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**AN EXTENDED TPB MODEL OF GREEN HOUSING PURCHASE INTENTION:
EVIDENCE FROM INDONESIA'S URBAN HOUSING MARKET**

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ABSTRACT: *Green housing purchase intention is an important issue in sustainable urban development in Indonesia. This study examines the determinants of green housing purchase intention by extending the Theory of Planned Behaviour (TPB). The model incorporates environmental concern, perceived value, reasonable price, and green product attributes to represent behavioural and economic factors influencing consumer decisions. A quantitative survey was conducted among 286 urban respondents, and the data were analysed using multiple regression. The results indicate that purchase attitude is the strongest predictor of purchase intention. Perceived value and environmental concern have significant positive effects, while perceived behavioural control shows a weaker influence. Subjective norms and reasonable price are not significant. In addition, green product attributes significantly influence purchase attitude, highlighting tangible environmental features shaping consumer perceptions. These findings emphasize the importance of strengthening consumer attitudes and perceived value to encourage green housing adoption*

ABSTRAK: *Niat beli perumahan ramah lingkungan menjadi isu penting dalam pembangunan perkotaan berkelanjutan di Indonesia. Penelitian ini bertujuan menganalisis faktor-faktor penentu niat beli perumahan ramah lingkungan dengan memperluas Theory of Planned Behaviour (TPB). Model penelitian mengintegrasikan kepedulian lingkungan, nilai yang dirasakan, harga yang wajar, dan atribut produk hijau sebagai faktor perilaku dan ekonomi. Penelitian ini menggunakan pendekatan kuantitatif melalui survei terhadap 286 responden yang dianalisis menggunakan regresi berganda. Hasil penelitian menunjukkan bahwa sikap pembelian merupakan faktor paling dominan yang memengaruhi niat beli. Nilai yang dirasakan dan kepedulian lingkungan berpengaruh positif signifikan, sementara persepsi kontrol perilaku berpengaruh lebih lemah. Norma subjektif dan harga yang wajar tidak berpengaruh signifikan. Selain itu, atribut produk hijau berpengaruh signifikan terhadap sikap pembelian. Temuan ini menegaskan pentingnya penguatan sikap dan nilai yang dirasakan untuk mendorong adopsi perumahan ramah lingkungan.*

INTRODUCTION

Climate change, resource scarcity, and environmental degradation have intensified in recent years, placing the built environment sector under increasing pressure to adopt sustainable practices. Housing and construction, which account for a significant share of global carbon emissions and resource consumption, have been a primary focus of these efforts (Zhao & Chen, 2021). Within this context, green housing has emerged as a critical strategy to mitigate environmental impacts, enhance building performance, and improve occupant well-being. In this study, green housing is defined as residential buildings that integrate environmentally sustainable features, such as energy-efficient systems, water-saving technologies, and eco-friendly construction materials. One notable innovation is the use of nickel slag bricks, a by-product of the nickel smelting industry. Beyond addressing industrial waste management challenges, nickel slag enhances the strength, durability, and sustainability of cementitious building materials (Lee, Kim, Yoon, & Choi, 2024).

Globally, the adoption of green housing is supported by research and policy initiatives. Countries such as Malaysia and China have advanced sustainable residential construction through government incentives and evolving consumer preferences. In Malaysia, millennial buyers have driven demand for green homes, motivated by environmental awareness and perceived value (Masukujjaman et al., 2023; Chuweni et al., 2022). In China, symbolic, social, and economic factors significantly influence urban residents' attitudes toward sustainable housing (Ren & Wang, 2023; Zhao & Chen, 2021). Beyond these cases, international evidence also shows stronger policy and consumer-driven adoption in other emerging markets (Darko & Chan, 2018; Zainul Abidin, 2010). By contrast, Indonesia lags in green housing adoption, particularly in rapidly growing urban areas like Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek). Developer perspectives highlight weak regulations, limited market technology, and training deficiencies as major barriers to implementation (Zakiah, 2023). Even in more progressive provincial regions such as East Java, adoption of green building technologies remains constrained by financing and policy factors (Susanto et al., 2024). Moreover, comparisons between subsidized housing and green building reveal that despite superior long-term environmental and quality-of-life benefits, the higher initial investment significantly limits uptake in cost-sensitive Indonesian markets (Wardani et al., 2024).

Although the Green Building Council Indonesia (GBCI) has introduced the *GreenShip* rating system, its application remains concentrated in commercial and high-end residential projects (Wijayaningtyas et al., 2019). Mainstream residential developments still face limited integration of sustainable features, despite mounting urban challenges such as flooding, pollution, and congestion. A persistent misalignment exists between awareness and behaviour among Indonesia's urban middle class. Green homes are often perceived as costly and inaccessible, with barriers including limited financing schemes, low market visibility, and insufficient consumer education on their long-term benefits (Anggraini et al., 2023). As a result, consumer intention to purchase green housing remains low despite rising environmental consciousness. The Theory of Planned Behaviour (TPB) offers a useful lens for studying environmentally related decisions, focusing on attitude, subjective norms, and perceived behavioural control (Masukujjaman et al., 2023). However, recent studies suggest TPB alone does not fully explain consumer motivations in developing markets, where affordability, perceived value, and trust in product attributes play critical roles (Chuweni et al., 2022; Ren & Wang, 2023). To address this persistent misalignment, the present study extends the TPB framework by incorporating perceived value, reasonable price, and green product attributes including innovative use of nickel slag bricks. By integrating these factors, the research aims to provide a more comprehensive understanding of the

psychological, social, and economic determinants of green housing purchase intention in Indonesia's urban context.

