

Digital Transformation in Property Marketing: Adapting to Post-Pandemic Consumer Behavior in Indonesia

Denpharanto Agung Krisprimandoyo^{1*)}, Suwandi Sumartias²⁾, Yudiana Indriastuti³⁾, M. Yus Firdaus⁴⁾,
Garry Brumadyadisty⁵⁾

¹⁾School of Business and Management, Universitas Ciputra Surabaya, Indonesia

²⁾Padjadjaran University, Indonesia

³⁾UPN “Veteran” Jawa Timur, Indonesia

^{4,5)}Syekh Yusuf Islamic University Tangerang, Indonesia

***Corresponding Author**

Email: agungkris@ciputra.ac.id

Abstract

The COVID-19 pandemic has accelerated changes in consumer behavior in Indonesia's property sector, especially the shift toward digital channels. This study examines how digital transformation in property marketing shapes post pandemic consumer behavior and evaluates the mediating role of perceived value. A quantitative survey using structured closed ended questionnaires collected data from 100 respondents, consisting of 50 property consumers and 50 property industry professionals in Indonesian urban areas. The instrument measured digital transformation, perceived value, and consumer behavior on five point Likert scales. All constructs met standard reliability and validity criteria. Using Hayes' PROCESS Macro Model 4, the results show that digital transformation has a positive and significant total effect on consumer behavior ($b = 0.4512$, $p < 0.001$). When perceived value is included, the direct effect remains significant ($b = 0.3015$, $p = 0.001$), and the indirect effect through perceived value is also significant ($b = 0.1497$, BootCI 0.0723 to 0.2341), indicating partial mediation. The model explains 22.5 percent of the variance in consumer behavior ($R^2 = 0.225$). Digital features such as virtual tours, real time interaction, and personalised services enhance perceived value, which strengthens trust, engagement, and purchase propensity. The findings highlight that property firms gain competitive advantage when they design customer oriented digital strategies that emphasise experiential value and digital trust in the post pandemic market.

Keywords: Digital Transformation, Property Marketing, Consumer Behavior, Post-Pandemic Market, Digital Marketing Strategies

INTRODUCTION

The COVID-19 pandemic has profoundly influenced various aspects of life, including consumer behavior within Indonesia's property sector. These behavioral shifts necessitate that companies adopt more effective digital marketing strategies to accommodate consumers who increasingly rely on technology when searching for and purchasing properties. Digitalization in property marketing has become indispensable, enabling companies to remain competitive amidst evolving consumer preferences.

The development of technology and the dynamics of the business ecosystem show the importance of marketing communication strategies as a vehicle to achieve company goals, especially increasing the number of consumers (Lisdiantini et al., 2023). A primary advantage of digitalization in property marketing is its capacity to enhance customer engagement across multiple channels. Studies indicate that a majority of real estate agents have integrated digital marketing tools, particularly social media platforms, which significantly impact consumer purchasing behavior (Li, 2022). These platforms facilitate direct and real-time interactions between agents and clients, fostering higher levels of consumer trust and satisfaction (Oluwunmi, 2023). Additionally, digital marketing enables property developers to analyze consumer preferences and behavior, allowing them to tailor their offerings to align with market demands more effectively (Oluwunmi, 2023).

Furthermore, digitalization has streamlined various processes in real estate transactions. The development of digital services has enhanced the efficiency of property listing, search, and

evaluation mechanisms (Sternik et al., 2021a). This digital-first approach not only reduces transaction times but also improves the accuracy of shared information among stakeholders, fostering a more transparent market environment (Sternik et al., 2021a). The integration of innovative technologies, such as mobile applications and data analytics, has also strengthened the operational efficiency of real estate firms, allowing them to deliver superior services and maintain a competitive edge (Akeju et al., 2021).

Moreover, digital marketing plays a critical role in increasing brand awareness and profitability, a concept well-documented in the context of e-commerce and equally applicable to the property sector. Empirical evidence suggests that well-executed digital marketing strategies significantly enhance brand visibility and, consequently, financial performance (Rose, 2024). This is particularly relevant as property companies increasingly leverage online platforms to reach potential buyers, thereby expanding market reach and improving sales prospects.

Companies or organizations will not develop without marketing, this is very important because it can be one of the company's successful reference in managing its business (Riyadi et al., 2019). The rapid advancement of digital transformation has facilitated a shift from conventional marketing methods to technology-driven approaches, including social media, virtual tours, and property e-commerce platforms. For example, analysts posit that PT. XYZ's strategic pivot towards digital property and data center segments serves as a favorable catalyst for the company's medium-term growth trajectory. This strategic shift is anticipated to sustain positive performance despite the broader stagnation within Indonesia's property sector. Rizal Raffly, an Equity Research Analyst at Ajaib Sekuritas, highlights that the company's sharper strategic focus and improved operational efficiency are beginning to yield tangible outcomes (Investor.id, 2025).

PT. XYZ has demonstrated a forward-looking orientation by consolidating its presence in the digital property domain. Indicators of fundamental enhancement include rising net profits and a more discerning approach to project selection. Financial data from the third quarter of 2025 show that PT. XYZ achieved a net profit of IDR 397.99 million, reflecting a 43.2% increase from the corresponding period in the previous year. This improvement stems in part from cost optimization efforts and a deliberate reallocation of the business portfolio toward sectors offering higher growth potential (Investor.id, 2025).

While global research has extensively examined the digitalization of property marketing, studies specifically addressing its adoption and effectiveness in Indonesia remain limited (X. Zhang et al., 2022). Despite the growing importance of digital transformation in property marketing, there remains a lack of comprehensive understanding regarding how businesses in Indonesia are adapting to post-pandemic consumer behavior. Although global research has explored digital adoption trends, studies examining how Indonesian property firms integrate various digital tools such as social media, virtual tours, and e-commerce platforms to align with shifting consumer preferences are still scarce.

