

GREENER HOMES, RELUCTANT BUYERS? PSYCHOLOGICAL AND POLICY DETERMINANTS OF GREEN HOUSING INTENTION AMONG GENERATION Z IN AN EMERGING ECONOMY

Indrasakti Agung Nugroho¹, Mohamad Rizan^{1*}, Dianta Sebayang¹

¹ State University of Jakarta, Jl. Rawamangun Muka, RT.11/RW.14, Rawamangun, Pulo Gadung, Kota Jakarta Timur, Daerah Khusus Ibukota Jakarta 13220, Indonesia; (IAN) e-mail: Indrasan.idz@gmail.com; (MR) e-mail: mohamadrizan72@unj.ac.id; (DS) e-mail: dianta.sebayang@unj.ac.id, ORCID: 0009-0007-4133-1681

* Corresponding author

ARTICLE INFO	ABSTRACT
Keywords: green housing, personal values, social norms	This study aims to examine the psychological and policy determinants of green housing purchase intention among Generation Z in Indonesia. Using a quantitative, explanatory design, data were collected through a cross-sectional online survey of 247 respondents and analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM) to test direct and moderating relationships. The technical analysis assessed reliability, validity, path coefficients, and interaction effects. Findings reveal that environmental knowledge, personal values, and social norms significantly shape environmental concern, with personal values emerging as the strongest predictor. Environmental concern, in turn, positively influences intention to purchase green housing, although the effect is moderate, indicating an attitude–behavior gap. Contrary to expectations, perceived benefits and Perceived Government Policy Support do not significantly moderate this relationship, suggesting limited consumer trust, information gaps, and weak policy signaling. The study offers novelty by positioning environmental concern as a contingent rather than deterministic driver and by integrating psychological antecedents with contextual moderators in a generational perspective. However, limitations include purposive sampling, cross-sectional design, and restricted generalizability. Future research should employ longitudinal designs, broader samples, and deeper investigation of financial, institutional, and communication factors to better explain the translation of environmental concern into actual green housing adoption more effectively.
JEL Classification: D12, Q13, Q56	
Citation: Ahead of Print	
Agung Nugroho, I., Rizan, M. & Sebayang, D. (2026). Greener homes, reluctant buyers? Psychological and policy determinants of green housing intention among generation Z in an emerging economy. <i>Real Estate Management and Valuation</i> , [Ahead of print]. https://doi.org/10.2478/remav-2026-0035	

1. Introduction

Housing occupies a unique position in the sustainability debate. Unlike most consumer goods, housing is not only a basic human need but also a long-term investment. Housing shapes energy use patterns and resource consumption, as well as impacting the environment (Ge et al., 2020; He et al., 2019; Kuchler et al., 2023). In developing countries like Indonesia, the expansion of housing development based on sustainability effects has intensified efforts to address this challenge (Zakiah, 2023).

Green housing is a unique form of sustainable

consumption. It entails high financial costs, long-term commitments, and limited reversibility (Bashir et al., 2023; Darko, 2019; Mushanga et al., 2024). Unlike other everyday green products, housing purchase decisions involve complex evaluations, where moral considerations intersect with economic risks.

Previous research on green housing adoption has found that consumers emphasize factors such as price, access to financing, institutional support, and the physical attributes of housing units (Bashir et al., 2023; Galster & Lee, 2021; Yeganeh et al., 2019). This study attempts to uncover important insights into why some

consumers are still willing to adopt green housing, despite having to pay relatively higher costs.

In more recent studies, many researchers have begun to highlight the role of psychological factors in shaping green housing purchase decisions. Decisions based on environmental concern have been identified as a central motivational construct linking sustainability awareness to behavioral intention (Ágoston et al., 2022; Boluda-Verdú et al., 2022; Ha et al., 2023; Majeed et al., 2023). However, empirical findings continue to show inconsistent results. While some studies report a strong positive relationship between environmental concern and green housing purchase intentions (Kumar et al., 2021; Sivadasan et al., 2020), others find weak or insignificant effects. The differences occur particularly in emerging markets characterized by affordability pressures and policy uncertainty (Mushanga et al., 2024). This inconsistency suggests that environmental concerns alone may not be sufficient to explain the adoption of green housing.

In Indonesia, the majority of prospective home buyers are still driven by price, location, and accessibility to financing, while environmental attributes tend to play a secondary role (Astuti et al., 2019; Zakiah, 2023). This gap between sustainability ambitions and market behavior raises an important question: why haven't various efforts to raise environmental awareness translated into stronger demand for green housing?