Despite growing global momentum in environmental sustainability and the adoption of green building standards, Indonesia's residential sector continues to lag in green housing implementation. Urban regions such as Jabodetabek face escalating challenges, including worsening air pollution, recurrent flooding, and intensifying urban heat island effects, which together threaten environmental quality and urban resilience (Jumadi et al., 2024). Nevertheless, mainstream adoption of sustainable housing solutions remains limited. While eco-friendly practices like energy-saving appliances and water conservation are gradually gaining visibility, the use of innovative construction materials such as recycled nickel slag bricks is still uncommon and poorly understood in the mass housing market (Wijayaningtyas et al., 2019). Although public awareness of green living has increased, consumer willingness to invest in green homes remains low. Green housing is often perceived as expensive, inaccessible, or unreliable in quality, particularly when involving unconventional materials. This reflects a behavioural misalignment between awareness and purchase intention, consistent with patterns observed in other emerging economies (Ren & Wang, 2023; Zhao & Chen, 2021). In Indonesia, such barriers are compounded by limited financing mechanisms, weak developer commitment, and inadequate consumer education on the long-term value and benefits of sustainable housing.

The Theory of Planned Behaviour (TPB) has been widely applied to explain purchase intention in sustainability contexts, including green housing. However, its core constructs including attitude, subjective norms, and perceived behavioural control may not fully capture decision-making in markets where price sensitivity, value-for-money considerations, and trust in material quality are decisive factors (Masukujjaman et al., 2023; Chuweni et al., 2022). While studies in Malaysia and China have extended the TPB by incorporating variables such as perceived value and reasonable price, similar approaches remain underexplored in Indonesia's residential housing sector (Zhao & Chen, 2021; Ren & Wang, 2023). Moreover, existing research on green product adoption rarely integrates construction material innovations such as the use of recycled nickel slag as a determinant of consumer attitudes and behavioural intentions. This represents both a theoretical gap (insufficient understanding of how sustainable materials shape consumer trust and value perception) and a contextual gap (limited evidence from Indonesia, a country with abundant nickel resources and rising urban housing demand). Given that home buying is a high-involvement decision, perceptions of material quality, durability, and affordability are critical. Therefore, there is a pressing need for a more holistic behavioural model that accounts for both psychological drivers and economic realities in green housing adoption. This study addresses this need by extending the TPB framework to include perceived value, reasonable price, and green product attributes (including nickel slag bricks), aiming to provide a more comprehensive explanation of urban consumers' intention to purchase green homes in Indonesia. Based on these insights, the hypotheses of this research are as follows.

H1: Purchasing attitude positively influences green housing purchase intention.

Attitude, within the Theory of Planned Behaviour (TPB), reflects an individual's favourable or unfavourable evaluation of engaging in a particular behaviour (Ajzen, 1991). When consumers perceive green housing especially those built with eco-friendly innovations such as recycled nickel slag bricks as beneficial both personally and socially, their purchase intention is strengthened. Prior studies confirm that positive environmental and economic perceptions enhance adoption likelihood (Masukujjaman et al., 2023; Zhao & Chen, 2021; Tan, 2013).

H2: Subjective norms positively influence green housing purchase intention.

Subjective norms refer to the influence of perceived social pressure in shaping behavioural intention. In collectivist cultures such as Indonesia, opinions of family, peers, and community strongly affect environmentally responsible choices, including housing decisions (Wijayaningtyas et al., 2019). Support from significant referents encourages compliance with sustainable behaviours (Zhao & Chen, 2021).

H3: Perceived behavioural control positively influences green housing purchase intention.

Perceived Behavioural Control (PBC) reflects the extent to which individuals believe they can perform a behaviour, shaped by resource access and barriers (Ajzen, 1991). In green housing, factors such as financing options, unit availability, and regulatory support define this perception. When individuals feel greater control, their purchase intention increases (Tan & Goh, 2018).

H4: Environmental concern positively influences green housing purchase intention.

Environmental concern represents an individual's awareness and responsibility towards ecological sustainability. Consumers with heightened concern are more likely to prioritize green housing, aligning personal consumption with environmental preservation goals (Masukujjaman et al., 2023; Zhao & Chen, 2021).

H5: Perceived value positively influences green housing purchase intention.

Perceived value captures consumers' assessment of benefits relative to costs. In green housing, this includes utility savings, health advantages, and environmental satisfaction. Strong perceived value increases consumers' willingness to adopt sustainable housing (Zhao & Chen, 2021; Ren & Wang, 2023).

