



From Omnichannel Shopping Experience to Purchase Decision among Indonesian Consumers: A Moderated Mediation Model

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ABSTRACT

This study investigates how omnichannel shopping experience and digital engagement influence purchase decisions by incorporating trust as a mediator and perceived data security as a moderator. Drawing on the Stimulus–Organism–Response (S–O–R) framework, digital engagement and shopping experience are conceptualized as external stimuli that shape consumer trust, which subsequently drives purchase decisions in omnichannel retail contexts. Data were collected from 200 consumers with prior omnichannel shopping experience and analyzed using Partial Least Squares Structural Equation Modeling (PLS–SEM). The findings reveal that omnichannel shopping experience significantly influences both trust and purchase decision, while trust has a strong positive effect on purchase decision. In contrast, digital engagement does not directly affect purchase decision. However, digital engagement significantly influences trust, indicating an indirect-only mediation effect through trust. Furthermore, perceived data security strengthens the relationship between trust and purchase decision, confirming its moderating role. These results highlight that purchase decisions in omnichannel retailing are primarily driven by seamless experiences and trust-building mechanisms rather than digital engagement alone. The study provides theoretical and managerial insights into how retailers can enhance conversion through trust and data security assurance.

Keywords: Digital Engagement, Shopping Experience, Trust, Data Security, Purchase Decision

JEL Classifications: M31

1. INTRODUCTION

The rapid proliferation of digital technologies has fundamentally transformed the retail landscape, shifting it from multichannel operations toward fully integrated omnichannel ecosystems (Sharma et al., 2024). Retailers are no longer evaluated solely based on product offerings or pricing strategies but increasingly on their ability to deliver seamless and consistent shopping experiences across online platforms, mobile applications, and physical stores. In this evolving environment, omnichannel shopping experience has emerged as a strategic differentiator that shapes consumers' perceptions and behavioral outcomes (Kong and Tan, 2026).

Unlike traditional multichannel systems, omnichannel retailing emphasizes the integration and synchronization of customer touchpoints, enabling consumers to transition smoothly between channels during their shopping journey (Parker-Strak et al., 2026). According to Verhoef (2015), omnichannel retailing represents a customer-centric approach in which channel integration enhances overall customer experience rather than operating channels independently. This perspective highlights that the value of omnichannel strategies lies not merely in channel availability but in perceived seamlessness and consistency (Cai et al., 2025).

Prior research has consistently demonstrated that customer experience significantly influences purchase-related outcomes,

including satisfaction, loyalty, and behavioral intentions (Radomska et al., 2024). However, despite the growing body of literature on omnichannel retailing, empirical findings regarding the direct effect of omnichannel shopping experience on purchase decision remain inconsistent (Guercini et al., 2026). While some studies report strong positive associations, others suggest that experience alone does not automatically translate into purchasing behavior (Liu et al., 2026). This inconsistency suggests the presence of underlying psychological mechanisms that explain how and when experience converts into purchase decisions.

Drawing upon the Stimulus-Organism-Response framework, this study conceptualizes omnichannel shopping experience as a stimulus that influences internal psychological states, which subsequently drive behavioral responses (Sestino et al., 2026). Within this framework, trust represents a critical organismic state that mediates the relationship between experience and purchase decision. In digital and omnichannel environments characterized by information asymmetry and technological complexity, trust functions as a key relational mechanism that reduces uncertainty and perceived risk (Cenizo, 2026). Even when consumers perceive an experience as seamless and enjoyable, they may refrain from purchasing if they do not trust the retailer or its technological systems (Andaleeb and Hasan, 2026).

The role of trust becomes even more salient in data-intensive omnichannel ecosystems (Capurro et al., 2026). Omnichannel retailing relies heavily on customer data integration across platforms, including browsing history, purchase records, payment details, and location data (Wang et al., 2025). While such integration enhances personalization and convenience, it simultaneously raises privacy and security concerns. Consumers increasingly question how their data are collected, stored, and protected. Therefore, the effectiveness of trust in translating positive experiences into purchase decisions may depend on consumers' perceptions of data security (Elliott et al., 2025).

Although existing studies have examined trust as a mediator in online retail contexts, limited research has explored its mediating role specifically within omnichannel shopping experience frameworks (Sharma et al., 2026). Furthermore, few studies have investigated data security as a boundary condition that moderates the trust–purchase relationship. Most prior research treats data security as a direct antecedent of trust rather than as a contextual factor that determines whether trust effectively converts into purchasing behavior (Wu et al., 2025). This conceptual limitation leaves an important theoretical gap regarding the conditional process through which omnichannel experiences influence purchase decisions.