Furthermore, the extent to which digital marketing strategies influence consumer trust and purchasing decisions within Indonesia's property sector remains underexplored. This study aims to bridge this knowledge gap by evaluating the effectiveness of digital marketing adaptation in enhancing consumer engagement and business competitiveness in the post-pandemic landscape.

Digital transformation plays a pivotal role in shaping customer behavior by fostering deeper engagement, enhancing satisfaction, and strengthening loyalty across multiple industries. The incorporation of digital technologies not only restructures business operations but also refines customer interaction processes, resulting in improved service quality and stronger customer advocacy (Aityassine et al., 2022; Onesi-Ozigagun et al., 2024). Empirical studies indicate that digital marketing strategies effectively create emotional bonds between consumers and products, extending beyond transactional behavior and contributing to elevated levels of customer satisfaction (Aityassine et al., 2022). Based on this explanation, the first hypothesis is that

H1: Digital transformation has a positive effect on customer behavior.

Digital transformation has become a strategic imperative for organizations aiming to elevate the value perceived by consumers. This process extends beyond the adoption of advanced technologies and requires a fundamental reconfiguration of business operations, customer engagement models, and mechanisms for delivering value. Extensive literature substantiates the positive influence of digital transformation on perceived value, demonstrating that it significantly shapes various dimensions, including functional, hedonic, and social components.

Empirical studies affirm that digital transformation enhances consumer engagement and elevates perceived value through enriched customer experiences. For instance, Febriani et al. (2022) reveal that the implementation of artificial intelligence in digital marketing improves perceived value, which in turn strengthens consumers' purchase intentions. These findings underscore that contemporary consumers attribute greater value to brands that effectively apply digital marketing strategies. In parallel, Sembhodo et al. (2022) find that the integration of digital marketing and direct sales channels, particularly in industries such as mobile banking, substantially increases perceived value and reinforces customer loyalty. Furthermore, Valverde et al. (2024) confirm that enhanced digital capabilities correlate positively with customer satisfaction, particularly through their influence on customer experience during digital transformation processes. Based on this explanation, the second hypothesis is that

H2: Digital transformation has a positive effect on perceived value.

Perceived value reflects consumers' evaluation of the balance between the benefits they gain and the costs they incur when acquiring a product or service. This construct plays a pivotal role in influencing consumer behavior. A substantial body of research consistently confirms a positive association between perceived value and key behavioral outcomes, including purchase intention, customer loyalty, and brand engagement.

A dominant perspective in the literature emphasizes the importance of perceived utilitarian value in predicting consumer actions. Empirical evidence indicates that utilitarian value serves as a significant determinant of behavioral intentions and consumer attitudes. Consumers who perceive a product or service as highly useful demonstrate a greater likelihood of engaging in purchasing behavior (Ruobing & Chen, 2023; H. Zhang & Liu, 2021). For instance, Chen et al. (2020) report that perceived utility value is positively associated with consumer engagement and purchase frequency, particularly in digital commerce environments. These findings suggest that functional value can play a more decisive role than other consumption motives, especially in contexts where efficiency and practicality are prioritised. Based on this explanation, the third hypothesis is that

H3: Perceived value has a positive influence on customer behavior.

The interplay between perceived value and digital transformation exerts a substantial impact on consumer behavior in the contemporary digital economy. As consumers increasingly interact with digital platforms, their evaluation of the value embedded in products and services becomes a critical factor in shaping purchase intentions and behavioral outcomes.

Perceived value functions as a core mediator in the consumer decision-making process, influencing not only the intention to purchase but also levels of satisfaction and long-term loyalty. Empirical findings by Febriani et al. (2022) demonstrate that the application of artificial intelligence and digital marketing enhances perceived value, which subsequently elevates consumers' purchase intentions. These insights underscore that engagement through digital channels strengthens perceived value while simultaneously supporting the operational efficiencies brought by digital transformation. This convergence illustrates how technological integration is redefining consumer dynamics and fostering a digitally driven consumption paradigm. Based on this explanation, the fourth hypothesis is that

H4: Perceived value mediates digital transformation on consumer behavior.

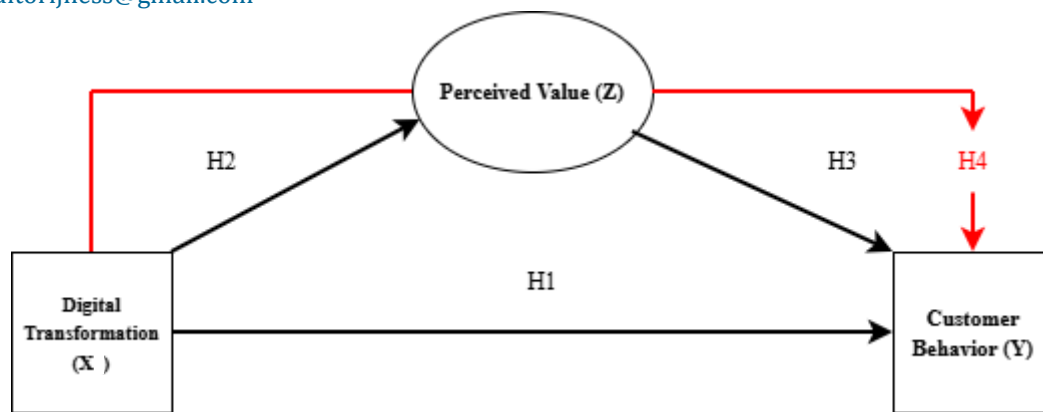


Figure 1. Hypothesis Diagram

As digital transformation advances, the Indonesian property sector encounters a range of emerging challenges. Existing studies have offered limited understanding of shifts in consumer behavior following the COVID-19 pandemic, particularly in relation to the implementation of digital marketing strategies to enhance business performance (Dewi, 2023; Putra et al., 2025). Consequently, this study aims to address this research gap by providing empirical insights into these evolving dynamics.

