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## E-Commerce Gamification and Regulatory Compliance in Driving Purchase Intention through Digital Trust

By

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### Abstract

This study aims to analyze the influence of consumer protection regulatory compliance and gamification of e-commerce applications on consumer purchase intention, with digital trust as a moderating variable. Amid growing consumer concerns over data breaches and the importance of user engagement, regulatory and interactive aspects are crucial in fostering purchase intentions on digital platforms. The study adopts a quantitative explanatory approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4, involving 200 active e-commerce users in Indonesia. Results reveal that both regulatory compliance and gamification have a positive impact on purchase intention. Digital trust not only directly influences purchase intention but also mediates and moderates the relationship between regulatory compliance, gamification, and consumer behavior. These findings highlight the importance of integrating legal compliance, feature innovation, and the development of digital trust to enhance the effectiveness of e-commerce marketing strategies.

**Keywords:** Consumer Protection Regulation, Gamification, Purchase Intention, Digital Trust, E-Commerce

### Introduction

In the rapidly evolving digital era, e-commerce has become the backbone of the global economy, with the global market value projected to reach \$6.3 trillion by 2024 (Statista Research Department, 2025). In Indonesia, personal data protection in digital transactions remains a major challenge. The Ministry of Communication and Information Technology (Kominfo) reported that from 2019 to mid-2023, there were 94 cases of personal data breaches, with 35 cases occurring in 2023 alone, making it the year with the highest number of incidents (ERA.id, 2023). To provide a clearer overview of personal data breach trends in digital transactions in Indonesia, the following diagram presents the number of recorded cases from 2019 to mid-2023. The data indicate a significant increase in 2023, which recorded the highest number of cases compared to previous years.

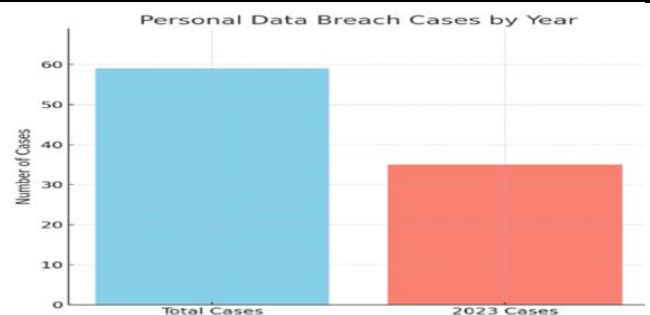


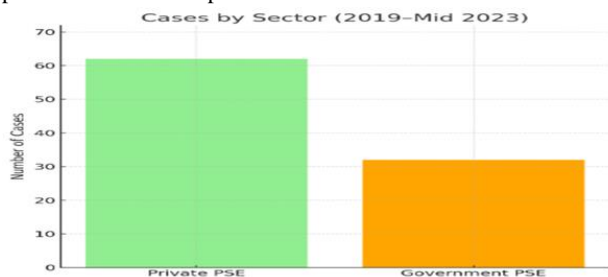
Figure 1. Number of Personal Data Breach Cases by Year and Sector (2019–2023)

Source: Adapted from ERA.id (2023), Ministry of Communication and Information Technology (2023), in Statista Research Department (2025).

A total of 62 cases involved private Electronic System Operators (ESOs), including the e-commerce sector, while the remaining 32 cases were related to government ESOs (Lavinda, 2023). In addition to examining trends over time, it is also important to



understand the distribution of personal data breaches based on the type of Electronic System Operator (ESO). The following diagram shows that the majority of cases occurred in private ESOs, including e-commerce platforms, while the rest originated from government institutions, indicating serious challenges in data protection within the private sector.



**Figure 2. Distribution of Personal Data Breach Cases by Type of Electronic System Operator in Indonesia (2019–2023)**

Source: Adapted from Lavinda (2023).

The increasing number of cases indicates that violations of personal data protection in the e-commerce sector have become one of the main consumer concerns, potentially hindering growth and trust in digital platforms in Indonesia. On the other hand, gamification in e-commerce applications has emerged as an effective marketing strategy to enhance consumer engagement and brand loyalty. Major e-commerce platforms in Indonesia, such as Shopee and Tokopedia, have successfully implemented gamification in their campaigns. Shopee, for instance, frequently organizes interactive games such as Shopee Tanam and Shopee Lucky Prize, where users can win vouchers, free products, or Shopee coins that can be used for shopping. This approach not only increases user engagement but also encourages more frequent purchases (Digima, 2024).