H6: Reasonable price positively influences green housing purchase intention.

Price reasonableness reflects perceptions of fairness relative to product benefits. Even if consumers have favourable attitudes toward green housing, purchase intention may decline if homes are viewed as overpriced. Conversely, when pricing is perceived as justified, adoption likelihood increases (Tan & Goh, 2018; Ren & Wang, 2023).

H7: Green product attributes positively influence purchasing attitude.

Green product attributes, such as energy efficiency, sustainable design, and use of recycled materials (e.g., nickel slag bricks), can enhance perceptions of innovation and value. These features shape favourable consumer attitudes by reinforcing the environmental and functional appeal of green housing (Masukujjaman et al., 2023).

Figure 1 illustrates the conceptual research model developed for this study, outlining the seven proposed hypotheses (H1–H7) that investigate the determinants of Green Housing Purchase Intention. The model integrates constructs from the extended Theory of Planned Behaviour (TPB) namely purchasing attitude, subjective norms, perceived behavioural control, and environmental concern alongside additional variables such as perceived value, reasonable price, and green product attributes. These relationships reflect the theoretical framework and assumptions guiding the empirical analysis.

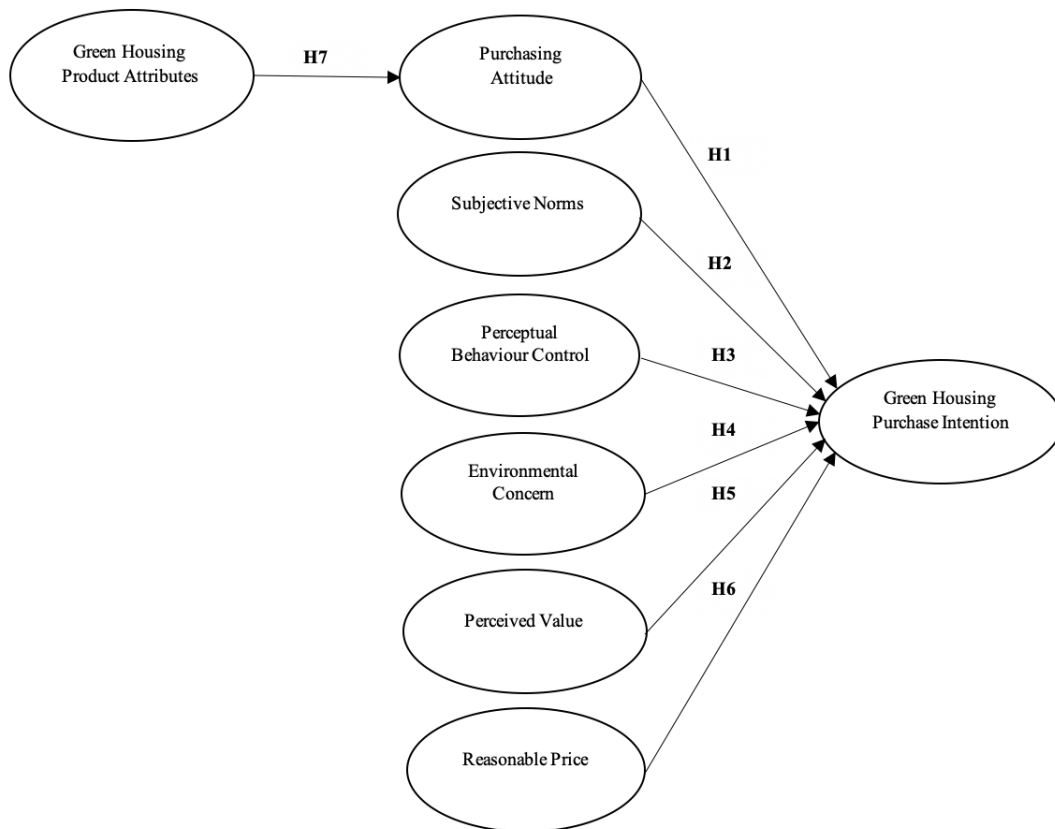


Figure 1: Research Model

METHOD

Data and Samples

This study adopts a quantitative research design using a structured questionnaire distributed online through Google Forms. The survey was conducted over a 30-day period and yielded 286 responses. After a screening process, 36 responses were excluded for not meeting the qualification criteria, resulting in 250 valid respondents. A judgment sampling (purposive sampling) approach was employed, targeting respondents who are potential homebuyers or household decision-makers in Indonesia's urban context, particularly Jabodetabek and other major metropolitan regions. Participants were selected based on criteria of urban residency, stable income, and awareness of housing purchase decisions. This aligns with Sekaran and Bougie (2016), who emphasize that purposive sampling enables researchers to capture insights from individuals with direct relevance to the research phenomenon.

In determining the sample size, multiple methodological guidelines were considered. According to Hair et al. (2019), a minimum ratio of 10:1 (respondents to parameters) is recommended for multivariate regression, while Tabachnick and Fidell (2013) propose the formula $N > 50 + 8m$ (where m is the number of independent variables). With seven predictors in this study, the minimum required sample size is 106 respondents. Additionally, Comrey and Lee (1992) classify 200 as a fair sample, 300 as good, and 500 as very good for behavioural research. By achieving 250 valid responses, this study meets and exceeds the recommended thresholds, ensuring sufficient statistical power and reliability for regression analysis.

