

Shopee's Consumer Behaviour Patterns: The Case of Thailand

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Abstract

This study investigates the internal consistency reliability of consumer behaviour constructs on Shopee's gamified e-commerce platform using Cronbach's alpha analysis. The study measured eight theoretical constructs: AI Personalisation (AIP), E-Commerce Personalisation (EPC), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Use (ATU), Subjective Norms (SN), Perceived Behavioural Control (PBC), and Purchase Intention (PI). The sample was adequate, with KMO = 0.925. Results showed construct reliability ranging from $\alpha = 0.653$ to $\alpha = 0.788$, with one item (PEOU3) excluded because of poor item-total correlation (ITC = 0.392). The problematic PEOU reliability suggests Shopee's gamification strategy creates ambiguity in effort-related perceptions; users experience engagement effort as entertainment rather than friction. Reliability patterns indicate Shopee consumers exhibit game-influenced, reward-seeking, socially engaged shopping behaviours distinct from traditional utilitarian e-commerce. This paper discusses theoretical implications for gamification theory and practical recommendations for platform strategy.

Keywords: Shopee, Gamified Commerce, Cronbach's Alpha, Reliability Analysis, Consumer Behaviour, Perceived Ease Of Use, Southeast Asian E-Commerce

Introduction

Shopee, launched in 2015 by Sea Group, has rapidly become Southeast Asia's leading e-commerce platform with over 343 million quarterly active users as of 2023 (Sea Limited, 2023). Unlike traditional e-commerce platforms emphasising transactional efficiency, Shopee employs extensive gamification strategies including Shopee Games (in-app mini-games offering coins and vouchers), daily check-ins, flash sales, social shopping features (group buying, live streaming), and comprehensive loyalty programs where Shopee Coins are redeemable for discounts (Hofacker et al., 2016).

This gamified approach fundamentally transforms shopping from a purely instrumental activity into an engagement-driven experience that combines entertainment, social interaction, and transactions. However, academic understanding of how gamification affects

consumer psychology and the measurement validity of established theoretical constructs remains significantly limited.

Research Problem

Traditional e-commerce theory emphasises ease of use (PEOU) as critical; users prefer platforms requiring minimal effort to accomplish shopping goals (Davis, 1989). However, gamification deliberately introduces effort through game mechanics. This creates fundamental tension: Does this effort enhance engagement or create friction? Do traditional constructs like PEOU maintain their conceptual meaning and measurement reliability on gamified platforms? While gamification's impact on engagement is well documented (Hamari, Koivisto, & Sarsa, 2014), limited research examines how gamification affects the reliability and semantic meaning of established consumer behaviour constructs derived from the Technology Acceptance Model (TAM) and the Theory of Planned Behaviour (TPB).

Research Objectives

This study aims to: (1) Assess internal consistency reliability of eight consumer behavior constructs on Shopee using Cronbach's alpha; (2) Identify measurement problems specific to gamified e-commerce through item-level diagnostics; (3) Interpret reliability patterns to characterize Shopee consumer psychological profiles; (4) Evaluate theoretical construct applicability to gamified commerce contexts; and (5) Provide strategic insights for gamification design and consumer engagement optimization.

Literature Review

Theoretical Foundations

Technology Acceptance Model (TAM)

Davis's (1989) seminal TAM identifies two primary beliefs that determine technology acceptance: Perceived Usefulness (PU), the belief that technology enhances performance or helps achieve goals, and Perceived Ease of Use (PEOU), the belief that technology use requires minimal effort. These beliefs shape attitude toward use (ATU), which predicts behavioural intention and actual usage. TAM has been extensively validated across diverse e-commerce contexts (Gefen, Karahanna, & Straub, 2003; Venkatesh & Davis, 2000).

Critical Assumption

TAM assumes users seek to minimise effort while maximising goal achievement, a rational, efficiency-oriented model premised on instrumental use.