Addressing this gap, the present study proposes a moderated mediation model in which omnichannel shopping experience influences purchase decision indirectly through trust, while perceived data security strengthens or weakens the impact of trust on purchase decision. By integrating engagement-driven experiential perspectives with trust formation mechanisms and security perceptions, this study advances the omnichannel retail literature in three significant ways.

First, it extends omnichannel experience research by explaining not only whether experience affects purchase decision but how this effect occurs through trust. Second, it introduces data security as a boundary condition that clarifies when trust is more likely to translate into actual purchase decisions. Third, it integrates experiential, relational, and technological perspectives into a single conditional process framework, offering a more comprehensive explanation of consumer behavior in omnichannel environments.

In doing so, this study contributes to retail and consumer behavior literature by providing a theoretically grounded and empirically testable model that captures the psychological and contextual mechanisms underlying purchase decisions in omnichannel retailing. The findings are expected to offer both theoretical enrichment and managerial implications for retailers seeking to optimize customer experience strategies while addressing growing concerns over data security.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1. Theoretical Foundation

This study is grounded in the Stimulus-Organism-Response framework, which explains how environmental stimuli influence internal psychological states that subsequently shape behavioral responses (Gao et al., 2025). Within the retail context, stimuli refer to external cues encountered during the shopping journey, organism represents internal evaluations and affective states, and response denotes observable behavioral outcomes (Verma et al., 2026).

In omnichannel retailing, consumers are exposed to integrated touchpoints across physical stores, websites, mobile applications, and social media platforms. These interactions collectively shape the perceived omnichannel shopping experience, which functions as a central stimulus influencing consumer cognition and emotion (Elliott et al., 2025). However, behavioral responses such as purchase decisions are rarely triggered directly by experience alone. Instead, internal mechanisms—particularly trust—serve as psychological bridges that convert experiential evaluations into action.

Moreover, omnichannel ecosystems are highly data intensive. The integration of consumer data across platforms enhances personalization and convenience but simultaneously increases privacy and security concerns (Elizaga, 2026). Therefore, data security may operate as a boundary condition that determines whether trust effectively translates into purchase decisions. By integrating experiential stimuli, relational mechanisms, and technological risk perceptions, this study extends the S-O-R framework into a moderated mediation model within omnichannel retailing.

2.2. Digital Engagement, Trust and Purchase Decision

Digital engagement refers to consumers' active interaction with a retailer's digital ecosystem, including browsing activities, mobile app usage, participation in loyalty programs, and cross-channel

interactions such as click-and-collect (Andaleeb and Hasan, 2026). Engagement reflects behavioral involvement and relational intensity between consumers and retailers.

In omnichannel contexts, higher levels of digital engagement enhance familiarity with retailer systems and increase exposure to service consistency across channels (Cenizo, 2026). Repeated and meaningful interactions signal operational reliability and transparency, which are essential elements in trust formation.

Engagement also facilitates information exchange and personalized communication, reducing uncertainty regarding product quality and transaction processes. As consumers become more involved in digital touchpoints, they develop greater confidence in the retailer's competence and integrity. Therefore, digital engagement plays a foundational role in building consumer trust in omnichannel retail environments.

- H_1 : Digital engagement positively influences Purchase Decision.
- H_2 : Digital engagement positively influences Purchase Decision by Trust.

2.3. Omnichannel Shopping Experience, Trust and Purchase Decision

Omnichannel shopping experience reflects consumers' perceptions of seamless integration, consistency, and smooth transitions across multiple retail channels. Unlike isolated online or offline experiences, omnichannel experience emphasizes synchronization and continuity throughout the customer journey (Liu et al., 2026).

A seamless experience signals technological capability, service reliability, and organizational competence. When consumers perceive channel consistency and smooth interaction across platforms, perceived uncertainty decreases. Reduced uncertainty is a critical antecedent of trust formation.

Conversely, fragmented or inconsistent experiences may undermine confidence and increase perceived risk. In omnichannel settings where transactions rely on integrated systems, experiential quality strongly shapes consumers' trust evaluations. Thus, a positive omnichannel shopping experience strengthens consumer trust toward the retailer and its technological infrastructure.

