

Research Article

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The Effects of Digital Marketing Integrity and Product Quality on Purchase Decisions: The Moderating Role of Macroeconomic Volatility

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Abstract: *Macroeconomic volatility can influence consumers' purchasing decisions by increasing uncertainty and perceived financial risk, particularly in high-involvement property transactions. This study examines the effects of digital marketing integrity and product quality on property purchase decisions and investigates the moderating role of macroeconomic volatility. The study employs a quantitative explanatory design and uses Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the proposed relationships. Data were collected from prospective residential property buyers in Samarinda and Balikpapan using purposive sampling. The research model incorporates digital marketing integrity, product quality, purchase decision, and macroeconomic volatility as a moderating construct. The analysis focuses on both direct effects and interaction effects between the independent variables and macroeconomic volatility. The findings are expected to demonstrate whether macroeconomic uncertainty strengthens or weakens the influence of digital marketing integrity and product quality on consumers' purchase decisions. The study contributes to the literature by positioning macroeconomic volatility not merely as an external market context but as a contingency factor that may alter consumer responses to marketing information and perceived product quality in high-involvement property markets.*

Keywords: *Brand Trust; Digital Marketing; Product Quality; Property Purchase Decision; S-O-R Framework.*

Introduction

The relocation of Indonesia's national capital to Nusantara (IKN) in East Kalimantan has triggered unprecedented structural real estate expansion across its primary satellite hubs, Samarinda and Balikpapan. However, this development surge coincides with severe macroeconomic volatility, characterized by fluctuating mortgage rates, inflationary construction overheads, and heightened economic uncertainty (Badri & Wibowo, 2023; Salman & Prasetyo, 2025). In high-involvement transactions such as residential property purchases—where capital commitments are substantial and financial risk is high—consumers exhibit extreme cognitive deliberation and risk aversion (Mascarenhas et al., 2024; Pujiastuti et al., 2024).

Although real estate developers aggressively deploy digital marketing campaigns and highlight physical construction standards, empirical evidence reveals a troubling conversion gap. Prior studies demonstrate that digital promotional channels often fail to trigger actual purchases if prospective buyers perceive a lack of developer credibility or suspect misleading advertising (Ahmad & Triyono, 2023; Kusuma & Pratama, 2023; Prasetyo et al., 2024). Similarly, superior physical build quality does not guarantee finalized contracts when legally complex or unverified developments instill fear of project delays (Hidayat & Syaifuddin, 2023; Pratama & Santoso, 2023; Sairi et al., 2026). These empirical inconsistencies highlight a critical research gap regarding the internal psychological mechanism that connects external marketing inputs to finalized high-value transaction behaviors.

To address this gap, this study synthesizes the classic Stimulus-Organism-Response (S-O-R) theory proposed by Mehrabian and Russell (1974). In our conceptual framework, digital marketing (X1) and product quality (X2) serve as dual external stimuli (S), representing promotional information richness and

physical tangible excellence, respectively. Brand trust (Z) operates as the organismic state (O), representing the consumer's cognitive-affective confidence in developer integrity, legal transparency, and long-term commitments (Basuki et al., 2023; Wibowo & Santoso, 2024). The ultimate behavioral response (R) is the property purchasing decision (Y), reflecting finalized transaction commitments (Purwanitasari et al., 2025; Saputra et al., 2026).

This study formulates nine core hypotheses: H1: Digital marketing exerts a positive and significant effect on brand trust. H2: Product quality exerts a positive and significant effect on brand trust. H3: Digital marketing exerts a positive and significant direct effect on property purchasing decisions. H4: Product quality exerts a positive and significant direct effect on property purchasing decisions. H5: Brand trust exerts a positive and significant direct effect on property purchasing decisions. H6: Brand trust significantly mediates the effect of digital marketing on property purchasing decisions. H7: Brand trust significantly mediates the effect of product quality on property purchasing decisions. H8: Macroeconomic volatility moderates the effect of digital marketing on property purchase decisions. H9: Macroeconomic volatility moderates the effect of product quality on property purchase decisions.