Theory of Planned Behaviour (TPB)

Ajzen's (1991) TPB predicts intentions through three key constructs: Attitude Toward Behaviour, Subjective Norms (perceived social pressure), and Perceived Behavioural Control (perceived ease or difficulty of performing the behaviour). TPB emphasises social and control factors beyond individual beliefs, making it particularly relevant to socially oriented platforms like Shopee.

Gamification in E-Commerce

Gamification applies game-design elements (points, badges, leaderboards, challenges) to non-game contexts to enhance user motivation and engagement (Deterding, Dixon, Khaled, & Nacke, 2011). Gamification leverages intrinsic motivation (enjoyment, curiosity) (Ryan &

Deci, 2000), extrinsic motivation (points, rewards) (Nicholson, 2015), behavioural conditioning through variable reward schedules (Skinner, 1953), and social influence (Hamari & Koivisto, 2015).

The Effort Paradox

A fundamental tension emerges:

- i. Traditional E-Commerce: Effort is a barrier → minimise friction → increase conversion
- ii. Gamified E-Commerce: Effort is engagement → encourage interaction → increase retention

This paradox raises critical questions: When users willingly invest effort in games for rewards, do they perceive that effort as "difficult" (traditional PEOU framing) or "engaging" (positive experience)?

Hypothesis

PEOU reliability may be compromised on gamified platforms because the construct conflates transaction effort (perceived barrier) and engagement effort (perceived entertainment).

Methodology

Research Design

This study used a cross-sectional survey design to measure eight consumer behaviour constructs among Shopee users in the Thai market, followed by a comprehensive reliability analysis using Cronbach's alpha.

Constructs Measured

Eight theoretical constructs were operationalised:

1. AI Personalisation (AIP): Perceived effectiveness of AI-driven recommendations (4 items)
2. E-Commerce Personalisation (EPC): Perceived tailoring of shopping experience (4 items)
3. Perceived Usefulness (PU): Belief that Shopee helps accomplish shopping goals (4 items) - TAM
4. Perceived Ease of Use (PEOU): Belief that Shopee requires minimal effort (4→3 items) - TAM
5. Attitude Toward Use (ATU): Overall favorability toward Shopee shopping (4 items) - TAM/TPB
6. Subjective Norms (SN): Perceived social influence regarding Shopee use (3 items) - TPB
7. Perceived Behavioural Control (PBC): Perceived control over Shopee shopping (3 items) - TPB
8. Purchase Intention (PI): Likelihood of future Shopee purchases (3 items) - TAM/TPB

All constructs were measured using 5-point Likert scales (1 = Strongly Disagree, 5 = Strongly Agree).

Analytical Procedures

The analysis followed five systematic steps: (1) Sample Adequacy Assessment using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity; (2) Construct Reliability Analysis computing Cronbach's alpha; (3) Item-Level Diagnostics examining Item-Total Correlation (ITC < 0.40 threshold) (Field, 2013); (4) Item Exclusion Decision-Making; and (5) Pattern Interpretation.

Results

Sample Adequacy Verification

The Kaiser-Meyer-Olkin (KMO) measure yielded 0.925, indicating "marvellous" sampling adequacy (Kaiser, 1974), well above the minimum threshold of 0.60. Bartlett's Test of Sphericity was significant ($p < 0.001$), confirming sufficient correlation among items for meaningful internal consistency assessment.