The gamification strategy implemented by Shopee has implications for changes in consumer behavior, particularly by extending application usage time and increasing customer engagement (Salsabila et al., 2025). Gamification also has a positive and significant effect on customer loyalty, where a 1% increase in gamification value leads to a 45.9% increase in purchase intention (Salsabila et al., 2025). Meanwhile, digital trust becomes a crucial factor that bridges regulation and innovation within the digital ecosystem.

This issue becomes even more complex when viewed in the Indonesian local context. Based on the We Are Social x Kepios (2024) report, of the 181 million internet users in Indonesia, only around 58.3% feel confident and trust digital transaction systems, particularly in e-commerce (Simon Kemp, 2024). To better understand the level of public trust in digital transaction systems in Indonesia, the following figure presents data from the We Are Social x Kepios (2024) report.

This finding indicates a gap between technological advancement and consumers' psychological readiness. Amid the widespread use of gamification features such as reward points, spin wheels, and shopping missions, not all of these strategies are able to build

digital trust that ultimately leads to purchase decisions. A survey conducted by Katadata Insight Center (2023) also found that consumer purchasing decisions are more influenced by security and trust factors than by innovative shopping features (Katadata, 2022). This suggests that although e-commerce applications offer interactive gamification-based features, consumers still consider compliance with consumer protection regulations as a fundamental prerequisite for trust.

Research on gamification in e-commerce and digital trust has gained significant attention in digital consumer behavior studies. Mehta and Arora (2024) found that gamification in digital payment systems increases customer engagement and satisfaction, although poor design may lead to user fatigue. Similarly, Ilyas et al. (2025) emphasized interactive experience as a mediator between gamification strategies and consumer engagement, while Zhang et al. (2025) showed that gamification marketing enhances loyalty by fulfilling utilitarian, social, and experiential needs, though comprehensive e-commerce models remain limited.

Digital trust (e-trust) also plays a crucial role in shaping purchase intention and loyalty. Studies by Zaheer et al. (2024) and Hidayah (2025) reported that e-trust significantly influences e-satisfaction and e-loyalty, with security and privacy acting as key mediators. This is supported by Ma et al. (2025), who highlighted that perceived risk and psychological distance reduce consumer trust. Furthermore, Che et al. (2023) demonstrated that gamification design goals, personalization, and interaction encourages purchase intention, while Al-Adwan et al. (2024) found that gamified marketing in the metaverse promotes loyalty and positive word-of-mouth.

However, studies integrating regulatory compliance, gamification design, and digital trust in influencing consumer purchase intention remain limited. This study's novelty lies in combining these three dimensions regulatory compliance, gamification, and digital trust into a unified framework within the e-commerce context, offering both conceptual expansion and empirical contributions bridging legal and psychological aspects of digital consumers.

This study is important as it addresses three key aspects of sustainable e-commerce development: regulation, digital innovation, and consumer behavior. Amid intensifying platform competition and increasing consumer literacy, understanding how consumer protection compliance and gamification shape digital trust and purchase intention is highly relevant. The findings are expected to contribute theoretically to digital consumer behavior models and practically for e-commerce businesses and regulators in designing more effective and sustainable marketing and consumer protection strategies. This aligns with the national objective to strengthen an inclusive and ethical digital economy set by (Kementerian Perdagangan Republik Indonesia., 2025).

Based on the above discussion, this study focuses on analyzing the influence of consumer protection regulatory compliance and e-commerce application gamification on consumer purchase intention, with digital trust considered as a moderating variable. The objectives of this study are to: (1) examine the effect of

regulatory compliance on digital trust; (2) analyze the impact of gamification on digital trust; (3) evaluate whether digital trust strengthens or weakens purchase intention; and (4) test the mediating role of digital trust in the relationship between regulatory compliance and gamification with consumer purchase intention. Through this approach, the study is expected to enrich the academic literature and assist industry practitioners in developing data-driven policies that address current digitalization challenges.