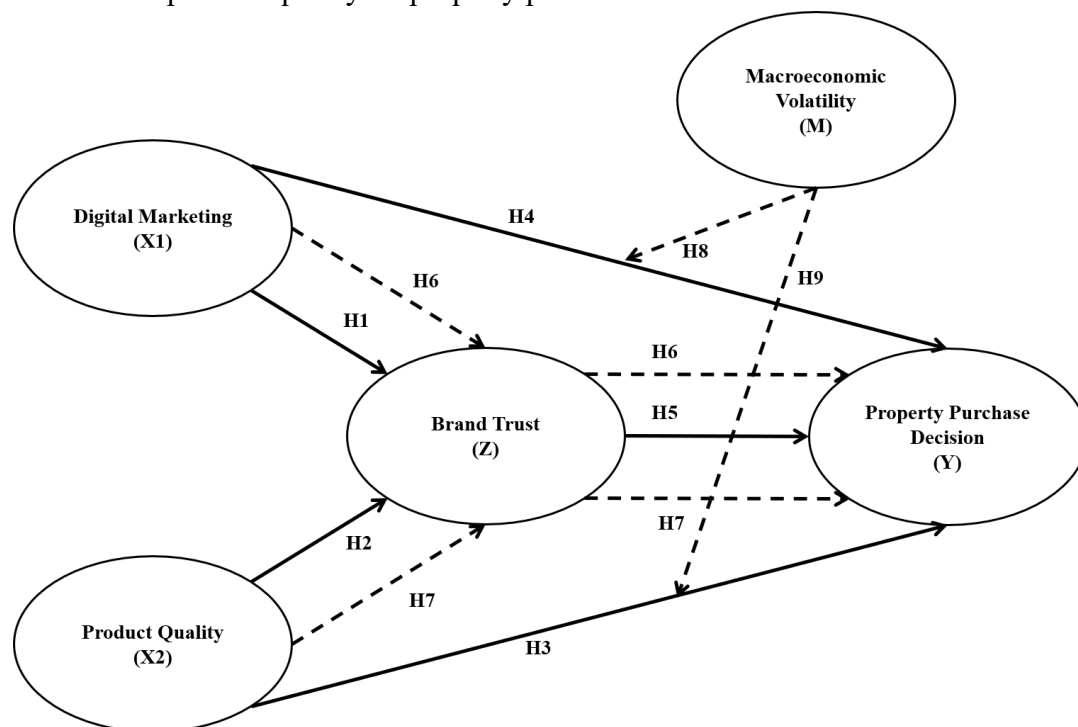


Figure 1. Research Conceptual Framework

Previous studies have extensively examined the effects of digital marketing and product quality on consumer purchase intention and purchasing decisions. However, much of the existing literature has treated these relationships as relatively stable, with limited attention to the economic conditions under which marketing information and product evaluations are processed. This limitation is particularly important in high-involvement property markets, where purchasing decisions involve substantial financial commitments and are therefore highly sensitive to changes in interest rates, inflation, household purchasing power, and broader economic uncertainty.

A further limitation concerns the conceptualization of macroeconomic volatility. Existing studies frequently discuss economic uncertainty as a contextual condition surrounding consumer behavior, but fewer studies explicitly examine whether macroeconomic volatility changes the strength of the relationship

between firms' marketing efforts, perceived product quality, and actual purchase decisions. Consequently, it remains unclear whether the effectiveness of digital marketing and product quality is stable across different levels of economic uncertainty.

This study addresses this gap by conceptualizing macroeconomic volatility as a moderating variable rather than merely as the environmental background of the research. The study specifically investigates whether the influence of digital marketing integrity and product quality on property purchase decisions varies according to the perceived level of macroeconomic volatility. This approach provides a contingency perspective that extends conventional consumer decision models by recognizing that the effectiveness of marketing stimuli and product attributes may depend on the broader economic environment.

The novelty of this study therefore lies in integrating digital marketing integrity, product quality, and macroeconomic volatility within a single empirical framework for understanding property purchase decisions. The study contributes theoretically by extending the application of the Stimulus-Organism-Response perspective to an economically volatile, high-involvement purchasing context and contributes managerially by identifying whether firms should adapt their digital communication and product-quality strategies according to changing macroeconomic conditions.