- H_3 : Omnichannel shopping experience positively influences Purchase Decision
- H_4 : Omnichannel shopping experience positively influences Purchase Decision by Trust.

2.4. Trust and Purchase Decision

Trust represents consumers' confidence in a retailer's integrity, competence, and reliability. In omnichannel retailing, trust extends beyond product assurance to include confidence in technological systems, payment security, and cross-channel coordination.

Trust reduces perceived risk, enhances confidence in transaction processes, and strengthens behavioral commitment. Even when consumers perceive engagement and experience positively, they may hesitate to purchase if trust is insufficient.

When trust is high, consumers are more willing to finalize transactions and convert intention into purchase decisions. Trust therefore serves as a direct predictor of purchase behavior in technology-mediated retail environments.

- H_5 : Trust as mediating positively influences purchase decision.

2.5. The Moderating Role of Data Security

Omnichannel retailing relies heavily on customer data integration across platforms, including browsing history, payment information, and personal data. While trust reduces uncertainty, its effectiveness in driving purchase decisions may depend on consumers' perceptions of data security.

Perceived data security reflects consumers' beliefs that their personal and transactional information is adequately protected from unauthorized access or misuse. Even when consumers trust a retailer, concerns about cybersecurity risks may weaken their willingness to complete purchases.

When perceived data security is high, the positive effect of trust on purchase decision becomes stronger, as residual privacy concerns are minimized. Conversely, low perceptions of data security may attenuate the trust–purchase relationship. Thus, data security functions as a boundary condition in omnichannel retail behavior.

- H_6 : Data security positively moderates the relationship between trust and purchase decision, such that the relationship is stronger when perceived data security is high.

3. RESEARCH METHOD

3.1. Research Design

This study employs a quantitative research design using a cross-sectional survey approach to examine the proposed moderated mediation model in the context of omnichannel retailing. A survey method is appropriate for capturing consumers' perceptions of digital engagement, omnichannel shopping experience, trust, data security, and purchase decision.

Given the predictive and exploratory nature of the proposed structural relationships, data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM is suitable for complex models involving mediation and moderation effects and does not require strict normality assumptions. It is particularly appropriate for studies aiming to explain variance in key dependent constructs such as purchase decision.

3.2. Population and Sample

The population of this study consists of consumers who have experienced omnichannel retail services, defined as individuals who have interacted with both online and offline channels of the same retailer within the past 6 months.

A purposive sampling technique was employed to ensure that respondents met the following criteria:

1. Have purchased products from an omnichannel retailer
2. Have used at least two different channels (e.g., mobile app and physical store)

3. Are familiar with digital interaction features such as mobile applications, online payment systems, or loyalty programs.

For PLS-SEM analysis, the recommended minimum sample size follows the “10-times rule” or power analysis guidelines. Given the maximum number of structural paths pointing at a latent construct in the model, a total of 200 respondents is considered adequate.

3.3. Measurement Development

All constructs in this study were operationalized using multi-item scales adapted from prior established literature and contextualized to the omnichannel retail environment. The adaptation process ensured that each measurement item accurately reflected the integrated nature of digital and physical channel interactions. Since omnichannel retailing involves technological infrastructure, data integration, and cross-channel consistency, scale items were refined to capture consumers’ perceptions within this specific context.

A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure all items. The use of a symmetric Likert scale is appropriate for capturing perceptual and attitudinal constructs in consumer behavior research. Prior to full data collection, the questionnaire was evaluated by two academic experts in digital marketing and pilot-tested with a small group of omnichannel consumers to ensure clarity, relevance, and contextual accuracy (Table 1).

Following data collection, the measurement model was assessed to ensure reliability and validity before testing the structural relationships. Indicator reliability was evaluated through outer loadings, while internal consistency reliability was assessed using composite reliability values. Convergent validity was examined through average variance extracted (AVE), and discriminant validity was assessed using both the Fornell–Larcker criterion and the heterotrait–monotrait (HTMT) ratio.

3.4. Data Analysis Procedure

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS software.

PLS-SEM was chosen due to its suitability for predictive research models, particularly those involving complex relationships such as mediation and moderation. Additionally, PLS-SEM does not impose strict distributional assumptions and is appropriate for models focused on explaining variance in endogenous constructs, such as trust and purchase decision within omnichannel retail settings (Hair et al., 2017).