The measurement instrument in this study is a structured questionnaire consisting of three main sections. The first section contains screening questions designed to ensure that only qualified respondents are included in the sample. The criteria required that respondents possess sufficient understanding of the key aspects being studied. This ensured that participants could meaningfully engage with the research constructs. The second section addresses the research constructs, which were measured using a six-point Likert scale ranging from “Strongly Disagree” (1) to “Strongly Agree” (6). Attitude, subjective norm, perceived behavioural control, and purchasing attitude were adapted from Ajzen’s Theory of Planned Behaviour framework (Ajzen, 1991). Environmental concern was measured using items adapted from Masukujjaman et al. (2023) and Ren and Wang (2023), while perceived value and reasonable price were both adapted from Masukujjaman et al. (2023). Green product attributes were developed from Ren and Wang (2023), contextualized to highlight eco-friendly features such as the use of recycled nickel slag bricks. Purchase intention was measured using items adapted from Zhao and Chen (2021) and Tan (2013). All constructs were treated as reflective indicators, with items carefully adapted to ensure contextual relevance in Indonesia’s urban housing market.

The final section of the questionnaire collected demographic information to capture the characteristics of respondents, including age, gender, education level, occupation, monthly income, and current housing status. Prior to full-scale distribution, the questionnaire underwent a pilot test with 30 respondents to assess clarity, reliability, and contextual suitability, ensuring that the instrument was both comprehensible and aligned with the objectives of this study. The analysis of quantitative data in this study will be conducted in three stages. First, descriptive statistics will be used to summarize respondent profiles and provide key statistics such as the mean, standard deviation, and correlation of each variable. This step helps in understanding the demographic characteristics of respondents and the general distribution of responses across all constructs. Second, the study will perform validity and reliability testing to ensure that the measurement items are both appropriate and consistent. Validity will be examined through factor loading, with acceptable thresholds set at values greater than 0.50 (Hair et al., 2014). Reliability will be tested using Cronbach’s alpha. For exploratory research, coefficients above 0.60 indicate satisfactory internal consistency (Malhotra, 2020). These tests will confirm whether the constructs including attitude, subjective norm, perceived behavioural control, purchasing attitude, environmental concern, perceived value, reasonable price, green product attributes, and purchase intention are measured accurately and reliably. Third, hypothesis testing will be conducted using multiple regression analysis to examine the effects of independent variables on the dependent variable (purchase intention). This method is appropriate given the study’s objective of testing the extended Theory of Planned Behaviour (TPB) model. Before conducting the regression, multicollinearity diagnostics will be performed using tolerance and the Variance Inflation Factor (VIF), with thresholds of tolerance > 0.10 and $VIF < 10$ (Hair et al., 2014; Sekaran & Bougie, 2016). Once the assumptions are met, the standardized beta coefficients (β) from regression analysis will be used to evaluate the relative contribution of each independent variable in predicting green housing purchase intention. Statistical significance will be assessed at the 5% level ($p < 0.05$). All data analysis will be conducted using Statistical Package for Social Sciences (SPSS) version 29.0.2.0 (IBM, 2022).

Data Analysis

The respondents of this study consisted of 250 individuals who were recruited using an online survey method. The sampling approach employed was judgmental sampling, ensuring that the selected respondents matched the research context of green housing purchase intention in Indonesia. The survey

was distributed across multiple regions in Indonesia, with most participants residing in Jakarta (31.6%), Depok (21.2%), and Tangerang (20.8%). Regarding gender distribution, the respondents were relatively balanced, with 48.8% male ($n = 122$) and 51.2% female ($n = 128$). In terms of marital status, slightly more than half of the respondents were married (52.4%), while 46.4% had not yet married. Only a very small proportion were divorced, widowed, or previously married (1.2%).

In terms of age distribution, the largest group of respondents were within the productive age of 28–43 years old (38.0%), followed by 18–27 years old (32.0%) and 60–78 years old (20.0%). Smaller proportions belonged to the 44–59 years category (9.2%) and above 78 years old (0.4%). This indicates that the majority of respondents were in their early working and family-raising phases, which aligns with the target market of green housing products. With regard to educational background, the majority of respondents had completed undergraduate (S1) degrees (67.6%), followed by diploma holders (14.8%), postgraduate graduates (11.6%), and high school graduates (6.0%). This profile suggests that the respondents were relatively well-educated, which is relevant to awareness and decision-making regarding environmentally friendly housing.

For household income levels, the largest proportion of respondents (40.8%) reported a monthly household income between IDR 5–10 million, followed by IDR 10–20 million (22.8%). Respondents earning less than IDR 5 million accounted for 14.4%, while those with incomes between IDR 20–40 million represented 12.8%. A smaller group of respondents (9.2%) earned more than IDR 40 million monthly. These figures reflect a broad range of income levels, with a concentration in the middle-income bracket, making them potential adopters of affordable green housing. Overall, the demographic distribution of respondents particularly in gender balance, education level, and income group provides a reliable basis for analysing the factors influencing green housing purchase intention in the Indonesian context. Table 1 presents the detailed profiles of the respondents.