The objectives of this study include analyzing the post-pandemic changes in consumer behavior within Indonesia's property industry. Identifying the digital marketing strategies property firms utilize to align with new consumer preferences. Evaluating the effectiveness of digital platforms such as social media, virtual tours, and e-commerce in enhancing consumer engagement and trust. Assessing the challenges and opportunities associated with implementing digital transformation in property marketing. And measuring the impact of digital marketing on the competitiveness and growth of the property sector in the post-pandemic period.

This study employs a quantitative research design to examine the adaptation of consumer behavior in Indonesia's property market following the COVID-19 pandemic. A combination of descriptive and explanatory approaches is utilized to investigate the influence of digital transformation in property marketing on consumer engagement, trust, and purchasing decisions.

The research focuses on two primary respondent groups: property consumers and property business actors. To ensure a diverse representation of various consumer demographics and business perspectives, the study adopts the stratified random sampling method. The sample size is determined using the Slovin formula to maintain statistical significance and ensure adequate representativeness.

A structured questionnaire serves as the principal research instrument. The survey consists of closed-ended questions and a Likert scale, designed to assess consumer behavior, preferences, and the effectiveness of digital marketing strategies in shaping their decision-making processes.

The findings of this study are expected to contribute to the academic literature on digital transformation in property marketing, particularly in the Indonesian context. The study aims to offer insights into post-pandemic consumer behavioral shifts and how businesses can refine their marketing strategies accordingly. Additionally, it seeks to provide practical recommendations for property companies on developing effective digital marketing strategies to engage contemporary consumers. The research also offers strategic guidance to property developers and marketers on strengthening consumer trust and engagement through digital platforms. Furthermore, it assists policymakers and industry associations in understanding the implications of digital transformation for the property sector, facilitating the design of supportive policies that encourage technological adoption

RESEARCH METHODS

This study adopts a quantitative research design that integrates descriptive and explanatory methods to investigate consumer behavior adaptation within Indonesia's post-pandemic digital property marketing landscape. The research utilizes structured surveys as the primary instrument to examine the hypothesized effects of digital marketing strategies on consumer engagement, trust, and purchasing decisions (Creswell & Creswell, 2018b).

The study focuses on two distinct respondent categories: property consumers actively involved in searching for, purchasing, or renting properties, and property industry professionals, including real estate agents, developers, and digital marketing practitioners. To ensure proportional representation, the research employs stratified random sampling, selecting 100 respondents from urban regions in Indonesia comprising 50 property consumers and 50 professionals. The sample size is determined using the Slovin formula to maintain statistical validity and representativeness.

A structured questionnaire featuring Likert-scale items serves as the principal tool for data collection (Creswell & Creswell, 2018a). The instrument is designed to assess various dimensions, including consumer digital behavior, trust perceptions, decision-making preferences, and the perceived effectiveness of digital marketing strategies. The questionnaire encompasses five thematic sections: respondent demographics (such as age, income, location, and digital literacy), digital engagement patterns (including social media use, e-commerce interaction, and virtual property tours), trust and engagement in digital transactions, preferences in property search methods, and evaluations of marketing strategies such as targeted advertising, virtual viewings, and digital customer service.

Data collection is conducted over a 4–6 weeks period through online distribution channels, including social media platforms, property discussion forums, real estate websites, and strategic partnerships with property agents and developers. Throughout the process, ethical research standards are maintained, responses are monitored, and data is cleaned before proceeding to statistical analysis.

RESULT AND DISCUSSION

Digitalization in property marketing offers a substantial advantage by enhancing customer engagement across diverse communication channels. Empirical studies show that a growing number of real estate professionals have adopted digital marketing tools, particularly social media platforms, which exert a significant influence on consumer purchasing behavior (S. Li, 2022). These platforms enable real-time, direct interactions between agents and clients, fostering greater consumer trust and satisfaction (Oluwunmi, 2023). Furthermore, digital marketing allows property developers to analyze consumer preferences and behavioral patterns, thereby facilitating the development of market-responsive offerings (Oluwunmi, 2023).

In addition to improving engagement, digitalization has optimized various processes within real estate transactions. The introduction of digital services has improved the efficiency of listing, searching, and evaluating properties (Sternik et al., 2021b). This digital-centric approach accelerates transaction timelines and enhances the accuracy of information shared among stakeholders, contributing to a more transparent and reliable market environment (Sternik et al., 2021b). The adoption of mobile applications and data analytics has further strengthened operational efficiency, enabling real estate firms to deliver higher-quality services while sustaining a competitive advantage (Akeju et al., 2021).

Moreover, digital marketing plays an essential role in building brand awareness and driving profitability. Although extensively studied in e-commerce, this principle also applies to

the property sector. Recent evidence indicates that strategically implemented digital marketing campaigns significantly improve brand visibility, which in turn enhances financial performance (Rose, 2024). As property companies increasingly rely on digital platforms to reach broader audiences, these tools have become critical in expanding market penetration and improving sales outcomes.

Table 1. Sample Selection Parameters

Source: Researcher (2024)

No.	Category	Total Population	Margin of Error (e)	Sample Size (n)
1	Property Consumer	50	0.05	44
2	Property Business	50	0.05	44
3	Actors	100	0.05	80

The study employs a 5% margin of error (0.05) to ensure a statistically reliable sample size with a 95% confidence level. The application of Slovin's formula enables the calculation of a reduced sample size while preserving representativeness.