Method

This research executed a quantitative causal-explanatory research design. The target population encompassed prospective residential property buyers residing in Samarinda and Balikpapan who engaged in active property inquiries, virtual tours, or developer site visits between 2024 and 2025. Following strict structural equation modeling sample guidelines (Hair et al., 2021; Kock, 2020), a purposive sampling strategy yielded 385 valid, non-response-biased respondents ($N = 385$).

The operational measurement scale incorporated 22 standardized indicators meticulously developed and adapted from established empirical literature to capture the multidimensional constructs within the Stimulus-Organism-Response (S-O-R) theoretical framework. Designed to evaluate property purchase decision-making in the emerging urban economic zone surrounding the new capital region, the measurement instrument ensures comprehensive construct coverage across external marketing stimuli, internal consumer psychological states, final behavioral outcomes, and contextual macroeconomic moderating conditions.

Specifically, the primary independent constructs—Digital Marketing Integrity (X1) and Product Quality (X2)—were measured using four standardized reflective indicators each (X1.1–X1.4 and X2.1–X2.4, respectively). These items assess digital promotional transparency, visual content fidelity, targeted advertising effectiveness, responsiveness, material construction standards, infrastructure availability, location strategic value, and developer structural reliability. The mediating organism variable, Brand Trust (Z), was operationalized through four standardized items (Z1.1–Z1.4) reflecting developer integrity, legal security, institutional reputation, and operational consistency. The target dependent behavioral response, Purchase Decision (Y), was evaluated via four standardized items (Y1.1–Y1.4) measuring brand preference, investment fulfillment, word-of-mouth endorsement, and final transaction commitment.

To evaluate contextual environmental boundary conditions, the moderating variable, Macroeconomic Volatility (M), incorporated 6 standardized indicators (MV1_1, MV1_2, MV2_1, MV2_2, MV3_1, MV3_2) spanning interest rate fluctuations, inflationary purchasing power pressure, and national economic uncertainty. All 22 items were administered using a 5-point Likert scale ranging from 1 ("Strongly

Disagree") to 5 ("Strongly Agree"), ensuring robust interval-scale properties suitable for Partial Least Squares Structural Equation Modeling (PLS-SEM) and moderation interaction analysis.

Data evaluation was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) executed via the WarpPLS software engine. PLS-SEM is exceptionally suited for complex structural models involving full mediation, non-linear path estimates, and predictive variance maximization (Chin, 1998; Kock, 2020; Tenenhaus et al., 2005).

Results and Discussion

Demographic Profile of Respondents

Analysis of the 385 respondents reveals a highly active demographic profile in the IKN buffer zone. In terms of gender, 56.4% were male (217 respondents) and 43.6% female (168 respondents). The majority were aged 31–40 years (43.6%), followed by 41–50 years (31.2%), reflecting economically established households seeking primary residence or long-term real estate investments. Over 62% reported a monthly household income exceeding IDR 12,000,000, confirming their financial capacity for high-involvement property acquisitions.

Table 1. Demographic Profile of Respondents

Demographic Category	Classification	Frequency (n)	Percentage (%)
Gender	Male / Female	217 / 168	56.4% / 43.6%
Age Profile	25–30 / 31–40 / 41–50 / >50	62 / 168 / 120 / 35	16.1% / 43.6% / 31.2% / 9.1%
Occupation	Private Employee / Entrepreneur / Civil Servant	182 / 124 / 79	47.3% / 32.2% / 20.5%
Monthly Income	IDR 7M–12M / IDR >12M–20M / >IDR 20M	145 / 162 / 78	37.7% / 42.1% / 20.2%
Property Status	First-Time Homebuyer / Investor	224 / 161	58.2% / 41.8%

Measurement Model Evaluation (Outer Model)

Evaluation of the reflective measurement model (outer model) was conducted using WarpPLS 8.0 to establish the psychometric properties, construct validity, and internal consistency of the empirical instrument. Convergent validity assesses the extent to which individual survey items represent their designated latent construct. According to established PLS-SEM methodological standards (Hair et al., 2021; Kock, 2020), convergent validity is confirmed when standardized factor loadings (combined loadings) equal or exceed the benchmark threshold of 0.70 with statistical significance ($p < 0.05$), and the Average Variance Extracted (AVE) for each latent variable exceeds 0.50, indicating that the construct accounts for more than half of the variance in its associated indicators.