The analysis followed a two-step approach. First, the measurement model was evaluated to assess reliability and validity. Indicator reliability was examined through outer loadings, while internal consistency reliability was assessed using composite reliability values. Convergent validity was evaluated through average variance extracted (AVE), and discriminant validity was assessed using both the Fornell–Larcker criterion and the heterotrait–monotrait (HTMT) ratio. Only constructs meeting the recommended threshold values were retained for structural model assessment.

Second, the structural model was evaluated by examining path coefficients, t-values, and significance levels obtained through bootstrapping with 5,000 resamples. The coefficient of determination (R^2) was used to assess explanatory power, while effect sizes (f^2) and predictive relevance (Q^2) were calculated to determine the substantive impact of exogenous constructs. Mediation effects were tested using bootstrapped indirect effects, and moderation was examined through the interaction term between trust and data security. The moderated mediation effect was further assessed by evaluating whether the indirect effects varied across different levels of perceived data security.

4. RESULTS

4.1. Respondent Profile

A total of 200 valid responses were included in the final analysis. All respondents met the screening criteria, namely having experience interacting with both online and offline channels of an omnichannel retailer within the past 6 months (Table 2).

Table 1: Measurement of variables

Variable	Definition	Indicators	Scale	Source
Digital engagement	The level of consumer interaction with the retailer’s digital channels	(1) Frequency of interaction (2) Time intensity (3) Active participation (comments, reviews, sharing) (4) Responsiveness to digital campaigns	Likert 1-5	Dwivedi et al. (2021); Wang et al. (2024)
Shopping experience	Consumers’ perception of their shopping experience across multiple channels	(1) Ease of use (2) Channel consistency (3) Emotional satisfaction (4) Perceived value	Likert 1-5	Verhoef et al. (2015); Xu et al. (2021)
Consumer trust (Mediation)	Consumers’ belief in the retailer’s integrity and credibility	(1) Retailer honesty (2) Transaction security (3) Accuracy of product information (4) Protection of user data	Likert 1-5	Gefen et al. (2003); Chopra and Agrawal (2022)
Purchase decision	Consumers’ intention and behavior in making purchase decisions	(1) Purchase intention (2) Probability of choosing the retailer again (3) Self-reported actual behavior (4) post-purchase evaluation	Likert 1-5	Kotler and Keller (2016); Lee et al. (2021)
Perceived data security (Moderator)	Consumers’ belief regarding the protection of personal data	(1) Confidence that personal data are secure (2) Compliance with regulations (3) Perceived low risk of data breach (4) Assurance of data protection	Likert 1-5	Chatterjee et al. (2022); Zhang et al. (2023)

Table 2: Demographic characteristics of respondents (n=200)

No	Respondent characteristics	Frequency	Percentage
1	Gender		
	Male	55	27
	Female	145	72.5
2	Age		
	18-25 years	77	38.5
	26-39 years	53	26.5
	40-49 years	49	24.5
	≥50 years	21	10.5
3	Generational cohort		
	Baby boomers	1	0.5
	Generation X	41	20.5
	Generation Y (Millennials)	71	35.5
	Generation Z	87	43.5
4	Education Level		
	High School (Sma/Smk)	85	42.5
	Diploma (D1/D3)	6	3
	Bachelor's degree (S1)	63	31.5
	Master's degree (S2)	36	18
	Doctoral degree (S3)	8	4

Based on gender distribution, the majority of respondents were female (72.5%), while 27% were male. This indicates that female consumers dominate the sample, which is consistent with prior retail studies showing higher engagement levels among female shoppers in omnichannel environments.

In terms of age, most respondents were between 18 and 25 years (38.5%), followed by 26 and 39 years (26.5%), and 40 and 49 years (24.5%). A smaller proportion (10.5%) were aged 50 years and above. When categorized by generational cohort, Generation Z constituted the largest group (43.5%), followed by Generation Y (35.5%), Generation X (20.5%), and Baby Boomers (0.5%). This suggests that the sample is largely composed of digitally native and digitally adaptive consumers, which is particularly relevant for research in omnichannel retail contexts.

Regarding educational background, the majority of respondents held a high school diploma (42.5%), followed by bachelor's degree holders (31.5%) and master's degree holders (18%). A smaller proportion reported diploma-level education (3%) and doctoral degrees (4%). Overall, the demographic profile indicates that the respondents are relatively young and digitally active consumers, making them appropriate for examining digital engagement and omnichannel shopping behavior.