### Research Elaboration

This study develops a conceptual framework integrating regulatory compliance, e-commerce gamification, digital trust, and consumer purchase intention. Consumer protection regulatory compliance refers to how e-commerce platforms adhere to laws governing consumer rights, including privacy, data security, and transparency of product information. From the perspective of Regulatory Compliance Theory, firms that comply with legal requirements gain legitimacy and build consumer trust. Evidence of this importance can be observed in the case of Shein, which violated consumer protection rules in the European Union, highlighting the necessity of regulatory compliance in maintaining consumer confidence (Hancock, 2025). In line with Consumer Protection Theory, transparency and protection of consumer rights directly influence purchasing decisions. Research by Morsink (2024) demonstrates that transparency in product information, pricing, inventory, and processes significantly increases consumer trust and purchase intention (Morsink, 2024). Furthermore, Perceived Legal Assurance Theory explains that consumers feel more secure when companies demonstrate legal compliance, thereby increasing purchase intention. Transparency in the use of emerging technologies, such as artificial intelligence in financial services, also becomes crucial to ensure accountability and consumer trust (Dupuy, 2024).

Gamification in e-commerce applications refers to the implementation of game elements such as points, badges, and leaderboards in non-game contexts to enhance user engagement. Self-Determination Theory (SDT) suggests that intrinsic motivation generated by gamification elements can encourage purchasing behavior. Oliveira et al. (2021) reviewed how gamification influences users' flow experience and intrinsic motivation (Oliveira et al., 2021). Flow Theory further explains that users experience deep involvement and enjoyment when interacting with gamified systems, which increases purchase intention. Oliveira et al. (2021) also highlighted that gamification elements facilitate the formation of flow experiences. Additionally, the Gamification Engagement Model emphasizes that components such as rewards and competition increase user engagement and loyalty. Although not explicitly labeled, Oliveira et al. (2021) provide insights into how gamification mechanisms enhance user engagement and influence behavioral outcomes (Oliveira et al., 2021).

Digital trust functions as a moderating variable in this study and refers to consumers' belief that digital platforms are secure,

transparent, and reliable. Trust Moderation Theory (TMT) or trust as a boundary condition explains that trust not only emerges as an outcome of perceived security or application design but also moderates the relationship between variables such as regulatory compliance, gamification, and purchase intention (Fausiy et al., 2025; Zahwani et al., 2023). The Technology Acceptance Model (TAM) also supports this role by incorporating perceived trust as a moderating factor influencing technology acceptance relationships, including perceived usefulness and perceived ease of use (Capatina et al., 2024). Moreover, Cognitive Trust Theory states that trust is formed from perceptions of security, transparency, and system competence. When consumers perceive a digital platform as reliable and transparent, they become more receptive to application features, including regulatory policies and gamification mechanisms (Tian et al., 2023).

Consumer purchase intention represents the psychological tendency of consumers to buy a product based on perceptions, attitudes, and trust toward a platform. The Theory of Planned Behavior (TPB) explains that attitudes, subjective norms, and perceived behavioral control influence purchase intention. Zhang and Chen (2023) applied TPB in the context of e-commerce live streaming, confirming the relevance of these factors in shaping purchase intention (Zhang & Chen, 2023). The Consumer Decision Process Model further positions purchase intention as a cognitive stage preceding actual purchase decisions. Siregar et al. (2024) analyzed the formation of purchase intention for skincare products on TikTok using TPB-based analysis (Siregar et al., 2024). Additionally, the Purchase Intention Model in E-Commerce highlights the role of UI/UX, trust, and gamification in influencing purchase intention. This perspective is supported by Miswanto and Nonis, who emphasize the importance of platform experience and trust in shaping purchase intention (Miswanto & Maria Febriani Nonis, 2022).

Based on the theoretical foundation, the hypotheses of this study are formulated as follows. First, direct relationships are proposed: H1 states that consumer protection regulatory compliance positively influences consumer purchase intention; H2 proposes that e-commerce gamification positively influences consumer purchase intention; and H3 suggests that digital trust positively influences consumer purchase intention. Furthermore, moderation hypotheses are proposed, where digital trust moderates the relationship between consumer protection regulatory compliance and purchase intention (H4), and digital trust moderates the relationship between e-commerce gamification and purchase intention (H5).

This study employs a quantitative explanatory research approach to examine causal relationships among variables based on the established conceptual framework (Sari et al., 2023). The analysis uses Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4, which enables the evaluation of complex structural relationships, including moderating effects. The population consists of active e-commerce users in Indonesia who have interacted with gamification features and conducted online purchases within the last six months. The sampling technique used

is purposive sampling based on specific criteria: respondents must have used e-commerce applications with gamification features, made at least one purchase in the last six months, and understood security features and consumer protection policies (Salmaa, 2023).