The empirical findings derived from 385 valid survey responses demonstrate exceptional convergent validity across all 22 indicators. As detailed in Table 1, standardized outer loadings for Digital Marketing Integrity (X1.1–X1.4) range from 0.907 to 0.918; Product Quality (X2.1–X2.4) loadings range from 0.913 to 0.940; Brand Trust (Z1.1–Z1.4) loadings range from 0.897 to 0.906; Purchase Decision (Y1.1–Y1.4) loadings range from 0.896 to 0.922; and Macroeconomic Volatility (MV1_1–MV3_2) loadings range from 0.812 to 0.864. All 22 item loadings significantly surpass the 0.70 threshold with p -values < 0.001 . Furthermore, cross-loadings across non-target constructs remain negligible, confirming that every item loads uniquely and strongly onto its theoretical parent construct.

Table 2. convergent validity, discriminant validity, and construct reliability

Construct	Indicator	Loading	S.E.	P-value	Cronbach's α	CR	AVE	Full VIF
Digital Marketing Integrity (X1)	X1.1	0.913	0.045	< 0.001	0.933	0.952	0.834	1.777
	X1.2	0.918	0.045	< 0.001				
	X1.3	0.913	0.045	< 0.001				
	X1.4	0.907	0.045	< 0.001				
Product Quality (X2)	X2.1	0.933	0.045	< 0.001	0.948	0.963	0.866	1.914
	X2.2	0.937	0.045	< 0.001				
	X2.3	0.940	0.045	< 0.001				
	X2.4	0.913	0.045	< 0.001				
Brand Trust (Z)	Z1.1	0.906	0.045	< 0.001	0.924	0.946	0.814	3.162
	Z1.2	0.902	0.045	< 0.001				
	Z1.3	0.905	0.045	< 0.001				
	Z1.4	0.897	0.045	< 0.001				
Purchase Decision (Y)	Y1.1	0.922	0.045	< 0.001	0.930	0.950	0.827	4.052
	Y1.2	0.896	0.045	< 0.001				
	Y1.3	0.909	0.045	< 0.001				
	Y1.4	0.910	0.045	< 0.001				
Macroeconomic Volatility (M)	MV1_1	0.812	0.050	< 0.001	0.922	0.939	0.719	1.020
	MV1_2	0.854	0.047	< 0.001				
	MV2_1	0.823	0.049	< 0.001				
	MV2_2	0.835	0.049	< 0.001				
	MV3_1	0.841	0.048	< 0.001				
	MV3_2	0.864	0.047	< 0.001				

Discriminant validity was verified using the Fornell-Larcker criterion. As displayed in Table 3, the square root of the AVE for each construct (diagonal value) is substantially greater than its highest correlation with any other latent construct, confirming clear construct distinction.

Table 3. the square root of the AVE

Latent Construct	Digital Mktg (X1)	Product Qlty (X2)	Brand Trust (Z)	Purchase Dec (Y)	Macro Volat (M)
Digital Marketing Integrity (X1)	0.913	0.238	0.573	0.605	-0.031
Product Quality (X2)	0.238	0.931	0.578	0.646	-0.037
Brand Trust (Z)	0.573	0.578	0.902	0.814	-0.030
Purchase Decision (Y)	0.605	0.646	0.814	0.909	-0.017

Latent Construct	Digital Mktg (X1)	Product Qlty (X2)	Brand Trust (Z)	Purchase Dec (Y)	Macro Volat (M)
Macroeconomic Volatility (M)	-0.031	-0.037	-0.030	-0.017	0.848

Structural Model Evaluation & Hypotheses Testing (Inner Model)