In the concept of sustainable consumption, it is consistently emphasized that environmental concern is the main psychological driver of pro-environmental product purchasing behavior (Liao et al., 2020; Sun et al., 2022). However, when attention shifted to housing, the results still do not reveal uniformity. Consumer decisions in purchasing a home involve substantial financial commitments and long planning horizons. (Portnov et al., 2018; Sivadasan et al., 2020; Zhao & Chen, 2021). This may be what makes consumers hesitant to choose green housing (Zhang et al., 2022; Qin et al., 2022). Environmental concern, while important, is apparently not sufficient to explain its influence on green housing purchase intentions.

Various studies implicitly assume that knowledge of environmental sustainability forms the informational basis for environmental concern (Vicente-Molina et al., 2018; Rusyani et al., 2021). Likewise, personal values, as beliefs, can influence the extent to which individuals internalize aspects of environmental sustainability as personal responsibilities (Schultz et al., 2005; Degnet et al., 2022). Furthermore, social norms place individual choices within a social context, which can strengthen or

limit environmental concern (Sparkman et al., 2021; Czajkowski et al., 2017).

Factors that influence environmental concern have been the subject of many previous studies, most of the empirical studies focus on the direct effect on the intention to purchase green products (Kumar et al., 2021; Schulte et al., 2022; Zhuang et al., 2021). Meanwhile, in developing markets, they still face a dilemma between the ideals of environmental sustainability and economic viability (Sivadasan et al., 2020).

In the context of green housing, many consumers are still unaware of its benefits. These people may be more willing to purchase green housing when they understand and experience the benefits (Akroush et al., 2019; Deo & Prasad, 2024). Various government policies such as market incentives, financial incentives and various efforts to increase consumer awareness to support the development of green housing (Anshari & Almunawar, 2022; Chen et al., 2021; L. He & Chen, 2021). This signifies the country's commitment to sustainable housing development (Williams et al., 2020). However, information gaps and uncertainty about institutional support continue to make consumers uncertain about their decision-making (Setyowati, 2023).

This study seeks to address several interconnected gaps in the literature. First, it moves beyond economic explanations of green housing adoption by examining the psychological formation of environmental concern through environmental knowledge, personal values, and social norms. Second, it challenges the assumption that environmental concern directly leads to green housing purchase intentions by investigating the moderating roles of perceived benefits and Perceived Government Policy Support. Third, it introduces a generational perspective by focusing on Generation Z consumers in Indonesia as potential housing consumers in the next decade. Theoretically, this study contributes to the literature on sustainable consumption and housing. Environmental concern is expected to serve as a contingent driver rather than a deterministic predictor of housing purchase intentions. Practically, the results provide insights for policymakers and housing developers who want to design interventions that resonate with younger consumers by combining environmental messages through credible communications and supportive policy signals.

2. Literature Review and Hypothesis Development

2.1. Environmental Knowledge and Environmental Concern

Environmental knowledge is generally conceptualized as an individual's understanding of environmental issues. The consequences of these activities are related to consumption (Hossain et al., 2022; Pothitou et al., 2016; Rusyani et al., 2021). From a cognitive perspective, environmental knowledge is expected to increase awareness of environmental problems and strengthen environmental concern (Rusyani et al., 2021). Several empirical studies show that individuals with higher environmental knowledge tend to show greater concern for environmental protection (Ágoston et al., 2022; Hamzah & Tanwir, 2021; Saari et al., 2021). However, the relationship between environmental knowledge and environmental concern is not uniformly positive. Some studies have shown that knowledge does not always translate into concern, particularly when environmental issues are perceived as abstract, distant, or disconnected from immediate personal concerns (Saari et al., 2021; Schultz et al., 2005). In contexts such as purchasing a green home, individuals may have adequate environmental knowledge while remaining relatively indifferent to environmental aspects, as consumers are more inclined towards financial risk, affordability, and life cycle considerations dominating their decision-making (Abhang & Ravi Kumar, 2024). This divergence suggests that environmental knowledge may serve as an enabling rather than determining factor in the formation of environmental concern. Given these mixed findings, environmental knowledge remains theoretically relevant. Therefore, this study proposes the following hypothesis:

H1: Environmental knowledge has a positive effect on environmental concern.

2.2. Personal Values and Environmental Concern

Personal values represent enduring beliefs that guide an individual's judgments, priorities, and behavioral orientation (Degnet et al., 2022). In environmental research, values oriented toward altruism and biosphere concern are often associated with stronger environmental awareness and perceived moral obligation (Schultz et al., 2005).

According to the Value–Belief–Norm framework, personal values shape how individuals interpret environmental information and assess the importance of environmental protection (Ahmad et al., 2020;

Rusyani et al., 2021). Empirical evidence generally supports a positive relationship between sustainability-oriented values and environmental concern (Degnet et al., 2022). However, this relationship is not immune to contextual pressures. In decision contexts involving substantial financial commitments, personal values may compete with pragmatic considerations such as income stability, perceived risk, and future uncertainty (Bashir et al., 2020; Zeng et al., 2023; Zhuang et al., 2021). This tension is particularly pronounced among Gen Z consumers, whose value orientations may favor sustainability while their economic resources remain limited (Gomes et al., 2023; Salam et al., 2024). Personal values can foster environmental concern without having to ensure their translation into action (Chaturvedi et al., 2020; Stern & Dietz, 1994; Zhao & Chen, 2021). Nevertheless, personal values remain the basic psychological driver in the formation of concerns. Based on this, the following hypothesis is proposed:

H2: Personal values have a positive effect on environmental concern.