Table 1: Profile of Respondents

No	Characteristic	Frequency	Percentage
1	Gender		
	Male	122	48.8%
	Female	128	51.2%
2	Age group		
	Under 18 years old	1	0.4%
	18 -- 27 years old	80	32.0%
	28 - 43 years old	95	38.0%
	44 - 59 years old	23	9.2%
	60 - 78 years old	50	20.0%
	Above 78 years old	1	0.4%
3	Marital status		
	Single	116	46.4%
	Married	131	52.4%
	Previously married	3	1.2%
4	Education		
	High School / Equivalent	15	6.0%
	Diploma (D1-D3)	37	14.8%
	Bachelor's Degree (S1)	169	67.6%
	Postgraduate (S2/S3)	29	11.6%
5	Income		
	< IDR 5 million	36	14.4%
	IDR 5 million - < IDR 10 million	102	40.8%

	IDR 10 million - < IDR 20 million	57	22.8%
	IDR 20 million - <40 million	32	12.8%
	> IDR 40 million	23	9.2%
6	Residence		
	DKI Jakarta	79	31.6%
	Bogor (City/Regency of Bogor)	14	5.6%
	Depok	53	21.2%
	Tangerang (City/Regency of Tangerang)	52	20.8%
	Bekasi (City/Regency of Bekasi)	18	7.2%
	Outside Jabodetabek	34	13.6%

Table 2: Mean, SD, Correlation Matrix

Variable	Mean	SD	1	2	3	4	5	6	7
Purchasing Attitude	5.0704	.89182							
Subjective Norms	4.27	1.13191	.632**						
Perceptual Behaviour Control	4.6453	1.00578	.541**	.535**					
Environmental Concern	4.442	1.04859	.604**	.658**	.621**				
Green Product Attributes	4.9696	.84684	.805**	.641**	.540**	.624**			
Perceived Value	4.9787	.86608	.771**	.610**	.468**	.584**	.884**		
Reasonable Price	4.8893	.807	.621**	.479**	.489**	.490**	.693**	.654**	
Green Housing Purchase Intention	4.922	.89533	.790**	.627**	.588**	.651**	.798**	.750**	.605**

*p<.05, **p<.01.

The correlation analysis shows the relationships among the seven constructs. The strongest correlated factor is green product attributes with perceived value ($r = .884$), followed by green product attributes with purchasing attitude ($r = .805$) and with Purchase Intention ($r = .798$). Perceived value also shows strong correlations with purchasing attitude ($r = .771$) and purchase intention ($r = .750$). Environmental concern is strongly related to subjective norms ($r = .658$) and purchase intention ($r = .651$), while reasonable price is moderately to strongly correlated with green product attributes ($r = .693$), perceived value ($r = .654$), and purchase intention ($r = .605$). The weakest but still significant relationship appears between perceived behavioural control and perceived value ($r = .468$). Table 2 presents the mean, standard deviation, and correlation values of each variable. To ensure the robustness of the measurement model, both validity and reliability tests were performed. Construct validity was first examined through Exploratory Factor Analysis (EFA) conducted separately for each construct. The Kaiser-Meyer-Olkin (KMO) values ranged from 0.650 to 0.860, all above the minimum threshold of 0.50, indicating sampling adequacy. Bartlett's Test of Sphericity for each construct was statistically significant ($p < 0.001$), confirming the appropriateness of the data for factor analysis (Malhotra, 2020). The factor loadings across all items ranged from 0.734 to 0.911, comfortably exceeding the recommended cut-off of 0.50 (Hair et al., 2014). These results confirm that the observed indicators were strongly correlated with their respective latent constructs, thereby establishing convergent validity.

Reliability was assessed using Cronbach's alpha to evaluate the internal consistency of the measurement items within each construct. The results show that the reliability coefficients ranged from 0.637 for the reasonable price construct to 0.920 for purchase attitude, indicating acceptable to excellent levels of internal consistency. All constructs demonstrated Cronbach's alpha values above the minimum acceptable threshold of 0.60. Although the reasonable price construct exhibited a comparatively lower

alpha value than the other constructs, it remained within the acceptable range and therefore did not indicate reliability concerns. The inclusion of the reasonable price construct was further justified by the theoretical relevance of its measurement items and the adequacy of their factor loadings, all of which exceeded the recommended cut off value of 0.60. These results suggest that the items consistently represent the intended construct and demonstrate sufficient convergent validity. Moreover, the relatively high reliability observed across the remaining constructs reflects strong internal consistency and stability of the measurement instrument.

Collectively, these findings indicate that the instrument achieved satisfactory validity and strong reliability, supporting its suitability for further statistical analysis. Taken together, the results provide strong evidence that the measurement items used in this study are both valid and reliable, thereby ensuring the robustness and credibility of subsequent hypothesis testing. A detailed summary of the factor loadings, Kaiser–Meyer–Olkin (KMO) values, and Cronbach’s alpha coefficients for each construct is presented in Table 3 below.