The sample size determination follows guidelines for PLS-SEM proposed by Hair et al. (2020), which recommend five to ten times the number of indicators. This study includes four latent variables with 20 indicators, resulting in a minimum sample size of 100 respondents and ideal sample size of 200 respondents. To improve statistical power, the targeted sample size is 200–250 respondents (Hair et al., 2020). Data are primary data collected through an online questionnaire using a five-point Likert scale ranging from strongly disagree to strongly agree. The questionnaire measures consumer protection regulatory compliance, e-commerce gamification, digital trust, consumer purchase intention, and respondent profiles.

Data analysis is conducted using PLS-SEM with SmartPLS 4, which is suitable for complex models, non-normal data, and moderation testing. The analysis consists of outer model and inner model evaluation. The outer model assesses validity and reliability through convergent validity (outer loading > 0.70; AVE > 0.50), discriminant validity using the Fornell-Larcker criterion, HTMT (< 0.90), and reliability using Cronbach’s alpha and composite reliability (> 0.70). The inner model evaluates structural relationships using R-square to measure predictive power, path coefficients and bootstrapping (5000 subsamples) to test significance ( $t > 1.96$ ;  $p < 0.05$ ), and effect size ( $f^2$ ) categorized as small (0.02), medium (0.15), and large (0.35).

Moderation analysis is performed by creating interaction constructs between regulatory compliance and digital trust, and between gamification and digital trust, using the product indicator or two-stage approach in SmartPLS. The interaction effect is considered significant when the interaction path meets the significance criteria ( $t > 1.96$ ;  $p < 0.05$ ). Moderation is interpreted as partial moderation when both direct and interaction effects are significant, and as pure moderation when only the interaction effect is significant.

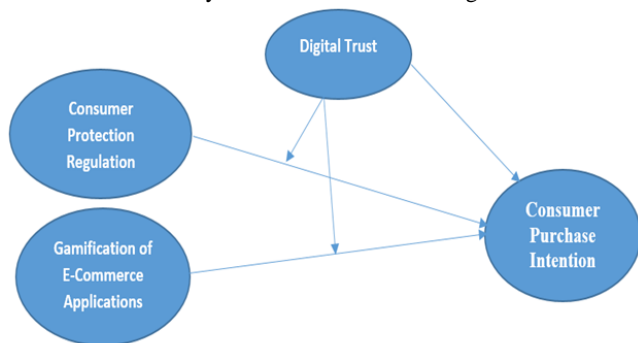


Figure 1. Conceptual Framework

Results and Discussion

The demographic profile of respondents in this study provides an overview of the characteristics of the individuals who participated in the survey. A total of 200 respondents were involved,

categorized based on gender, age, education level, occupation, e-commerce usage frequency, and the most frequently used e-commerce platform. The distribution of respondents across these categories is illustrated in the following bar chart.

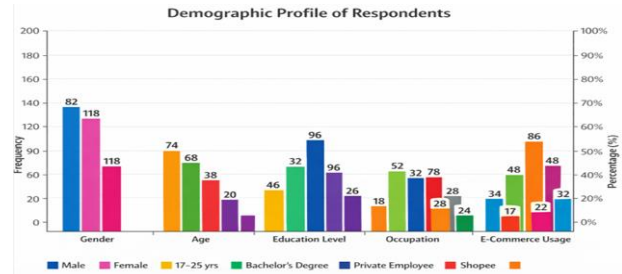


Figure 2. Demographic profile of respondents

Source: Survey data processed (2026)

The demographic profile of 200 respondents shows that females dominate the sample with 59.0%, while males account for 41.0%. Most respondents are aged 17–25 years (37.0%) and 26–35 years (34.0%). In terms of education, the majority hold a bachelor’s degree (48.0%). Based on occupation, private employees represent the largest group (39.0%), followed by students (26.0%). Most respondents use e-commerce platforms 3–5 times per month (36.0%). Shopee is identified as the most frequently used platform (43.0%), followed by Tokopedia (24.0%) and TikTok Shop (16.0%).

A. Measurement Model Results (Outer Model)

The outer loading analysis was conducted to assess the convergent validity of each indicator in measuring its respective construct. The results of the outer loading values are presented below.

