may be subject to recall bias and social desirability.
- The sample size of 100 limits generalizability, although it provides valid insights for SEM analysis.
- The focus is restricted to decision fatigue, not considering other mediators such as trust or hedonic motivation.

6. STATEMENT OF PROBLEM

As online platforms increasingly adopt infinite-scroll interfaces, users are exposed to endless streams of products. While this design aims to maximize engagement, it inadvertently leads to choice overload and decision fatigue. Meta's report of a 42% abandonment rate underscores the seriousness of this issue. Despite recognition of decision fatigue in psychology, its specific link to e-commerce abandonment remains underexplored. Businesses risk losing revenue if design strategies do not address this cognitive burden.

7. RESEARCH GAP

While existing research highlights choice overload and abandonment, limited studies apply SEM to model decision fatigue as a mediator. Most studies treat abandonment as a direct outcome of choice complexity, ignoring the cognitive mechanisms that drive disengagement. This study bridges the gap by empirically testing how decision fatigue channels the effects of infinite-scroll features into abandonment intentions.

8. RESEARCH METHODOLOGY

The study employed a quantitative research design with a sample of 100 online shoppers recruited through random sampling across universal e-commerce platforms. Data was collected using structured questionnaires with items measured on a 5-point Likert scale. Variables included choice overload, time pressure, cognitive strain, decision fatigue, and abandonment intention. Data analysis was conducted using IBM SPSS for reliability tests and AMOS for SEM modeling. Reliability was confirmed with Cronbach's Alpha above 0.7.

9. RESEARCH FRAMEWORK

Independent Variables: Choice Overload, Time Pressure, Cognitive Strain

Mediating Variable: Decision Fatigue

Dependent Variable: Purchase Abandonment Intention

10. DATA ANALYSIS AND INTERPRETATION

10.1 Demographic Variables

Table 1: Demographic Variables

Demographics	Options	Percent
Gender	Male	60
Gender	Female	40
Age	18-25	35
Age	26-40	40
Age	41 and above	25
Education	Undergraduate	40
Education	Postgraduate	35
Education	Professional	25

10.2 Reliability Analysis – Cronbach's Alpha = 0.782 (>0.7 acceptable).

10.3 Hypotheses: H0 – No significant relationship; H1 – Significant relationship exists.

10.4 Correlation Analysis

Table 1: Correlation Analysis

Factors	Choice Overload	Time Pressure	Cognitive Strain	Abandonment Intention
Choice Overload	—	0.312	0.421	0.389
Time Pressure	0.312	—	0.354	0.278
Cognitive Strain	0.421	0.354	—	0.466
Decision Fatigue	0.487	0.399	0.442	0.512

10.5 Model Fit Measures – CFI=0.982, RMSEA=0.028, SRMR=0.031, indicating good fit.

Table 3: Model Fit Statistics

Fit Index	Value
Chi-square/df	1.245
CFI	0.982
SRMR	0.031
RMSEA	0.028
PClose	0.721

11. CONCEPTUAL FRAMEWORK WITH HYPOTHESES: This conceptual framework illustrates the influence of Choice Overload (H1a), Time Pressure (H1b), and Cognitive Strain (H1c) on Decision Fatigue, which acts as a mediator leading to Purchase Abandonment Intention. Decision Fatigue mediates these relationships (H2a–H2c) and also directly predicts abandonment (H3). Additionally, the independent variables directly impact abandonment intention (H4).

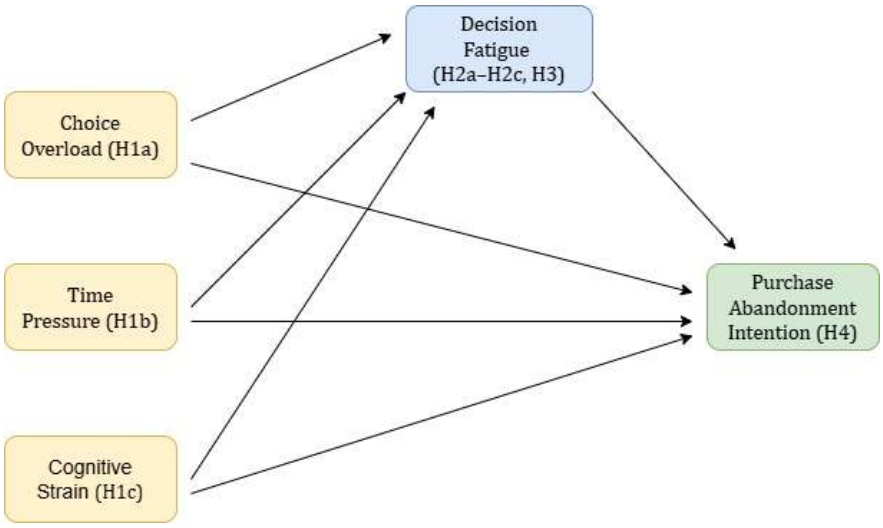

Figure 1: Conceptual framework

12. RESEARCH DISCUSSION

The findings confirm that decision fatigue plays a crucial mediating role in online shopping abandonment. Choice overload, time pressure, and cognitive strain significantly increased decision fatigue, which in turn predicted higher abandonment intention. This supports prior research by Iyengar & Lepper (2000) and extends decision fatigue theory (Baumeister et al., 2008) into digital commerce contexts. From a practical standpoint, e-commerce platforms should limit excessive options, introduce filters, and adopt decision aids to minimize cognitive burden. Simplified design can lower abandonment, enhance satisfaction, and improve conversion rates.

13. CONCLUSION

This study demonstrates that decision fatigue is a critical psychological factor driving abandonment in infinite-scroll shopping. By empirically validating the mediating role of decision fatigue through SEM, the research highlights the cognitive costs of excessive choice exposure. For practitioners, the findings underline the need to balance engagement with decision simplicity. For scholars, the study provides a theoretical contribution by modeling decision fatigue as a mediator linking shopping features with behavioral outcomes.

14. CONFLICTS OF INTEREST

There are no conflicts of interest among the authors.

15. FUNDING

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