Table 3: The validity and reliability of measuring items

Construct	Code	Items	Factor Loadings
Purchasing Attitude (Cronbach’s α = 0.920) (KMO = 0.860)	PA1	I think it is wise to buy a green housing.	0.896
	PA2	I think it is beneficial to buy a green housing.	0.895
	PA3	I think it is a good idea to buy a green housing.	0.902
	PA4	I think it is pleasant to buy a green housing.	0.849
	PA5	I think it is very important to buy a green housing.	0.835
Subjective Norms (Cronbach’s α = 0.850) (KMO = 0.753)	SN1	The people who are important to me think I should buy a green housing.	0.800
	SN2	Under social pressure, I think I should buy a green housing.	0.878
	SN3	Under social pressure, I think many people will buy green housing.	0.880
	SN4	If I buy a green housing, those who are important to me will fully agree.	0.765
Perceptual Behaviour Control (Cronbach’s α = 0.737) (KMO = 0.671)	PBC1	I think I have a lot of control over buying a green housing.	0.840
	PBC2	If I want to, it is easy for me to buy a green housing.	0.758
	PBC3	Whether to buy a green or not mainly depends on myself.	0.837
Environmental Concern (Cronbach’s α = 0.854) (KMO = 0.726)	EC1	I often pay attention to environmental information and reports and advertisements related to green products	0.791
	EC2	I often talk to others about environmental problems or green products	0.857
	EC3	I think I am an environmentally friendly consumer	0.865
	EC4	I think I am a person who is very concerned about environmental issues	0.849
Green Housing Purchase Intention (Cronbach’s α = 0.867) (KMO = 0.818)	PI1	I want to live in a green housing.	0.819
	PI2	I am willing to buy a green housing in the future.	0.893
	PI3	I would consider a greenhouse for my next Housing purchase.	0.850
	PI4	I plan to buy a green housing.	0.833
Green Product Attributes (Cronbach’s α = 0.895) (KMO = 0.856)	GPA1	I think green housing has better water-saving and energy-saving performance than ordinary housing	0.823
	GPA2	I think green housing are more comfortable than ordinary housing	0.813
	GPA3	I think green housing has better greening effect than ordinary housing	0.865
	GPA4	I think the development of green housing is conducive to the overall improvement of the current social environment	0.870

Perceived Value (Cronbach's α = 0.885)	GPA5	I think the development of green housing can improve the overall public's awareness of environmental protection	0.840
	PV1	Green Housing's environmental functions provide very good value for me.	0.907
	PV2	Green Housing's environmental performance meets my expectations.	0.911
Reasonable Price (Cronbach's α = 0.637)	PV3	Buying a green Housing has more environmental benefits than other conventional Housings.	0.888
	RP1	I would buy a green Housing if the price is reasonable.	0.780
	RP2	The price of green Housings is normally higher than that of conventional Housings.	0.734
(KMO = 0.650)	RP3	It is easy to justify the price and benefits of green Housings.	0.781

To verify the proposed hypotheses (H1–H7), the first regression model was conducted with six independent variables: purchase attitude, subjective norms, perceived behavioural control, environmental concern, perceived value, and reasonable price, with purchase intention as the dependent variable. The second regression model was employed to test the effect of green product attributes on purchase attitude. The analysis was performed using SPSS Version: 29.0.2.0.

Before running the analysis, multicollinearity diagnostics were examined. As recommended by Hair et al. (2014), tolerance values above 0.10 and variance inflation factors (VIF) below 10 indicate no multicollinearity issue. For the first model, tolerance values ranged between 0.332 and 0.514, and VIF values ranged between 1.844 and 3.305. For the second model, the tolerance was 1.000 and the VIF was 1.000. These results confirm that the data is free from multicollinearity problems. The regression coefficients, significance levels, and multicollinearity diagnostics for both models are summarized in Table 4.

Tabel 4: The hypothesis testing

Hypothesis	Path	Standardized coefficients (β)	t-values	p Values	Tolerance	VIF	Status
H1	Purchasing Attitude → Green Home Purchase Intention	0.381	6.418	<0.001	0.332	3.014	Supported
H2	Subjective Norms → Green Home Purchase Intention	0.05	1.001	0.318	0.46	2.174	Unsupported
H3	Perceptual Behaviour Control → Green Home Purchase Intention	0.128	2.756	0.006	0.542	1.844	Supported
H4	Environmental Concern → Green Home Purchase Intention	0.136	2.617	0.009	0.434	2.306	Supported
H5	Perceived Value → Green Home Purchase Intention	0.253	4.271	<.001	0.333	3.005	Supported
H6	Reasonable Price → Green Home Purchase Intention	0.051	1.065	0.288	0.514	1.944	Unsupported
H7	Green Home Product Attributes → Purchasing Attitude	0.805	21.349	<0.001	1.000	1.0000	Supported

For the first regression model, the adjusted R^2 value is 0.709, meaning that 70.9% of the variation in purchase intention can be explained by the six independent variables. The model is statistically significant, with $F(6,243) = 102.301$, $p < .001$. The standardized coefficients (β) show that purchase attitude ($\beta = 0.381$, $p < .001$), perceived behavioural control ($\beta = 0.128$, $p < .01$), environmental concern ($\beta = 0.136$, $p < .01$), and perceived value ($\beta = 0.263$, $p < .001$) significantly influence purchase intention. However, subjective norms ($\beta = 0.050$, $p > .05$) and reasonable price ($\beta = 0.051$, $p > .05$) were not significant predictors. Thus, H1, H3, H4, and H5 are supported, while H2 and H6 are not supported.