For a total population of 100 respondents, the formula determines that 80 participants are adequate to maintain statistical validity. Within this sample, each subgroup Property Consumers and Property Business Actors contribute 44 respondents, ensuring balanced representation.

The stratified random sampling method facilitates an even distribution of respondents, thereby enhancing the study's generalizability within Indonesia's urban property markets. This approach effectively minimizes bias and accurately represents the real market composition in the post-pandemic property sector.

Validity Test

Validity testing evaluates whether the research instrument accurately measures the intended constructs. This analysis compares the Corrected Item-Total Correlation (R Count) with the critical R Table value of 0.1966. When the R Count exceeds this threshold, the item is considered valid.

Table 2. Digital Transformation (X1)

No.	R Count	R Table	Description
1	0.500	0.1966	Valid
2	0.533	0.1966	Valid
3	0.464	0.1966	Valid
4	0.473	0.1966	Valid
5	0.258	0.1966	Valid

Table 3. Customer Behavior (Y)

No.	R Count	R Table	Description
1	0.368	0.1966	Valid
2	0.444	0.1966	Valid
3	0.429	0.1966	Valid
4	0.527	0.1966	Valid
5	0.435	0.1966	Valid

Table 4. Perceived Value (Z)

No.	R Count	R Table	Description
1	0.235	0.1966	Valid
2	0.501	0.1966	Valid
3	0.272	0.1966	Valid
4	0.458	0.1966	Valid
5	0.424	0.1966	Valid

The Digital Transformation variable (X1) demonstrates R Count values of 0.500, 0.533, 0.464, 0.473, and 0.258. Each value surpasses the minimum requirement, confirming that all indicators validly represent the Digital Transformation construct. The Customer Behavior variable (Y), has the R Count values which are 0.368, 0.444, 0.429, 0.527, and 0.435. All items

meet the validity threshold, indicating that the construct is measured with relevant indicators that reflect consumer behavior accurately.

The Perceived Value variable (Z) also yields R Count values of 0.235, 0.501, 0.272, 0.458, and 0.424, each exceeding the minimum benchmark. These results confirm that the instrument consistently captures the respondents' perceived value. Overall, all measurement items used for the three variables in this study satisfy the validity criterion. Each item shows a strong correlation with its respective construct score, supporting the conclusion that the instrument is valid and appropriate for measuring digital transformation, customer behavior, and perceived value.

Reliability Test

Reliability testing evaluates the internal consistency of the research instrument by examining how well the items within each construct generate stable and coherent responses. The Cronbach's Alpha coefficient serves as the primary metric in this assessment, with a threshold value of 0.60 indicating acceptable reliability for exploratory research purposes.

Table 5. Reliability Test

Variable	Cronbach Alpha	R table	Description
Digital Transformation (X)	0.602	0,60	Reliable
Customer Behavior (Y)	0.605	0.60	Reliable
Perceived Value (Z)	0.611	0.60	Reliable

The instrument demonstrates satisfactory reliability across all measured variables. The Digital Transformation variable (X) yields a Cronbach's Alpha value of 0.602. The customer behavior variable (Y) records a value of 0.605, and the Perceived Value variable (Z) reaches 0.611. Each of these values exceeds the established minimum threshold, confirming that the respective items are sufficiently interrelated.

These findings support the conclusion that the instrument maintains adequate internal reliability. While the coefficients fall within the lower bound of acceptable range, they still affirm the instrument's suitability for preliminary or exploratory research, ensuring that the measurement of digital transformation, customer behavior, and perceived value is both consistent and dependable.

Classical Assumption Test:

Normality Test

The normality test serves to evaluate whether the data distribution for each variable aligns with the assumption of a normal distribution. This study employed the Shapiro-Wilk method, which is appropriate for samples with fewer than 200 observations. The interpretation relies on the significance value obtained from the test. A significance value greater than 0.05 indicates that the data follow a normal distribution, whereas a value equal to or less than 0.05 suggests a deviation from normality.

Table 6. Normality Test

Tests of Normality			
	Shapiro-Wilk		
	Statistic	df	Sig.
Digital Transformation (X)	,979	100	,112
Customer Behavior (Y)	,973	100	,039
Perceived Value (Z)	,958	100	,010

a. Lilliefors Significance Correction

The digital transformation variable (X) yielded a significance value of 0.112, which exceeds the 0.05 threshold, indicating that the data are normally distributed. In contrast, the customer behavior variable (Y) produced a significance value of 0.039, and the perceived value

variable (Z) showed a value of 0.010. Both results fall below the threshold, signifying that the data for these variables do not follow a normal distribution pattern. These findings indicate that only the digital transformation variable meets the assumption of normality, while the other two variables exhibit non-normal distribution characteristics.

Heteroscedasticity Test

The scatterplot illustrates the relationship between standardized residuals (vertical axis) and standardized predicted values (horizontal axis) derived from the regression model, in which customer behavior (Y) serves as the dependent variable. The heteroscedasticity test aims to detect the presence of unequal residual variance across different levels of predicted values. A robust regression model must fulfill the assumption of homoscedasticity, meaning the residuals should exhibit a random and uniform distribution around the zero axis.