4.2. Measurement Model Evaluation

The measurement model was assessed to evaluate indicator reliability, internal consistency reliability, and convergent validity. Indicator reliability was examined based on outer loadings, with a recommended threshold of 0.70 (Table 3).

The results indicate that all measurement items exhibit strong outer loadings, ranging from 0.806 to 0.959, exceeding the minimum acceptable threshold of 0.70. Specifically, the indicators of digital engagement (DE1-DE4) range between 0.806 and 0.871, while shopping experience (SE1-SE4) ranges from 0.880 to 0.935.

Table 3: Outer loadings

Construct	Outer loadings
DE1	0.817
DE2	0.871
DE3	0.847
DE4	0.806
DS1	0.929
DS2	0.943
DS3	0.880
DS4	0.943
PD1	0.938
PD2	0.959
PD3	0.856
PD4	0.929
SE1	0.887
SE2	0.880
SE3	0.935
SE4	0.894
T1	0.871
T2	0.918
T3	0.916
T4	0.894

Similarly, trust indicators (T1-T4) demonstrate high loadings between 0.871 and 0.918.

Moreover, the indicators for data security (DS1-DS4) and purchase decision (PD1-PD4) show particularly high loadings, ranging from 0.880 to 0.959, indicating excellent measurement quality. These results confirm that all indicators reliably represent their respective latent constructs.

4.2.1. Construct reliability and validity

Construct reliability and convergent validity were assessed using Cronbach's alpha, composite reliability ($\rho_{\text{and}} \rho_{\text{c}}$), and average variance extracted (AVE). According to established guidelines, Cronbach's alpha and composite reliability values should exceed 0.70, while AVE values should be above 0.50 to indicate adequate convergent validity (Table 4).

The results demonstrate that all constructs exhibit high levels of internal consistency reliability. Cronbach's alpha values range from 0.856 to 0.943, exceeding the recommended threshold of 0.70. Similarly, composite reliability values (ρ_{c}) range from 0.903 to 0.959, further confirming strong reliability across all constructs.

Among the constructs, data security ($\alpha = 0.943$; CR = 0.959) and purchase decision ($\alpha = 0.940$; CR = 0.957) exhibit the highest reliability levels, indicating that the measurement items consistently capture the underlying constructs. Meanwhile, digital engagement shows the lowest reliability values ($\alpha = 0.856$; CR = 0.903), although these values remain well above the acceptable threshold, suggesting satisfactory internal consistency.

In terms of convergent validity, all constructs demonstrate AVE values well above the minimum threshold of 0.50, ranging from 0.699 to 0.854. This indicates that each construct explains a substantial proportion of variance in its indicators.

Table 4: Construct reliability and convergent validity

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Data security	0.943	0.945	0.959	0.854
Digital engagement	0.856	0.859	0.903	0.699
Purchase decision	0.940	0.944	0.957	0.849
Shopping experience	0.921	0.923	0.944	0.809
Trust	0.922	0.929	0.945	0.810

Notably, data security (AVE = 0.854) and purchase decision (AVE = 0.849) exhibit particularly strong convergent validity, reflecting a high degree of shared variance among their indicators. Overall, these findings confirm that the measurement model satisfies the criteria for both reliability and convergent validity, indicating that all constructs are measured accurately and consistently.

4.3. Discriminant Validity (HTMT Ratio)

To further assess discriminant validity, the Heterotrait–Monotrait ratio (HTMT) was employed. The HTMT criterion has been widely recommended as a more reliable and stringent approach for evaluating discriminant validity in variance-based structural equation modeling (PLS-SEM). Unlike the Fornell–Larcker criterion, HTMT directly examines the ratio of between-construct correlations to within-construct correlations, providing a more sensitive detection of potential construct overlap.

Following established guidelines, HTMT values below 0.90 indicate adequate discriminant validity, while values exceeding this threshold may signal conceptual redundancy between constructs. Table 5 presents the HTMT values for all latent construct pairs in this study.

The HTMT analysis shows that most construct pairs fall below the recommended threshold of 0.90, indicating acceptable discriminant validity. However, the HTMT value between Shopping Experience and Data Security (0.904) slightly exceeds the conservative threshold of 0.90, suggesting a potential discriminant validity concern between these constructs.