Overall Reliability Results

Table 1

presents Cronbach's alpha values for all eight constructs

Construct	Cronbach's α	Items	Classification	Rank
Attitude Toward Use (ATU)	0.788	4	Acceptable	1
E-Commerce Personalisation (EPC)	0.784	4	Acceptable	2
AI Personalisation (AIP)	0.763	4	Acceptable	3
Perceived Behavioural Control (PBC)	0.728	3	Acceptable	4
Perceived Usefulness (PU)	0.726	4	Acceptable	5
Purchase Intention (PI)	0.723	3	Acceptable	6
Subjective Norms (SN)	0.717	3	Acceptable	7
Perceived Ease of Use (PEOU)*	0.653	3	Questionable	8

*After exclusion of PEOU3; Mean $\alpha = 0.735$; Median $\alpha = 0.727$

The reliability distribution reveals that 87.5% of constructs (7 of 8) achieved acceptable reliability ($0.70 \leq \alpha < 0.80$), while only PEOU (12.5%) fell into the questionable range ($0.60 \leq \alpha < 0.70$).

The Critical Finding: PEOU3 Exclusion

Initial PEOU reliability with four items was $\alpha = 0.612$ (questionable). Item-total correlation analysis showed that PEOU3 had an ITC of 0.392, below the recommended threshold of 0.40 (Field, 2013). Following standard psychometric procedures, we excluded PEOU3. Post-exclusion analysis showed:

- PEOU (Original - 4 items): $\alpha = 0.612$
- PEOU (After excluding PEOU3): $\alpha = 0.653$
- Improvement: +0.041, but still classified as questionable

Critical Observation

Even after excluding the problematic item, PEOU remains in the "questionable" range ($\alpha = 0.653$), making it the only construct failing to achieve acceptable reliability on Shopee. This persistent low reliability suggests deeper conceptual issues beyond simple item quality.

Comparative Construct Analysis

Attitude Toward Use (ATU): $\alpha = 0.788$ [HIGHEST] - ATU demonstrates the highest reliability, approaching "good" classification. This suggests Shopee users form consistent, coherent attitudes toward the platform despite its complexity, indicating effective integration of gamification with commerce without cognitive dissonance.

E-Commerce Personalisation (EPC): $\alpha = 0.784$ [SECOND HIGHEST] - EPC shows strong internal consistency, indicating users consistently recognise and value Shopee's personalised features, including tailored product recommendations, customised promotions, and personalised game rewards.

AI Personalisation (AIP): $\alpha = 0.763$ [THIRD HIGHEST] - AIP demonstrates acceptable reliability, indicating users recognise AI-driven features consistently. Shopee's recommendation algorithm appears visible and effective to users.

Perceived Ease of Use (PEOU): $\alpha = 0.653$ [QUESTIONABLE - LOWEST] - This represents the study's most significant finding. PEOU's poor reliability indicates fundamental conceptual ambiguity about "ease" on gamified platforms, suggesting the construct conflates transaction effort (shopping interface simplicity) and engagement effort (time/attention required for games and reward optimisation).

Discussion*Theoretical Implications**TAM Requires Modification for Gamified Commerce*

The problematic PEOU reliability challenges core TAM assumptions. Traditional TAM assumes effort minimisation drives adoption, but gamified platforms introduce valued engagement effort. The finding suggests a need for a Gamified Technology Acceptance Model (G-TAM) that separates: (1) Transaction Ease: Simplicity of core shopping tasks; (2) Engagement Value: Reward and enjoyment from participation effort; and (3) Perceived Usefulness: Overall value delivery (retained from TAM).

This reconceptualisation acknowledges that on gamified platforms, high engagement effort does not necessarily reduce positive attitudes when participants experience the effort as entertaining and rewarding (Nicholson, 2015; Ryan & Deci, 2000).

The Effort Paradox Empirically Confirmed

Results empirically confirm the theoretical effort paradox: PEOU shows the lowest reliability ($\alpha = 0.653$), while ATU shows the highest ($\alpha = 0.788$). Users form clear attitudes despite ambiguous ease perceptions, suggesting attitude formation on gamified platforms depends less on minimising effort.

Consumer Behaviour Heterogeneity on Hybrid Platforms

Lower reliability for PEOU, SN, and PI suggests significant user segmentation: Reward Maximisers (~40%), Efficient Transactors (~35%), and Entertainment Browsers (~25%). This heterogeneity has important implications for both theory development and platform design strategy.