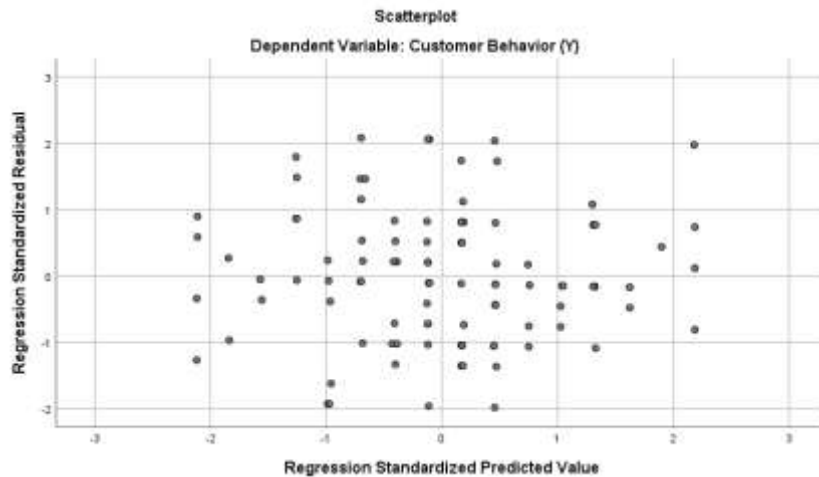


Figure 2. Scatterplot of Variables

The observed distribution of data points appears random, with no discernible patterns such as a funnel, cone, or curvature. The residuals are spread consistently above and below the zero line across the range of predicted values. These findings indicate the absence of systematic variance in the residuals, suggesting that heteroscedasticity is not present. Therefore, the homoscedasticity assumption holds, ensuring that the regression estimates remain unbiased with respect to the variance of the error terms.

Multicollinearity Test

Multicollinearity testing evaluates whether a strong linear correlation exists among the independent variables within a regression model. This assessment relies on two key indicators: the Tolerance value and the Variance Inflation Factor (VIF). A Tolerance value below 0.10 signals potential multicollinearity, while a VIF value exceeding 10 suggests the same issue.

Table 7. Multicollinearity Test

Model	Coefficients ^a					Collinearity Statistics	
	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	Tolerance	VIF
1 (Constant)	16,548	4,539		3,646	,000		
Digital Transformation (X)	-,035	,102	-,035	-,341	,734	,999	1,001
Perceived Value (Z)	-,034	,212	-,016	-,160	,873	,999	1,001

a. Dependent Variable: Customer Behavior (Y)

The results show that the Digital Transformation variable (X) has a Tolerance of 0.999 and a VIF of 1.001. Similarly, the Perceived Value variable (Z) demonstrates a Tolerance of 0.999 and a VIF of 1.001. These values exceed the minimum Tolerance threshold and fall well below the critical VIF level, indicating the absence of multicollinearity.

These findings confirm that the regression model does not exhibit multicollinearity among its independent variables. Each predictor functions independently in explaining the variance of the dependent variable, customer behavior, without introducing redundant linear

influence. Consequently, the interpretation of the regression coefficients remains valid, and the model demonstrates structural integrity suitable for further statistical analysis.

Hypothesis Testing

The PROCESS Macro is an automated module that enhances SPSS by incorporating path analysis capabilities. It supports the examination of mediation, where variable X influences outcome Y through a mediating variable Z; moderation, which explores how the relationship between X and Y varies based on the level of a moderator variable M; and moderated mediation, which integrates both analytical approaches within a single model framework.

This tool employs bootstrapping techniques to test indirect effects, offering higher statistical accuracy compared to traditional methods such as the Sobel test. The macro is capable of estimating over 90 predefined theoretical models (Models 1–92), thereby providing comprehensive support for advanced causal analysis. Researchers can use it to estimate total effects (overall impact of X on Y), direct effects (impact of X on Y independent of mediators), indirect effects (influence transmitted through a mediator), and conditional effects when moderators are present.

Table 8. Macro PROCESS

TOTAL EFFECT MODEL						
OUTCOME VARIABLE: Y						
Model Summary						
R	R ²	MSE	F	df1	df2	p
0.475	0.225	8.0321	28.77	1	98	0.000
Model						
	Coeff	SE	t	p	LLCI	ULCI
Constant	1.5307	10.364	0.000	12.827	18.903	1.5307
X	0.0843	5.351	0.000	0.2835	0.6189	0.0843
Standardized Coefficients						
	Coeff					
X	0.474					
TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y						
Total Effect of X on Y						
Effect	SE	t	p	LLCI	ULCI	c cs
0.4512	0.0843	5.351	0.000	0.2835	0.6189	0.474
Direct Effect of X on Y						
Effect	SE	t	p	LLCI	ULCI	c' cs
0.3015	0.0890	3.387	0.001	0.1247	0.4783	0.317
Indirect Effect(s) of X on Y via Z1						
Mediator	Effect	BootSE	BootLLCI	BootULCI	Mediator	
Z	0.1497	0.0405	0.0723	0.1497	Z	
Completely Standardized Indirect Effect						
Mediator	Effect	BootSE	BootLLCI	BootULCI	Mediator	
Z	0.157	0.0389	0.0754	0.2328	Z	

This analysis applies the Hayes PROCESS Macro Model 4 to examine both the direct and indirect (mediated) effects between the independent variable (X) and the dependent variable (Y) through the mediator (Z). The total effect model reveals that the influence of X on Y is statistically significant. The coefficients $R = 0.475$ and $R^2 = 0.225$ indicate that 22.5% of the variation in Customer Behavior (Y) is explained by X as a whole. The F statistic of 28.77 with a p-value of 0.000 confirms that the overall regression model is significant. The regression coefficient for X is 0.4512 ($p = 0.000$), with a t-value of 5.351 and a 95% confidence interval ranging from 0.2835 to 0.6189, signifying a positive and significant effect of X on Y. The standardized coefficient ($\beta = 0.474$) denotes a moderate relationship strength.