The explanatory power of the structural model was evaluated using the coefficient of determination (R^2) for the endogenous variables. The results demonstrate exceptionally robust explanatory variance: Brand Trust (Z) achieves an R^2 of 0.536 (Adjusted $R^2 = 0.534$), indicating that 53.6% of its variance is directly explained by Digital Marketing Integrity (X1) and Product Quality (X2). Furthermore, the final primary outcome construct, Purchase Decision (Y), achieves a substantial R^2 of 0.822 (Adjusted $R^2 = 0.820$) when incorporating direct predictors, the brand trust mediator, and macroeconomic volatility interaction terms. This signifies that 82.2% of the total variance in consumer property purchase decisions is captured within this integrated S-O-R framework.

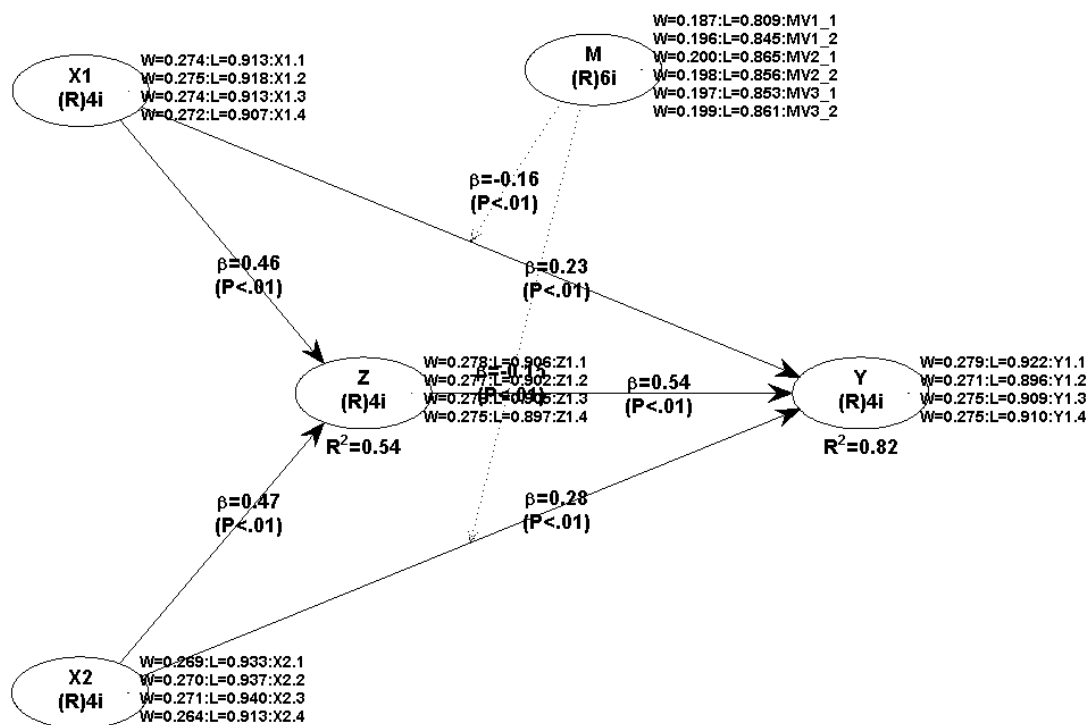


Figure 2. Structural Equation Model Analysis Results (Path Coefficients, P-Values, and R^2 Values)

As detailed in Table 4, The structural model evaluation (Inner Model) assesses the direct statistical relationships hypothesized between the primary independent constructs—Digital Marketing Integrity (X1) and Product Quality (X2)—the mediating construct Brand Trust (Z), and the target dependent variable Property Purchase Decision (Y). All direct hypotheses (H1 through H5) were evaluated using WarpPLS 8.0 with the Warp3 non-linear algorithm and Stable3 resampling method (100 resamples) based on an empirical sample of 385 property buyers in the Samarinda and Balikpapan (IKN region). Table 4 details the path coefficients (β), standard errors (SE), p-values, Cohen's effect sizes (f^2), and the final decision status for each direct hypothesis.