2.3. Social Norms and Environmental Concerns

Social norms refer to shared expectations regarding appropriate behavior within a social group (Nyborg, 2018; Sparkman et al., 2021). Normative influence operates by signaling which attitudes and behaviors are socially approved, thereby shaping individual perceptions and concerns (Gifford & Nilsson, 2014). In the context of environmental behavior, social norms can legitimize sustainable choices and strengthen environmental concerns.

The effectiveness of social norms is highly context-dependent. When environmentally sustainable practices are widely visible and socially supported, social norms can have a powerful influence on environmental sustainability (Czajkowski et al., 2017; Nyborg, 2018; Sparkman et al., 2021). Conversely, when green housing is perceived as elitist, inaccessible, exclusive, or irrelevant to a person's social reference group, normative pressure may be weak or even counterproductive. In such contexts, social norms may fail to raise environmental concerns or may reinforce disengagement from sustainable housing options.

Recent studies have highlighted that social norms are particularly influential among younger consumers, whose attitudes are shaped by peer networks and digital social environments (Sparkman et al., 2021). However, normative influence among Generation Z may also be fragmented (Chaturvedi et al., 2020;

Ganguli et al., 2022; Salam et al., 2024). This reflects the diversity of peer behavior and conflicting signals (Chaturvedi et al., 2020). This ambiguity suggests that the relationship between social norms and environmental concern still requires empirical examination.

H3: Social norms have a positive effect on environmental concern.

2.4. Environmental Concern and Intention to Buy Green Housing

Environmental concern has been widely recognized as a key antecedent of green purchase intentions across various consumption domains (Bashir et al., 2020; Wang et al., 2021). Individuals who express greater concern for environmental issues are generally more likely to consider environmental attributes in consumption decisions (Ogiemwonyi et al., 2023; Saari et al., 2021; Zameer & Yasmeen, 2022). Despite this general trend, evidence from high-involvement consumption contexts reveals substantial variability in the strength of this relationship. In the case of housing, strong environmental concerns can coexist with hesitation, delay, or compromise, as consumers weigh environmental ideals against financial feasibility and institutional uncertainty (Setyowati, 2023). Empirical studies report that environmental concerns do not always have a significant influence on green housing purchase intentions, especially in emerging markets (Kumar et al., 2025; Nekmahmud & Fekete-Farkas, 2020). This inconsistency suggests that environmental concern serves as a necessary but not sufficient condition for green housing purchase intentions. Nevertheless, it remains a central motivating force underlying intention formation. Therefore, the following hypothesis is proposed:

H4: Environmental concern has a positive effect on intention to buy green housing.

2.5. The Moderating Role of Perceived Benefits

Perceived benefits refer to consumers' beliefs about the benefits associated with green housing, including energy efficiency, increased comfort, health benefits, and economic value (Liao et al., 2020; Nekmahmud & Fekete-Farkas, 2020; Selasi et al., 2025). Previous research shows that perceived benefits play an important role in shaping green purchasing decisions, especially for high-cost and high-risk products (Anthony, 2023; Ma et al., 2022; Zhao & Chen, 2021). When perceived benefits are clear and credible, consumers may be more willing to justify higher upfront

costs and can balance environmental concerns with financial considerations (Gomes et al., 2023; Nekmahmud & Fekete-Farkas, 2020). Conversely, when benefits are ambiguous or poorly communicated, environmental concerns may fail to motivate purchase intentions. This suggests that perceived benefits condition the extent to which environmental concerns translate into intentions.

H5: Perceived benefits moderate the relationship between environmental concern and intention to buy green housing, such that the relationship is stronger when perceived benefits are high.

2.6. The Moderating Role of Perceived Government Policy Support

Perceived Government Policy Support is an important institutional context for green housing adoption. Policy instruments, such as subsidies, tax incentives, certification schemes, and housing finance support, can reduce perceived barriers and increase legitimacy (Darko, 2019; Islam et al., 2022; Roh et al., 2021; Ullah et al., 2021; Wang et al., 2021). Beyond economic incentives, policy support can boost consumer confidence by signaling the government's long-term commitment to sustainable housing development.

In some contexts, policy measures are perceived as inconsistent, inadequate, or inaccessible, limiting their influence on consumer decision-making. This variability suggests that policy support can strengthen the impact of environmental concern on purchase intentions only if it is perceived as credible and relevant.