When the mediator is considered, the direct effect of X on Y remains significant, with a coefficient of 0.3015, $p = 0.001$, and $t = 3.387$. The confidence interval (0.1247 to 0.4783) does not include zero, confirming that X influences Y both directly and indirectly. The indirect (mediated) effect through Perceived Value (Z) is also significant, with an effect size of 0.1497,

BootSE = 0.0405, and a 95% bootstrap confidence interval (0.0723–0.2341) that excludes zero, demonstrating the presence of mediation. The standardized indirect effect of 0.157 further indicates that the mediator contributes moderately to linking X and Y.

Overall, the model demonstrates that Digital Transformation (X) exerts a significant direct and indirect influence on Customer Behavior (Y), with Perceived Value (Z) functioning as a partial mediator. The model exhibits adequate predictive power ($R^2 = 22.5\%$) and statistically robust regression coefficients.

Discussion

The findings of this research establish that digital transformation exerts both direct and indirect effects on consumer behavior, with perceived value serving as a partial mediator in this relationship. These results empirically validate hypotheses H1 through H4. The model demonstrates sufficient explanatory strength, with an R^2 value of 0.225, indicating that over 22% of the variation in consumer behavior can be attributed to digital transformation and perceived value.

Statistical evidence supports the first hypothesis, which posits a positive relationship between digital transformation and consumer behavior. A total regression coefficient of 0.4512 with a significance level of $p < 0.001$ confirms that digital strategies, such as transparent information, ease of access, and interactive features substantially influence consumer decision-making patterns. This suggests that consumers actively respond to marketing systems grounded in digitalization, reflected in their information-seeking behavior, purchase intentions, and loyalty.

The second hypothesis, which asserts that digital transformation positively affects perceived value, is also corroborated. All indicators of perceived value exhibit acceptable validity and reliability, with strong item-total correlations. Consumers associate digital platforms with practical advantages including time efficiency, ease of comparison, and enhanced interactive experiences. These attributes position digital transformation not merely as a transactional facilitator but as a driver that elevates the perceived worth of products or services.

The third hypothesis, which highlights the influence of perceived value on consumer behavior, is substantiated through consistent findings. Validity and reliability analyses reveal that consumers' evaluations of digital benefits positively align with their behavioral responses. Functional, emotional, and experiential aspects embedded in digital interfaces encourage deeper engagement and responsiveness among users.

The fourth hypothesis regarding the mediating role of perceived value is statistically supported by the indirect effect analysis using Hayes' PROCESS Macro Model 4. The mediation coefficient of 0.1497, with a bootstrap confidence interval ranging from 0.0723 to 0.2341 (excluding zero), confirms the significance of this mediating mechanism. These results indicate that the impact of digital transformation on consumer behavior is partially transmitted through perceived value. In practical terms, digital innovations must first deliver tangible value to consumers to effectively influence behavioral outcomes.

Collectively, these findings illustrate that digitalisation within property marketing extends beyond channel substitution. It functions as a strategic lever that shapes consumer perceptions and actions. The model employed offers a structural lens to understand how digital innovation translates into behavioral shifts via perceived value. The research instrument maintains acceptable validity and reliability and satisfies key regression assumptions, including partial normality, absence of multicollinearity, and homoscedasticity. Thus, this study provides a robust empirical foundation for the formulation of consumer-centric digital strategies.

This study affirms that digital transformation significantly influences consumer behavior both directly and indirectly, with perceived value acting as a mediating mechanism. The empirical results align with a growing body of literature that positions digital transformation as a strategic enabler of customer engagement, satisfaction, and loyalty (Aityassine et al., 2022; Onesi-Ozigagun et al., 2024). The R^2 value of 0.225 indicates that more than 22% of the variance

in consumer behavior can be accounted for by the joint influence of digital transformation and perceived value, underscoring the explanatory strength of the proposed model.

The positive direct effect of digital transformation on consumer behavior (H1) corroborates prior findings that digital innovations, such as information transparency, platform interactivity, and simplified access transform how consumers search, evaluate, and decide (Halim et al., 2023; Hokonya, 2024). Digitalisation not only modifies transactional interfaces but also reshapes consumer expectations and behavioral patterns. In line with Daradkeh et al. (2023), the results suggest that consumers respond positively to seamless digital environments, confirming the theoretical proposition that digital transformation enhances the consumer journey by personalising and streamlining it.

The study also confirms that digital transformation positively affects perceived value (H2), supporting theoretical claims that technology adoption can enhance functional, emotional, and social dimensions of consumer value (Helal, 2023; Wrede et al., 2020). Respondents in this research recognised digital marketing features, such as virtual tours and real-time communication tools as contributing to the utility and enjoyment of the property search experience. This aligns with the perspective of Febriani et al. (2022) and Valverde et al. (2024), who emphasise that digitally enhanced services generate perceived value not only through efficiency but also through increased engagement and confidence.

Moreover, perceived value significantly influences consumer behavior (H3), consistent with the value behavior linkage model articulated in prior research (Hao & Chen, 2022; H. Zhang & Liu, 2021). Consumers who perceive high utilitarian and hedonic benefits from digital platforms are more likely to develop favourable attitudes and loyalty. In line with Chen et al. (2020), these findings underscore that perceived value functions as a critical determinant of consumer actions, particularly in environments that demand rapid decision-making and trust, such as real estate.

The mediation analysis further validates perceived value as a partial mediator in the relationship between digital transformation and consumer behavior (H4). The statistically significant indirect effect ($\beta = 0.1497$; CI = 0.0723–0.2341) provides empirical support for theoretical assertions that technology's impact on behavior is not merely functional but also perceptual (Bayat, 2025; Yang et al., 2023). Consumers are not passive users of digital features they evaluate, internalise, and assign meaning to their experiences. As such, the success of digital transformation efforts is contingent upon their ability to generate real and perceived value in the minds of users (Kurniawan et al., 2023; Suvittawat, 2023).