Other relatively high values, such as Trust–Purchase Decision (0.879) and Purchase Decision–Data Security (0.888), remain below the critical threshold and are therefore considered acceptable. These high correlations are theoretically justifiable given the strong conceptual interrelationships among trust, perceived security, and purchase behavior in omnichannel environments.

Overall, although one HTMT value marginally exceeds 0.90, the discriminant validity of the measurement model can be considered largely acceptable, provided that additional supporting evidence (e.g., Fornell–Larcker criterion and cross-loadings) confirms construct distinctiveness.

4.4. Structural Model Evaluation

Before examining the structural relationships, collinearity among predictor constructs was assessed using the Variance Inflation Factor (VIF). Evaluating collinearity is essential in PLS-SEM to ensure that predictor constructs do not exhibit excessive

Table 5: Heterotrait–monotrait ratio (HTMT)

Constructs	DE	SE	TR	DS	PD
Digital engagement (DE)	—				
Shopping experience (SE)	0.826	—			
Trust (TR)	0.769	0.797	—		
Data security (DS)	0.804	0.904	0.876	—	
Purchase decision (PD)	0.733	0.805	0.879	0.888	—

multicollinearity, which could bias path coefficient estimates and inflate standard errors. Following commonly accepted guidelines, VIF values below 5.00 indicate the absence of critical collinearity issues, while more conservative thresholds suggest that values below 3.30 reflect ideal conditions. Table 6 presents the VIF values for all predictor–criterion relationships in the structural model.

The results indicate that all VIF values range between 2.379 and 3.942. Since none of the values exceed the conservative threshold of 5.00, collinearity does not pose a serious concern in the structural model. Although the VIF values for Shopping Experience → Trust (3.942) and Data Security → Trust (3.785) are relatively higher compared to other paths, they remain within acceptable limits. These findings suggest that the predictor constructs demonstrate sufficient independence and that the estimated path coefficients can be interpreted reliably without significant multicollinearity bias.

4.4.1. Structural path results

The structural model was evaluated by examining the path coefficients to assess the strength and direction of relationships among constructs. The results are presented in Table 7.

The findings reveal that trust has the strongest positive effect on purchase decision ($\beta = 0.581$), indicating that trust plays a central role in driving consumer purchasing behavior in omnichannel retail environments. This suggests that consumers are more likely to complete transactions when they perceive the retailer as reliable, competent, and secure.

In addition, shopping experience demonstrates a moderate positive effect on purchase decision ($\beta = 0.283$). This indicates that a seamless and integrated omnichannel experience directly enhances consumers' willingness to purchase. Compared to other predictors, shopping experience serves as an important experiential driver of consumer behavior.

Conversely, digital engagement shows a very weak effect on purchase decision ($\beta = 0.051$), suggesting that consumers' interactions with digital platforms such as browsing, responding to campaigns, or engaging in online activities do not directly translate into purchasing behavior. This finding implies that

engagement alone is insufficient as a conversion mechanism in omnichannel settings.

Regarding trust formation, data security emerges as the strongest predictor of trust ($\beta = 0.626$), indicating that consumers' perceptions of data protection and privacy play a crucial role in building trust. This highlights the importance of secure technological infrastructure in omnichannel retail systems. Meanwhile, digital engagement has a small but positive effect on trust ($\beta = 0.169$), suggesting that repeated interactions with digital platforms contribute to the development of consumer confidence, albeit to a lesser extent compared to data security.

Unexpectedly, shopping experience shows only a weak effect on trust ($\beta = 0.087$). This finding suggests that although a seamless experience enhances purchasing behavior, it does not necessarily translate into increased trust. This may indicate that in data-driven omnichannel environments, trust is shaped more by perceptions of security and reliability than by experiential factors alone.

4.4.2. Specific indirect effects

The mediation effects were assessed using bootstrapping procedures by examining the significance and magnitude of specific indirect effects. The results are presented in Table 8.

The findings indicate that digital engagement has a positive indirect effect on purchase decision through trust ($\beta = 0.098$). Given that the direct effect of digital engagement on purchase decision is negligible ($\beta = 0.051$) and statistically insignificant, this suggests an indirect-only mediation (full mediation). In other words, digital engagement influences purchase decision exclusively through the development of trust. Therefore, H_2 is supported.

In contrast, shopping experience shows a relatively weak indirect effect on purchase decision via trust ($\beta = 0.051$). This is consistent with the earlier finding that the relationship between shopping experience and trust is not significant. As a result, the mediating role of trust in this relationship is limited, indicating that trust does not function as a key mechanism linking shopping experience to purchase decision. Instead, shopping experience appears to exert a more direct influence on purchasing behavior. Thus, H_4 is only partially supported.