For the second regression model, the adjusted R^2 value is 0.646, meaning that 64.6% of the variation in purchase attitude can be explained by green product attributes. The model is also statistically significant, with $F(1,248) = 455.779$, $p < .001$. The standardized coefficient indicates that green product attributes ($\beta = 0.805$, $p < .001$) positively and significantly affect purchase attitude, thereby supporting H7. In summary, the results demonstrate that purchase attitude is the strongest predictor of purchase intention, followed by perceived value, environmental concern, and perceived behavioural control. In contrast, subjective norms and reasonable price do not significantly influence purchase intention in this study. Additionally, green product attributes have a substantial and significant effect on purchase attitude, confirming their importance in shaping consumer perception.

RESULTS AND DISCUSSION

This study advances the theoretical understanding of green housing purchase intention by integrating the Theory of Planned Behaviour (TPB) with extended constructs, namely environmental concern, perceived value, reasonable price, and green product attributes. The regression results provide several theoretical contributions. First, purchase attitude emerges as the most influential predictor of purchase intention. This finding strengthens Ajzen's (1991) TPB framework, which highlights attitude as a central determinant of behavioural intention. The result suggests that when individuals perceive green housing positively, they are more likely to translate this evaluation into an intention to purchase. This aligns with Zhao and Chen (2021), who argue that positive evaluations of green housing can shift consumer demand in urban property markets. Second, perceived value is the second most significant factor influencing purchase intention. This highlights the importance of value perception in the adoption of eco-friendly housing products. While TPB emphasizes psychological drivers, the integration of perceived value extends the theory by capturing economic and functional assessments that shape consumer decisions. This finding supports Masukujjaman et al. (2023), who argue that consumer purchase decisions for sustainable housing are strongly tied to whether the product delivers superior functional and emotional value. Third, environmental concern also significantly contributes to purchase intention. This indicates that pro-environmental attitudes extend beyond general awareness and manifest as behavioural tendencies in housing decisions. The result adds weight to the growing body of literature that positions environmental consciousness as a critical driver of sustainable consumption (Ren & Wang, 2023). By confirming this relationship in the Indonesian urban housing context, this study strengthens the external validity of environmental concern as a behavioural antecedent across cultural and geographic settings. Fourth, perceived behavioural control has a positive and significant effect on purchase intention, albeit smaller compared to attitude, value, and concern. This suggests that consumers' perception of control over financial and situational resources plays a role in shaping intentions. In line with Ajzen (1991), this finding reinforces the role of self-efficacy and resource availability in bridging intention and behaviour.

Interestingly, subjective norms and reasonable price did not significantly influence purchase intention. This diverges from prior studies (e.g., Tan & Goh, 2018), which found social influence and affordability as critical predictors in green housing adoption. One possible explanation is that, in the Indonesian urban context, individual evaluation particularly attitudes and perceived value exert a stronger influence on green housing purchase intention than social pressure or price considerations. This interpretation is supported by Amalia et al. (2021), whose study found that green perceived value and attitude were significant predictors of purchase intention among Indonesian consumers, whereas

subjective norms and price had less influence. Their findings suggest that individuals tend to place greater weight on personal assessments of environmental value rather than external social expectations or cost concerns when making high-involvement purchase decisions. For subjective norms, this suggests that decisions regarding green housing, a high-involvement and long-term investment, are less influenced by social expectations and more determined by personal conviction. Theoretically, this suggests a boundary condition within TPB whereby normative influence diminishes in high-cost, high-commitment purchases consistent with meta-analyses showing subjective norms are generally the weakest predictor of intentions (Armitage & Conner, 2001; Morren & Grinstein, 2016) and with evidence that behavioural barriers impede the conversion of social pressure into action creating a value-action misalignment where people's favourable attitudes or social influences don't always lead to green behaviours (Hoffmann, et al., 2024).

Similarly, the insignificance of reasonable price indicates that affordability is not the main driver of green housing adoption. Instead, buyers may perceive green housing as a long-term investment in sustainability and quality of life, which reduces their sensitivity to immediate cost considerations. This finding supports the proposition of a "*value-over-price orientation*" theory. The notion of a value-over-price orientation is grounded in Customer Value Theory (Zeithaml, 1988; Woodruff, 1997) and the sustainability marketing literature emphasizing mindful consumption (Sheth et al., 2011), where perceived long-term value overrides immediate price considerations, suggesting that in markets where sustainability is a key differentiator, perceived value and ecological responsibility override cost sensitivity. Thus, both unsupported hypotheses (H2 and H6) offer theoretical insights that refine the existing literature by emphasizing the primacy of individual evaluation and long-term value over normative influence and affordability in the adoption of green housing in emerging markets.