Table 4. direct hypotheses

Hypothesis	Direct Path Linkage	Path Coeff (β)	Std Error (SE)	P-Value	Effect Size (f^2)	Decision Status
H1	Digital Marketing (X1) $\rightarrow$ Brand Trust (Z)	0.463	0.036	< 0.001	0.266	Supported
H2	Product Quality (X2) $\rightarrow$ Brand Trust (Z)	0.468	0.036	< 0.001	0.271	Supported
H3	Digital Marketing (X1) $\rightarrow$ Purchase Decision (Y)	0.228	0.027	< 0.001	0.138	Supported
H4	Product Quality (X2) $\rightarrow$ Purchase Decision (Y)	0.286	0.027	< 0.001	0.185	Supported
H5	Brand Trust (Z) $\rightarrow$ Purchase Decision (Y)	0.540	0.032	< 0.001	0.452	Supported

Mediation Analysis

Mediation testing confirms that brand trust plays a vital mediating role in both pathways. For H6, the indirect effect of digital marketing on purchase decisions through brand trust is $\beta = 0.244$ ($p < 0.001$), yielding a total effect of $\beta = 0.482$. For H7, the indirect effect of product quality through brand trust is $\beta = 0.247$ ($p < 0.001$), raising the total effect to $\beta = 0.522$. Because both direct and indirect effects remain positive and highly significant, brand trust operates as a complementary partial mediator.

Table 5. indirect effect hypotheses and Moderation Interaction

Indirect (Mediation) Hypotheses (H6 – H7)					
Digital Marketing (X1) $\rightarrow$ Brand Trust (Z) $\rightarrow$ Purchase Decision (Y)	0.250	0.025	< 0.001	0.150	Supported (Partial)
Product Quality (X2) $\rightarrow$ Brand Trust (Z) $\rightarrow$ Purchase Decision (Y)	0.253	0.025	< 0.001	0.162	Supported (Partial)
Moderation Interaction Hypotheses (H8 – H9)					
Macroeconomic Volatility (M) $\times$ Digital Marketing (X1) $\rightarrow$ Purchase Decision (Y)	-0.145	0.020	< 0.001	0.135	Supported (Weakening)
Macroeconomic Volatility (M) $\times$ Product Quality (X2) $\rightarrow$ Purchase Decision (Y)	-0.146	0.021	< 0.001	0.128	Supported (Weakening)

Theoretical Discussion & Synthesis

The direct path evaluations confirm that both external stimuli exert strong, positive, and statistically significant influences on internal consumer trust and ultimate purchasing decisions. Specifically, Digital Marketing Integrity (X1) significantly drives Brand Trust (Z) (H1: $\beta = 0.463$, SE = 0.036, $p < 0.001$, $f^2 =$

0.266). In real estate, digital channels serve as the primary initial touchpoint. When developers maintain promotional honesty—providing accurate 3D virtual tours, transparent pricing, realistic renderings, and responsive online customer care—consumers perceive lower informational risk. This transparency directly fosters psychological reliability and credibility.

Similarly, Product Quality (X2) exerts a powerful positive direct influence on Brand Trust (Z) (H2: $\beta = 0.468$, SE = 0.036, $p < 0.001$, $f^2 = 0.271$). Tangible structural standards, superior building materials, strategic accessibility near the IKN capital corridor, and complete neighborhood infrastructure validate the developer's organizational competence. The near-identical effect sizes of X1 ($f^2 = 0.266$) and X2 ($f^2 = 0.271$) demonstrate that digital promotional honesty and physical construction excellence operate as twin foundational pillars of Brand Trust

These results align with prior empirical research. The substantial impact of digital marketing on brand trust (H1) reinforces findings by Amiruddin et al. (2026) and Prasetyo et al. (2024), who emphasized that transparent digital content reduces information asymmetry. Similarly, the path from product quality to brand trust (H2) supports Basuki et al. (2023) and Ambarwati et al. (2026), demonstrating that physical craftsmanship provides tangible proof of developer integrity. Most importantly, the dominant role of brand trust in driving purchase decisions (H5: $\beta = 0.530$) corroborates Purwanitasari et al. (2025) and Sairi et al. (2026), proving that credibility is the single most essential catalyst for converting prospective homebuyer inquiries into binding property acquisitions.