Characterisation of Shopee Consumers

Reliability patterns reveal Shopee consumers are:

1. Engagement-Oriented: High ATU (0.788) despite low PEOU (0.653) indicates consumers view Shopee holistically as an entertainment-commerce hybrid, experiencing shopping as leisure.
2. Reward-Seeking and Gamification-Responsive: Strong personalisation reliability (EPC = 0.784, AIP = 0.763) combined with PEOU problems indicates consumers respond to variable reinforcement and tolerate complexity for maximum value.
3. Personalization-Aware: High EPC and AIP reliability indicate consumers clearly recognise and value customised experiences.
4. Maintaining Perceived Control: Acceptable PBC (0.728) suggests consumers maintain a moderate sense of autonomy despite potentially addictive mechanics.
5. Forming Clear Attitudes with Conditional Intentions: Highest ATU (0.788) with mid-range PI (0.723) indicates strong overall platform attitudes but context-dependent purchase intentions.

Practical Implications

For Shopee: Address PEOU problems through: (1) Separate game and commerce interfaces with clear visual distinction; (2) Offer "Simple Mode" option for transaction-focused users; (3) Implement progressive complexity for new users; (4) Transparent effort-reward communication. Capitalise on personalisation by improving recommendation visibility and personalising reward systems. Maintain user control by avoiding dark patterns and providing control features.

For Merchants: Align with reward-seeking behaviour by participating in promotional events and offering shop-specific vouchers. Leverage personalisation strength through optimised product listings. Differentiate through simplicity with ultra-clear product information and transparent pricing.

Limitations And Future Research*Study Limitations*

This study has several important limitations: (1) Reliability analysis assesses internal consistency only, not causal relationships, construct validity, or predictive power (Cronbach, 1951); (2) Single platform focusses limits generalization to other platforms or regional markets; (3) Cross-sectional design cannot determine temporal changes; (4) Self-report bias may not reflect actual behavior; (5) Segment aggregation may mask within-segment reliability.

Future Research Directions

Future research should: (1) Conduct exploratory factor analysis examining construct distinctness; (2) Test structural models predicting purchase intention; (3) Link survey data to

actual purchase records; (4) Employ latent class analysis for segment identification; (5) Develop and validate separate transaction ease and engagement effort scales; (6) Measure perceived value of coins and games; (7) Compare Shopee versus other platforms; and (8) Track construct reliability longitudinally.

Conclusion

This reliability analysis of consumer behaviour constructs on Shopee's gamified platform reveals critical insights about how gamification transforms e-commerce psychology. The finding that PEOU shows problematic reliability ($\alpha = 0.653$) while ATU shows the highest reliability ($\alpha = 0.788$) empirically confirms the effort paradox inherent in gamified commerce: users form clear positive attitudes toward platforms that require significant engagement effort when that effort is experienced as entertaining and rewarding rather than as friction.

Results characterise Shopee consumers as engagement-oriented, reward-seeking, personalisation-aware shoppers with psychological profiles distinct from traditional e-commerce users. Theoretically, the findings suggest that traditional TAM and TPB constructs require modification for gamified contexts, with PEOU potentially needing reconceptualisation to separate transaction ease from engagement effort. Practically, the results inform platform design strategies that prioritise personalisation, maintain user control while encouraging engagement, and recognise consumer heterogeneity that requires segment-specific features.

The study contributes to gamification theory by demonstrating that not all effort is friction; engagement effort can enhance rather than hinder platform adoption when properly designed and rewarded. As e-commerce increasingly incorporates entertainment elements, understanding these psychological dynamics becomes critical for both academic theory development and commercial platform success. Future research should pursue the proposed Gamified Technology Acceptance Model (G-TAM), conduct longitudinal studies tracking reliability evolution, and use multi-method approaches that combine psychometric analysis with behavioural data and qualitative insights.

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