Table 1. Outer Loading

Code	Construct	Outer Loading
X1.1	Consumer Protection Regulation	0.876
X1.2	Consumer Protection Regulation	0.877
X1.3	Consumer Protection Regulation	0.889
X1.4	Consumer Protection Regulation	0.835
X1.5	Consumer Protection Regulation	0.865
X2.1	E-Commerce Gamification	0.880
X2.2	E-Commerce Gamification	0.883
X2.3	E-Commerce Gamification	0.879
X2.4	E-Commerce Gamification	0.877
X2.5	E-Commerce Gamification	0.893
Y1	Consumer Purchase Intention	0.825
Y2	Consumer Purchase Intention	0.831
Y3	Consumer Purchase Intention	0.759
Y4	Consumer Purchase Intention	0.848

Code	Construct	Outer Loading
Y5	Consumer Purchase Intention	0.788
Z1	Digital Trust	0.858
Z2	Digital Trust	0.864
Z3	Digital Trust	0.842
Z4	Digital Trust	0.873
Z5	Digital Trust	0.873
Int1	Digital Trust × Gamification	1.000
Int2	Digital Trust × Consumer Protection Regulation	1.000

Source: Survey data processed (2026)

The outer loading results indicate that all indicators have values above the recommended threshold of 0.70, demonstrating good convergent validity. The Consumer Protection Regulation construct shows outer loading values ranging from 0.835 to 0.889, indicating that all indicators strongly measure the construct. The E-Commerce Gamification construct also exhibits high outer loadings between 0.877 and 0.893, confirming the reliability of the indicators. For the Consumer Purchase Intention construct, the outer loading values range from 0.759 to 0.848, which are still acceptable and indicate adequate convergent validity. Meanwhile, the Digital Trust construct demonstrates strong indicator reliability with outer loading values between 0.842 and 0.873. Additionally, the interaction constructs show outer loading values of 1.000, indicating perfect loading due to the product indicator approach in the moderation model. Overall, these results confirm that all indicators are valid and suitable for further structural model analysis.

Discriminant validity was assessed using the HTMT criterion to evaluate the distinctiveness between constructs in the research model.

Table 2. Discriminant Validity

Construct 1	Construct 2	HTMT
E-Commerce Gamification	Digital Trust	0.081
E-Commerce Gamification	Consumer Purchase Intention	0.280
E-Commerce Gamification	Consumer Protection Regulation	0.081
E-Commerce Gamification	Moderation (Z × Gamification)	0.114
E-Commerce Gamification	Moderation (Z × Regulation)	0.044
Digital Trust	Consumer Purchase	0.425

Construct 1	Construct 2	HTMT
	Intention	
Digital Trust	Consumer Protection Regulation	0.106
Digital Trust	Moderation (Z × Gamification)	0.155
Digital Trust	Moderation (Z × Regulation)	0.022
Consumer Purchase Intention	Consumer Protection Regulation	0.320
Consumer Purchase Intention	Moderation (Z × Gamification)	0.362
Consumer Purchase Intention	Moderation (Z × Regulation)	0.251
Consumer Protection Regulation	Moderation (Z × Gamification)	0.026
Consumer Protection Regulation	Moderation (Z × Regulation)	0.152
Moderation (Z × Gamification)	Moderation (Z × Regulation)	0.069

Source: Survey data processed (2026)

The HTMT results show that all values are below the recommended threshold of 0.90, indicating adequate discriminant validity among the constructs. The highest HTMT value is found between Digital Trust and Consumer Purchase Intention (0.425), which is still well below the cutoff value, suggesting that the two constructs are empirically distinct. Similarly, the relationships between E-Commerce Gamification, Consumer Protection Regulation, Digital Trust, and Consumer Purchase Intention also demonstrate low HTMT values. The interaction constructs, namely Moderation (Z × Gamification) and Moderation (Z × Regulation), also show very low HTMT values with other constructs. Overall, these findings confirm that all constructs in the model have good discriminant validity and are clearly differentiated from one another.

Construct reliability and validity were evaluated to assess the internal consistency and convergent validity of each construct in the research model.