These insights reflect the convergence of multiple theoretical streams: technology acceptance models, value-based adoption models, and service-dominant logic. Together, they demonstrate that digital transformation strategies must be value-oriented and experience-driven to yield meaningful consumer impact. Furthermore, the study's robustness is supported by adequate measurement validity, internal reliability, and conformity to key regression assumptions, reinforcing the trustworthiness of the conclusions drawn.

In sum, this research contributes to the theoretical understanding of how digital transformation shapes consumer behavior by emphasising the mediating role of perceived value. It also offers practical implications for organisations in the property sector: digital strategies should not merely focus on system implementation but must be consciously designed to amplify user-perceived benefits. This approach will not only enhance consumer engagement but also foster sustainable competitive advantage in the evolving digital landscape.

CONCLUSION

This study establishes that digital transformation has substantially influenced consumer behavior within Indonesia's post-pandemic property market, both through direct mechanisms and through the mediation of perceived value. The shift in consumer behavior is evident in the growing reliance on digital platforms for property search, evaluation, and purchase decisions. Consumers exhibit heightened responsiveness to the transparency, accessibility, and interactivity provided by digital technologies, which in turn shape their purchasing intentions, loyalty, and engagement levels.

Property companies have adopted various digital marketing strategies, such as the use of social media, virtual tours, and e-commerce platforms, which have demonstrably increased consumer trust and enhanced user experience. These tools function not only as promotional instruments but also as interactive channels that foster emotional bonds between consumers and brands. By leveraging technologies such as artificial intelligence and behavioral analytics, companies are able to craft market offerings that align more precisely with evolving consumer preferences.

The effectiveness of digital platforms is reflected in their capacity to build trust and engagement. Interactive features like real-time communication, personalized content, and immersive experiences contribute significantly to consumers' perceived value. This reinforces the notion that perceived value whether utilitarian or hedonic plays a critical role in shaping behavioral responses. Digital platforms have thus evolved beyond transactional functionality, serving instead as experiential environments that influence how consumers perceive and decide.

Nevertheless, the implementation of digital transformation is not without its challenges. Issues such as limited digital literacy, complex technological integration, and concerns over the reliability of online transactions present notable obstacles. Despite these, substantial opportunities await companies that adopt strategic, value-focused approaches aimed at enhancing user experience. The findings underscore that the success of digital transformation in property marketing hinges not merely on the use of advanced technologies, but more critically, on the ability to generate and communicate meaningful value to consumers.

REFERENCES

- Aityassine, F. L. Y., Al-Ajlouni, M. M., & Mohammad, A. A. S. (2022). The Effect of Digital Marketing Strategy on Customer and Organizational Outcomes. *Marketing and Management of Innovations*, 13(4), 45–54. <https://doi.org/10.21272/mmi.2022.4-05>
- Akeju, M., Olapade, D. T., & Babatunde, T. O. (2021). Awareness and Usage of Mobile Technology in Real Estate Practice in Developing Countries: The Case of Ikeja, Lagos State, Nigeria. *International Journal of Real Estate Studies*, 15(1), 63–71. <https://doi.org/10.11113/intrest.v15n1.9>
- Bayat, S. E. (2025). Digital Markets, Local Products: Psychological Drivers of Buying Nomadic Local Foods Online. *Foods*, 14(20), 3468. <https://doi.org/10.3390/foods14203468>
- Chen, P.-S., Lee, J.-J., Huang, S.-J., & Lin, C. L. (2020). A Study on Consumers Usage Behavior of the Bank S Mobile Payment APPs in Taiwan. *Business and Economics Research Journal*, 11(3), 793–805. <https://doi.org/10.20409/berj.2020.282>
- Creswell, J. W., & Creswell, J. D. (2018a). *Research Design: Qualitative, Quantitative and Mixed Methods Approach* (H. Salmon, Ed.; 5th ed.). SAGE Publications Ltd.
- Creswell, J. W., & Creswell, J. D. (2018b). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). In *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.