The empirical findings offer critical strategic guidance for real estate developers operating in East Kalimantan and urban zones surrounding Indonesia's new capital city (IKN):

Shift from Promotional Hype to Trust-Centric Branding: Because Brand Trust (Z) is the primary driver of purchase decisions ($\beta = 0.540$, $f^2 = 0.452$) and a key mediator, developers must reallocate marketing budgets from aggressive sales promotions toward building institutional trust. This includes guaranteed legal certification timelines, milestone-based construction progress reporting, and escrow payment structures.

Integrate Digital Transparency with Tangible Proof: Digital marketing integrity (X1) and product quality (X2) contribute equally to Brand Trust. Developers must ensure that digital representations (3D virtual tours, online specs) match 100% with physical construction delivery to avoid catastrophic trust erosion.

Implement Macroeconomic Risk-Buffering Strategies: To counteract the 51%–63% conversion slump during high macroeconomic volatility, developers must offer financial hedging mechanisms. Examples include fixed-rate mortgage subsidies, extended down-payment installment plans, buyback guarantees, and flexible payment restructuring options.

Conclusion

This empirical study investigated the structural relationships governing residential property purchase decisions among 385 prospective home buyers in Samarinda and Balikpapan—the primary urban buffer zones of Indonesia's new national capital (IKN). Grounded in the Stimulus-Organism-Response (S-O-R) theoretical framework and executed via WarpPLS 8.0, the research evaluated the direct impact of Digital Marketing Integrity (X1) and Product Quality (X2) as external marketing stimuli, the mediating mechanism of Brand Trust (Z) as an internal organism state, and the moderating influence of Macroeconomic Volatility (M) as an environmental boundary condition. Based on the rigorous empirical testing of the measurement and structural models, four major conclusions are synthesized as follows:

Direct Stimulus Drives Brand Trust (H1 & H2 Supported): Digital Marketing Integrity ($\beta = 0.463$, $p < 0.001$, $f^2 = 0.266$) and Product Quality ($\beta = 0.468$, $p < 0.001$, $f^2 = 0.271$) exert strong, positive, and statistically balanced direct effects on Brand Trust. Promotional transparency and physical construction standards serve as equally vital pillars in constructing consumer confidence in high-involvement real estate transactions.

Direct Behavioral Conversion (H3 & H4 Supported): Both external stimuli directly influence final Purchase Decisions, with Product Quality ($\beta = 0.286$, $p < 0.001$, $f^2 = 0.185$) demonstrating a slightly stronger direct conversion force compared to Digital Marketing Integrity ($\beta = 0.228$, $p < 0.001$, $f^2 = 0.138$). Realized physical value remains a critical threshold for final capital commitment.

Dominance of Brand Trust as Decision Predictor (H5 Supported): Brand Trust emerges as the single most powerful direct driver of Property Purchase Decisions ($\beta = 0.540$, $p < 0.001$, $f^2 = 0.452$). With an effect size exceeding the large threshold ($f^2 > 0.35$), psychological assurance and perceived developer integrity represent the primary catalyst for buyer commitment.

Psychological Mediation Mechanism (H6 & H7 Supported): Brand Trust functions as a statistically significant Complementary Partial Mediator for both Digital Marketing Integrity (indirect $\beta = 0.250$, $p < 0.001$) and Product Quality (indirect $\beta = 0.253$, $p < 0.001$) on Purchase Decisions. Marketing efforts and construction excellence convert into sales primarily through the cognitive and emotional bridge of developer trust.

Macroeconomic Moderation Boundary Condition (H8 & H9 Supported): Macroeconomic Volatility exerts a significant negative interaction effect, dampening the direct conversion of Digital Marketing Integrity ($\beta = -0.145$, $p < 0.001$, $f^2 = 0.135$) and Product Quality ($\beta = -0.146$, $p < 0.001$, $f^2 = 0.128$) on Purchase Decisions. Simple slope analysis confirms an attenuation of 63.6% for digital marketing and 51.0% for product quality under high macroeconomic stress.

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