Table 3. Construct reliability and validity

Construct	Cronbach's Alpha	Composite Reliability (ρA)	Composite Reliability (ρC)	AVE
E-Commerce Gamification	0.931	0.932	0.947	0.788
Digital Trust	0.915	0.920	0.936	0.754

Construct	Cronbach's Alpha	Composite Reliability (ρA)	Composite Reliability (ρC)	AVE
Consumer Purchase Intention	0.871	0.887	0.906	0.658
Consumer Protection Regulation	0.920	0.928	0.940	0.758

Source: Survey data processed (2026)

The construct reliability and validity results indicate that all constructs meet the recommended criteria. The Cronbach's Alpha values range from 0.871 to 0.931, exceeding the minimum threshold of 0.70, which indicates good internal consistency. Similarly, both Composite Reliability (ρA) and Composite Reliability (ρC) values for all constructs are above 0.70, confirming strong reliability. Furthermore, the Average Variance Extracted (AVE) values range from 0.658 to 0.788, all exceeding the recommended threshold of 0.50. This demonstrates adequate convergent validity, meaning that each construct explains more than half of the variance of its indicators. Overall, these results confirm that all constructs are reliable and valid for further analysis.

### B. Structural Model Results (Inner Model)

The R-square values were examined to evaluate the explanatory power of the structural model in predicting the endogenous constructs.

Table 4. R-square

Endogenous Variable	R-square	Adjusted R-square
Consumer Purchase Intention	0.462	0.448

Source: Survey data processed (2026)

The R-square value for Consumer Purchase Intention is 0.462, indicating that E-Commerce Gamification, Consumer Protection Regulation, and Digital Trust (including the moderating effects) explain 46.2% of the variance in Consumer Purchase Intention. Meanwhile, the adjusted R-square value of 0.448 shows that after adjusting for the number of predictors in the model, 44.8% of the variance in Consumer Purchase Intention can still be explained. This suggests that the model has moderate explanatory power.

The hypothesis testing was conducted to examine the relationships between constructs in the structural model. The results are presented below.

Table 6. Path Coefficient

Relationship	Original Sample (O)	T Statistics	P Values
E-Commerce Gamification to Consumer Purchase Intention	0.293	5.500	0.000

Relationship	Original Sample (O)	T Statistics	P Values
Digital Trust to Consumer Purchase Intention	0.294	4.686	0.000
Digital Trust to E-Commerce Gamification	0.362	7.179	0.000
Digital Trust to Consumer Protection Regulation	0.301	5.754	0.000
Consumer Protection Regulation to Consumer Purchase Intention	0.324	6.193	0.000

Source: Survey data processed (2026)

E-Commerce Gamification has a positive and significant effect on Consumer Purchase Intention ( $\beta = 0.293$ ;  $T = 5.500$ ;  $p = 0.000$ ), indicating that the implementation of gamification features increases consumers' purchase intention. Digital Trust has a positive and significant effect on Consumer Purchase Intention ( $\beta = 0.294$ ;  $T = 4.686$ ;  $p = 0.000$ ), suggesting that higher digital trust leads to stronger consumer purchase intention. Digital Trust also has a positive and significant effect on E-Commerce Gamification ( $\beta = 0.362$ ;  $T = 7.179$ ;  $p = 0.000$ ), meaning that stronger digital trust encourages greater engagement with gamification features. Furthermore, Digital Trust has a positive and significant effect on Consumer Protection Regulation ( $\beta = 0.301$ ;  $T = 5.754$ ;  $p = 0.000$ ), indicating that higher digital trust improves perceptions of consumer protection regulation. Consumer Protection Regulation has a positive and significant effect on Consumer Purchase Intention ( $\beta = 0.324$ ;  $T = 6.193$ ;  $p = 0.000$ ), showing that stronger consumer protection regulation increases consumer purchase intention.

### Discussion

The results of this study confirm that both compliance with consumer protection regulations and e-commerce gamification have a direct effect on consumer purchase intention. In addition, digital trust plays an important role not only as an independent factor but also as a psychological variable that bridges and strengthens the influence of these two main variables on purchasing behavior. This finding indicates that regulatory assurance and interactive engagement jointly shape consumers' willingness to purchase in digital commerce environments.

These findings are consistent with Regulatory Compliance Theory and Consumer Protection Theory, which emphasize that companies that comply with legal requirements and provide consumer protection guarantees gain legitimacy and trust from users. As highlighted by Morsink (2024) and Dupuy (2024), transparency and legal assurance form the foundation of digital trust, which in turn increases purchase intention. In the Indonesian context, where data protection issues remain a major concern, these results reinforce the importance of regulation as a basis for building consumer trust in digital systems.