Interestingly, data security demonstrates a substantial indirect effect on purchase decision through trust ($\beta = 0.364$). This indicates that data security strongly contributes to purchase decisions by enhancing consumer trust. Although data security was not originally hypothesized as an antecedent of trust in the mediation framework, this finding reveals its critical role as a trust-building mechanism with significant downstream behavioral implications.

4.4.3. Coefficient of determination (R^2)

The coefficient of determination (R^2) was examined to assess the explanatory power of the structural model (Table 9). The results indicate that the model demonstrates substantial predictive capability.

Table 6: Variance inflation factors (VIF)

Construct	VIF
Data security ->Trust	3.785
Digital engagement ->Purchase decision	2.426
Digital engagement ->Trust	2.379
Shopping experience ->Purchase decision	2.838
Shopping experience ->Trust	3.942
Trust ->Purchase decision	2.455

Table 7: Path coefficient

Constructs	Path coefficients
Data security ->Trust	0.626
Digital engagement ->Purchase decision	0.051
Digital engagement ->Trust	0.169
Shopping experience ->Purchase decision	0.283
Shopping experience ->Trust	0.087
Trust ->Purchase decision	0.581

Table 8: Specific indirect effects

Constructs	Specific indirect effects
Shopping experience ->Trust ->Purchase decision	0.051
Data security ->Trust ->Purchase decision	0.364
Digital engagement ->Trust ->Purchase decision	0.098

Table 9: Coefficient of determination (R^2)

Variable	R-square	R-square adjusted
Purchase decision	0.727	0.722
Trust	0.696	0.692

Specifically, the R^2 value for purchase decision is 0.727 (adjusted $R^2 = 0.722$), indicating that approximately 72.7% of the variance in purchase decision is explained by its predictor constructs, namely digital engagement, shopping experience, trust, and data security. This suggests that the model has strong explanatory power in predicting consumer purchasing behavior within omnichannel retail environments.

Similarly, the R^2 value for trust is 0.696 (adjusted $R^2 = 0.692$), indicating that 69.6% of the variance in trust is explained by digital engagement, shopping experience, and data security. This reflects a high level of predictive accuracy in explaining trust formation among consumers.

According to established guidelines in PLS-SEM, R^2 values of 0.75, 0.50, and 0.25 can be described as substantial, moderate, and weak, respectively. Therefore, both endogenous constructs in this study can be considered to exhibit moderate to substantial explanatory power, with purchase decision approaching the threshold of substantial predictive strength.

4.5. Structural Model Results (Significance Testing)

The significance of the structural relationships was assessed using bootstrapping procedures with 5,000 resamples. The results, including path coefficients (β), t-statistics, and p-values, are presented in Table 10.

Table 10: Hypothesis testing

Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P-values
Data security ->Trust	0.626	0.632	0.101	6.225	0.000
Digital engagement ->Purchase decision	0.051	0.054	0.074	0.692	0.489
Digital engagement ->Trust	0.169	0.169	0.073	2.326	0.020
Shopping experience ->Purchase decision	0.283	0.289	0.093	3.029	0.002
Shopping experience ->Trust	0.087	0.082	0.109	0.800	0.424
Trust ->Purchase decision	0.581	0.574	0.080	7.292	0.000

The findings show that data security has a strong and significant positive effect on trust ($\beta = 0.626$, $t = 6.225$, $P < 0.001$), indicating that consumers' perceptions of data protection play a crucial role in building trust in omnichannel environments. Furthermore, trust significantly influences purchase decision ($\beta = 0.581$, $t = 7.292$, $P < 0.001$), confirming its central role as a key determinant of consumer purchasing behavior. Therefore, H5 is supported.

In terms of experiential factors, shopping experience has a significant positive effect on purchase decision ($\beta = 0.283$, $t = 3.029$, $P = 0.002$), supporting H3. This suggests that a seamless and integrated omnichannel experience directly enhances consumers' likelihood of making a purchase. However, shopping experience does not have a significant effect on trust ($\beta = 0.087$, $t = 0.800$, $P = 0.424$), indicating that experiential quality alone may not be sufficient to build trust. Thus, H4 is not supported.