- Daradkeh, F. M., Hassan, T. H., Palei, T., Helal, M. Y., Mabrouk, S. H., Saleh, M. I., Salem, A. E., & Elshawarbi, N. N. (2023). Enhancing Digital Presence for Maximizing Customer Value in Fast-Food Restaurants. *Sustainability*, 15(7), 5690. <https://doi.org/10.3390/su15075690>
- Dewi, I. K. (2023). *Changes In Retail Consumer Shopping Behavior After The End Of Covid 19 In Indonesia : Towards Digital Transformation Behavior. 2.*
- Febriani, R. A., Sholahuddin, M., Kuswati, R., & Soepatini. (2022). Do Artificial Intelligence and Digital Marketing Impact Purchase Intention Mediated by Perceived Value? *Journal of Business and Management Studies*, 4(4), 184–196. <https://doi.org/10.32996/jbms.2022.4.4.28>
- Halim, H., Kesuma, T. M., & Siregar, M. R. (2023). Digital Transformation Strategy to Optimize Company Performance. *Jurnal Manajemen Bisnis Akuntansi Dan Keuangan*, 2(2), 189–200. <https://doi.org/10.55927/jambak.v2i2.7022>
- Hao, X., & Chen, Y. (2022). The Relationship Between Perception of New Domestic Skin Care Products and Purchase Intention — Based on the Moderation of Conscientiousness. *Academic Journal of Business & Management*, 4(16). <https://doi.org/10.25236/ajbm.2022.041611>
- Helal, M. Y. (2023). The Impact of Fast-Food Restaurant Customers' Digital Transformation on Perceived Value and Well-Being. *Journal of Hospitality and Tourism Technology*, 14(5), 893–907. <https://doi.org/10.1108/jhtt-05-2022-0141>
- Hokonya, S. (2024). Digital Transformation and Customer Satisfaction: Lessons From Standard Chartered Bank of Zimbabwe. *Texila International Journal of Management*, 10(1), 85–94. <https://doi.org/10.21522/tijmg.2015.10.01.art009>
- Investor.id. (2025). *Transformasi Digital Dukung Prospek REAL di Tengah Stagnasi Pasar Properti*. Investor.id.
- Kurniawan, E., Fitriani, N., Rahadian, M. I., Handaru, A. W., & Nikensari, S. I. (2023). The Role of Digital Marketing, Customer Satisfaction, and Customer Trust in Maintaining Millennial Customer Loyalty: Case Study on the Tokopedia Indonesia Marketplace. *International Journal of Research in Commerce and Management Studies*, 05(06), 113–123. <https://doi.org/10.38193/ijrcms.2023.5609>
- Li, S. (2022). Impact of Digital Marketing on Real Estate Market in China. *BCP Business & Management*, 34, 344–353. <https://doi.org/10.54691/bcpbm.v34i.3035>
- Lisdiantini, N., Sufa, S. A., Zain, F., Bindara, P., Rohman, S., Polytechnic, M. S., & Artikel, I. (2023). *MARKETING COMMUNICATION STRATEGY PT . GO-JEK INDONESIA IN INCREASING THE NUMBER OF CONSUMERS* *Journal of International Multidisciplinary Research Vol : 2 No : 3 Maret 2024 Indonesia , has witnessed rapid development that has become integral in people ' s daily lives . GO-*
- Oluwunmi, A. (2023). Benefits and Challenges to the Adoption of Modern Technologies for Real Estate Marketing in Lagos, Nigeria. *Journal of African Real Estate Research*, 8(1), 1–17. <https://doi.org/10.15641/jarer.v8i1.1207>
- Onesi-Ozigagun, O., Ololade, Y. J., Eyo-Udo, N. L., & Ogundipe, D. O. (2024). Leading Digital Transformation in Non-Digital Sectors: A Strategic Review. *International Journal of Management & Entrepreneurship Research*, 6(4), 1157–1175. <https://doi.org/10.51594/ijmer.v6i4.1005>
- Putra, R., Usman, H., Purwanegara, M. S., & Widyasthana, S. (2025). *Proposed Digital Marketing Strategy on Property Developer Case Study : PT Widyaka Propertindo. 10(1).*
- Riyadi, S., Susilo, D., Sufa, S. A., & Putranto, T. D. (2019). Digital marketing strategies to boost tourism economy: A case study of atlantis land Surabaya. *Humanities and Social Sciences Reviews*, 7(5), 468–473. <https://doi.org/10.18510/hssr.2019.7553>

- Rose, D. E. (2024). Digital Marketing Strategy in Enhancing Brand Awareness and Profitability of E-Commerce Companies. *Aptisi Transactions on Management (Atm)*, 8(2), 160–166. <https://doi.org/10.33050/atm.v8i2.2277>
- Ruobing, Z., & Chen, M. (2023). Predicting Online Shopping Intention: The Theory of Planned Behavior and Live E-Commerce. *SHS Web of Conferences*, 155, 2008. <https://doi.org/10.1051/shsconf/202315502008>
- Sembhodo, A. T., Hermawati, A., Fatmawati, E., Junaedi, I. W. R., & Ali, S. (2022). Personal Selling and Digital Marketing as Crucial Factors in Maximizing Customer Satisfaction Through Perceived Value in the Usage of M-Banking Application. *Jurnal Aplikasi Manajemen*, 20(4). <https://doi.org/10.21776/ub.jam.2022.020.04.05>
- Sternik, S. G., Гапеев, И. Ф., & Akhmetgaliev, T. (2021a). Development of a Digital Service for Real Estate Transactions. *Real Estate Economics Management*, 1, 25–34. <https://doi.org/10.22337/2073-8412-2021-1-25-34>
- Sternik, S. G., Гапеев, И. Ф., & Akhmetgaliev, T. (2021b). Development of a Digital Service for Real Estate Transactions. *Real Estate Economics Management*, 1, 25–34. <https://doi.org/10.22337/2073-8412-2021-1-25-34>
- Suvittawat, A. (2023). Consumers' Attitude Towards Useability of Cashless Transactions in the Thai Nakhon Ratchasima Province : A Structural Equation Modeling Approach. *Ecrm*, 22(1), 192–200. <https://doi.org/10.34190/ecrm.22.1.1532>
- Valverde, S. C., Cuadros-Solas, P. J., Fernández, F. R., & Sánchez-Béjar, J. J. (2024). Digital Innovation and de-branching in the Banking Industry: Customer Perception and Satisfaction. *Global Policy*, 15(S1), 8–20. <https://doi.org/10.1111/1758-5899.13313>
- Wrede, M., Velamuri, V. K., & Dauth, T. (2020). Top Managers in the Digital Age: Exploring the Role and Practices of Top Managers in Firms' Digital Transformation. *Managerial and Decision Economics*, 41(8), 1549–1567. <https://doi.org/10.1002/mde.3202>
- Yang, J., Ren, J., Zhao, M., Chen, H., & Wang, H. (2023). The Impact of Value Co-Creation on Consumer Citizenship Behavior: Based on Consumer Perspective. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1110011>
- Zhang, H., & Liu, C. (2021). *Research on the Impact of Reviews on Consumer Perceived Value in Live Streaming*. <https://doi.org/10.2991/assehr.k.210806.090>
- Zhang, X., Xu, Y., & Ma, L. (2022). Research on Successful Factors and Influencing Mechanism of the Digital Transformation in SMEs. *Sustainability*, 14(5), 2549. <https://doi.org/10.3390/su14052549>