From an interactive strategy perspective, gamification is proven to increase purchase intention, particularly when features are perceived as enjoyable, challenging, and rewarding. This is consistent with Self-Determination Theory (SDT) and Flow Theory, which suggest that intrinsic motivation and flow experience play key roles in driving consumer behavior. However, this study adds an important dimension by demonstrating that the effect of gamification becomes stronger when consumers already have trust in the digital system they use. This supports the findings of Dionisius Erwin Pranjono (2024) and Fahlevi and Sinambela (2025), while extending their work by positioning digital trust as a crucial link between gamification innovation and purchasing decisions.

The role of digital trust in this model also confirms Trust Moderation Theory (TMT) and recent adaptations of the Technology Acceptance Model (TAM), where trust functions not only as an outcome but also as a reinforcing factor in relationships among variables. In other words, digital trust not only directly influences purchase intention but also strengthens the effects of gamification and consumer protection regulation on consumers' intention to purchase products on e-commerce platforms.

While many previous studies have examined only the direct relationship between trust and purchase intention or between gamification and loyalty (Rinjani et al., 2023; Salsabila et al., 2025), this study contributes by demonstrating a simultaneous and integrated relationship among regulatory, interactive, and psychological dimensions in influencing purchase intention. This fills a gap in the literature, particularly by examining the role of digital trust as a bridging and strengthening mechanism within the Indonesian context, which is characterized by rapid digital transformation and regulatory challenges.

The implications of these findings suggest that e-commerce platforms should prioritize compliance with consumer protection regulations while simultaneously developing engaging gamification features supported by trustworthy digital environments. Strengthening legal transparency, data protection mechanisms, and user-friendly gamified interactions can enhance consumer confidence and encourage purchasing behavior. Practically, companies that integrate regulatory compliance, interactive engagement, and trust-building strategies are more likely to increase consumer purchase intention and maintain competitiveness in the digital marketplace.

## Conclusion

This study aims to analyze the effect of consumer protection regulation compliance and gamification in e-commerce applications on consumers' purchase intention, with digital trust as an intervening variable. Based on the results of the analysis and discussion, several key conclusions can be drawn. Compliance with consumer protection regulations has a positive effect on consumers' purchase intention. This indicates that consumers are more likely to make purchases on e-commerce platforms that demonstrate a strong commitment to information transparency,

personal data protection, and fair, accountable dispute resolution mechanisms.

Gamification features in e-commerce applications also have a direct positive effect on consumers' purchase intention. Game-like elements such as points, challenges, and leaderboards are proven to create an enjoyable user experience and increase user engagement throughout the purchasing process. Digital trust significantly and directly influences purchase intention. Trust in the security, integrity, and reliability of the platform serves as a psychological foundation that strengthens consumers' intention to engage in transactions. Moreover, digital trust plays an important mediating role in linking both regulatory compliance and gamification features to consumers' purchase intention. This means that both regulatory and interactive strategies will only achieve optimal effectiveness when consumers already possess a strong sense of trust in the digital system being used.

The theoretical implications of this study enrich the existing literature by integrating legal, psychological, and technological perspectives in understanding digital consumer behavior. Meanwhile, the practical implications provide strategic guidance for e-commerce industry players, emphasizing not only the importance of feature innovation but also the necessity of ensuring regulatory compliance and building sustainable digital trust.

## Recommendations

For e-commerce players and application developers, e-commerce companies should not only focus on innovating gamification features but also actively demonstrate compliance with consumer protection regulations. This can be done by providing clear privacy policy information, responsive complaint channels, and regular updates related to data security. Gamification features should be designed not merely for entertainment purposes, but also to foster a sense of safety and trust, for example by integrating reward systems with educational content on digital transaction security.

For regulators and the government, institutions such as the Ministry of Communication and Digital Affairs (Kominfo) and the Ministry of Trade are encouraged to strengthen supervision over the implementation of consumer protection regulations in the e-commerce sector, including regular assessments of transparency and accountability in digital systems. Public education on digital consumer rights should also be expanded to increase users' awareness of the importance of choosing platforms that comply with legal standards for data protection.

For future researchers, it is recommended to include additional external variables such as user experience, perceived risk, or digital service quality to broaden the scope of the model and provide a more comprehensive explanation of purchase intention variation. Further studies may also adopt a mixed-methods approach to gain deeper insights into how digital trust is formed and evolves based on consumers' real experiences in using e-commerce applications.

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