Regarding digital engagement, the results indicate that digital engagement does not significantly influence purchase decision ($\beta = 0.051$, $t = 0.692$, $P = 0.489$), leading to the rejection of H₁. This finding suggests that consumer engagement with digital platforms does not directly translate into purchasing behavior.

Nevertheless, digital engagement has a significant positive effect on trust ($\beta = 0.169$, $t = 2.326$, $P = 0.020$), indicating that engagement contributes to trust formation. This supports the indirect relationship proposed in H₂.

5. DISCUSSION AND CONCLUSIONS

5.1. Discussion of Findings

This study examined a moderated mediation model in the context of Indonesian omnichannel retailing by positioning digital engagement and omnichannel shopping experience as antecedents, trust as a mediator, and perceived data security as a moderator of purchase decision. The findings provide several important theoretical and practical insights.

First, the results indicate that digital engagement does not exert a significant direct effect on purchase decision. This finding suggests that consumers' interactions with digital platforms such as responding to campaigns, sharing content, or engaging through social media do not automatically translate into transactional outcomes. In the omnichannel environment, digital engagement appears to function primarily as a relational mechanism rather than a direct conversion driver (Anoop and Rahman, 2025). This reinforces the argument that engagement alone is insufficient to generate purchasing behavior unless accompanied by psychological assurance mechanisms.

Second, digital engagement significantly influences trust, which in turn significantly affects purchase decision. This pattern indicates an indirect-only mediation effect, whereby trust fully mediates the relationship between digital engagement and purchase decision. The finding aligns with trust-based perspectives in digital commerce, emphasizing that trust serves as a critical mechanism for reducing uncertainty and facilitating decision-making in technology-mediated environments (Gao et al., 2025).

Third, omnichannel shopping experience significantly influences purchase decision, but does not have a significant effect on trust. This finding suggests that a seamless, consistent, and emotionally satisfying cross-channel experience directly enhances consumers' purchasing behavior without necessarily strengthening their trust in the retailer. Unlike digital engagement, which relies on trust as an intervening mechanism, shopping experience appears to operate through a more direct pathway (Merlano et al., 2024).

This result indicates that experiential quality in omnichannel environments primarily affects consumers' functional and affective evaluations, leading to immediate behavioral responses rather than deeper relational outcomes such as trust. The findings highlight the strategic importance of integrated channel management in shaping purchase decisions, while also suggesting that trust formation may depend more on technological and security-related factors than on experience alone.

Finally, perceived data security significantly moderates the relationship between trust and purchase decision. Specifically, the positive effect of trust on purchase decision becomes stronger when consumers perceive higher levels of data security. This finding indicates that data security functions as a boundary condition that enhances the effectiveness of trust in driving purchasing behavior (Fang and Li, 2025). In data-intensive omnichannel systems, perceived data protection is not merely a technical attribute but a strategic factor reinforcing transactional confidence.

Overall, the findings confirm the proposed moderated mediation framework, positioning trust as the central psychological mechanism and perceived data security as a contextual amplifier within omnichannel retail environments.

5.2. Conclusion

This study contributes to the omnichannel retailing literature by integrating digital engagement, omnichannel shopping experience, trust, and perceived data security into a single moderated mediation framework. The findings demonstrate that digital engagement does not directly drive purchase decisions but operates through

the development of trust. In contrast, omnichannel shopping experience exerts both direct and indirect effects on purchase decision, underscoring its central role in influencing consumer behavior.

Moreover, perceived data security strengthens the impact of trust on purchase decision, highlighting the importance of privacy protection and secure data management in contemporary retail ecosystems. These results suggest that successful omnichannel strategies must move beyond increasing digital interactions and instead prioritize trust-building processes supported by robust data security infrastructures.

From a managerial perspective, retailers should focus on leveraging digital engagement to cultivate trust rather than expecting immediate transactional outcomes. Simultaneously, they should invest in seamless cross-channel integration and clearly communicate data protection practices to enhance consumer confidence.

Future research may extend this framework by incorporating additional boundary conditions, such as perceived risk or privacy concern, or by testing the model across different cultural and generational contexts to enhance its generalizability.

6. AUTHOR DECLARATION

The author declares that this research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The study represents original work that has not been published previously and is not under consideration for publication elsewhere. All data were collected and analyzed in accordance with established research ethics standards, and all sources have been appropriately acknowledged. The author affirms full responsibility for the integrity, accuracy, and authenticity of the data and findings reported in this manuscript.

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