Finally, the study confirms that green product attributes have a substantial impact on purchase attitude, which in turn strongly predicts purchase intention. This finding enriches TPB by introducing product-level attributes as an antecedent to attitude formation. By contextualizing attributes such as the use of recycled nickel slag bricks, this study bridges behavioural theory with product innovation literature, demonstrating how tangible features of sustainable housing directly shape consumer evaluations and subsequent intentions.

CONCLUSION

The findings of this study provide several practical implications for real estate developers, policymakers, and other stakeholders in the housing industry who aim to accelerate the adoption of green housing in Indonesia's urban context. First, since attitude emerged as the most influential determinant of purchase intention, developers and marketers need to design persuasive campaigns that highlight the tangible and intangible benefits of green housing. These campaigns should emphasize long-term financial savings, such as reduced energy costs, alongside health benefits like improved indoor air quality and lifestyle alignment with sustainable living. Framing green housing as both a rational investment and a desirable lifestyle choice will strengthen consumer attitudes and make adoption more likely. Second, it is essential to leverage perceived value as a differentiator. Consumers are more likely to adopt green housing when the benefits clearly outweigh the costs. Developers should therefore communicate both the financial advantages (lower utility expenses, reduced maintenance) and the intangible values (prestige, environmental responsibility, and quality of life). By bundling these factors into their product positioning, firms can create a compelling value proposition that resonates in competitive urban housing markets. Third, even though reasonable price did not show strong influence in this study, affordability remains a critical concern for Indonesian consumers. Developers should

consider offering innovative financing mechanisms, such as green mortgages, flexible instalment schemes, or partnerships with banks for preferential loan rates. At the same time, policymakers can introduce supportive instruments like tax incentives, interest subsidies, or government-backed guarantees. Together, these measures can address price sensitivity and improve the accessibility of green housing. Fourth, the study underlines the importance of eco-friendly product attributes, including the use of recycled materials such as nickel slag bricks. Developers are encouraged to invest in product innovation and ensure that sustainable features are prominently communicated in their marketing. Certification labels such as EDGE or Greenship should be integrated into housing projects to enhance credibility, build consumer trust, and reduce perceived risks in adopting eco-friendly products. Fifth, since environmental concern significantly contributes to purchase intention, stakeholders must actively cultivate greater environmental awareness in urban communities. Developers, local governments, and NGOs can collaborate on initiatives such as eco-housing exhibitions, community workshops, and citywide green-living campaigns. These activities not only raise awareness but also foster stronger pro-environmental values among urban residents, particularly in growing metropolitan areas like Jabodetabek. Finally, the results suggest that policy support and cross-stakeholder collaboration are essential to mainstream green housing in Indonesia. Government bodies should integrate sustainable housing into urban planning frameworks, enforce green building codes, and promote collaborative partnerships with developers, banks, and regulatory authorities. By embedding green housing in the broader sustainability agenda, adoption becomes not just a matter of individual consumer choice but part of a coordinated national strategy for sustainable urban development.

Every research has its limitations, and this study is no exception. Firstly, the data were collected from respondents primarily residing in urban areas of Indonesia, particularly Jabodetabek. As such, the findings may not fully represent consumer perceptions in rural areas or secondary cities where housing demand patterns, cultural values, and financial capacities may differ significantly. Future research could expand the sampling frame to include respondents from diverse geographic regions to strengthen generalizability across Indonesia. Secondly, this study employed a cross-sectional survey design, which captures consumer perceptions and intentions at a single point in time. As consumer attitudes toward green housing may evolve with market maturity, government policy, and technological innovation, future studies could adopt a longitudinal approach to better understand how purchase intentions develop and change over time. Thirdly, this research focused on seven constructs including purchasing attitude, subjective norms, perceived behavioural control, perceived value, reasonable price, environmental concern, and green product attributes within an extended Theory of Planned Behaviour framework. While these variables explain significant variance in purchase intention, future research could explore additional factors such as trust in developers, government incentives, brand reputation, or perceived risks. It would also be valuable to examine moderating variables such as income level, education, or age to reveal potential differences among consumer segments. Lastly, the current research applied a quantitative approach using regression analysis. While this provides statistical generalization, it does not fully capture the depth of consumer motivations and lived experiences. Future studies may consider qualitative or mixed methods approaches, such as in-depth interviews, focus groups, or conjoint analysis, to uncover richer insights into consumer decision-making processes. Moreover, experimental methods could be used to test how different marketing messages, financing schemes, or product innovations influence purchase intentions in real-world settings. In sum, addressing these limitations will open opportunities for future research to broaden theoretical contributions, strengthen empirical validity, and

generate more nuanced insights to guide the development of green housing markets in Indonesia and beyond.

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