H6: Perceived Government Policy Support moderates the relationship between environmental concern and intention to buy green housing, such that the relationship is stronger when perceived policy support is high.

2.7. Conceptual Framework

Taken together, the hypotheses proposed in this study reflect an integrated framework in which environmental knowledge, personal values, and social norms shape environmental concern, which in turn influences intention to purchase green housing. This framework further recognizes perceived benefits and government policies as contextual moderators that address the explanatory limitations of environmental concerns on green housing purchase intentions.

3. Research Methodology

3.1. Research Design

This study uses a quantitative and explanatory research design to examine the psychological and contextual mechanisms underlying green housing purchase intentions among Generation Z consumers in Indonesia. The approach used was a cross-sectional survey in accordance with the purpose of this study, which is to examine the theoretically grounded relationship between latent constructs.

Given the research's focus on conditional relationships, particularly the moderating role of perceived value and Perceived Government Policy Support, a variance-based structural modeling approach was deemed appropriate. Therefore, Partial Least Squares–Structural Equation Modeling (PLS-SEM) was used, as it allows simultaneous estimation of complex relationships involving multiple constructs and interaction effects without imposing strict distributional assumptions (Hair et al., 2021).

3.2. Sample and Data Collection

The target population consists of Generation Z consumers in Indonesia, defined as Generation Z working individuals born after 1995 (Cilliers, 2017, pp. 189–190) who represent potential first-time homebuyers. This generational focus is theoretically motivated by the study's emphasis on the tension between sustainability awareness and affordability constraints in housing decisions.

A purposive sampling technique was employed because a comprehensive sampling framework for prospective homebuyers was unavailable. While this approach limits statistical generalizability, it is suitable for theory-testing research that requires respondents with specific characteristics relevant to the research context.

Data were collected through a self-administered online questionnaire distributed through social media platforms (Google Forms) and by sending the questionnaire to individuals who met the study's sampling criteria. Prior to the main survey, a pilot test of the instrument was conducted with 30 respondents to ensure item clarity and reliability. Minor wording adjustments were made based on feedback from the pilot test. A total of 300 questionnaires were distributed, resulting in over 247 responses. The responses were valid and met the recommended sample size requirements for PLS-SEM analysis with moderation effects (Hair et al., 2021).

3.3. Measurement of Constructs

All constructs were operationalized as reflective latent variables and measured using several items adapted from established studies. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used.

Environmental knowledge was measured using items that capture respondents' understanding of environmental issues and the environmental implications of housing choices, adapted from Vicente-Molina et al. (2018).

Personal values were operationalized through items reflecting biospheric and altruistic value orientations related to environmental protection, adapted from Schultz et al. (2005). Social norms were measured using items assessing perceived social expectations and peer influence regarding sustainable housing choices, based on Gifford and Nilsson (2014). Environmental concern was measured with items reflecting awareness of environmental issues and perceived responsibility for environmental protection, adapted from Bashir et al. (2020).

Perceived benefits capture respondents' beliefs about the economic, health, and comfort benefits associated with green housing, adapted from Akroush et al. (2019). Perceived Government Policy Support is operationalized as perceived policy support, including incentives, regulatory clarity, and institutional commitment, adapted from Williams et al. (2020). Intention to buy green housing measures the respondents' willingness and likelihood to purchase green housing in the future, adapted from Wang et al. (2021).

3.4. Data Analysis

Data analysis was performed using SmartPLS 3.0. The analysis procedure followed the guidelines of Hair et al. (2021).

1) Measurement Model Assessment:

Reliability: Cronbach's $\alpha \geq 0.70$ and Composite Reliability ≥ 0.70 (Fornell & Larcker, 1981).

Validity: AVE ≥ 0.50 and HTMT < 0.85 .

2) Structural Model Assessment:

Evaluation of path coefficients, R^2 , f^2 , and Q^2 .

Bootstrapping (5,000 resamples) to test hypothesis significance (Chin, 1998; Hair et al., 2021).

3) Moderation Analysis:

Interaction terms were created to assess the moderating role of perceived benefits and Perceived Government Policy Support (Hair et.

al., 2017).

4) Ethical Considerations:

Participation in this study was voluntary, and respondents were informed of the study's purpose before completing the questionnaire. Anonymity and confidentiality were guaranteed, and no personally identifiable information was collected. This study adhered to established ethical standards for social science research and received approval from the relevant institutional review board prior to data collection.

4. Result

4.1. Respondent Profile

Out of the 247 valid responses collected, the demographic profile of the participants is detailed in Table X. All respondents are working individuals and, having been born after 1995, representatives of Generation Z, which is in alignment with the study's focus on imminent, first-time homebuyers.

Table 1

Demographic Profile of Respondents (N = 247)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	140	56.68%
	Female	147	43.32%
Age Group	18–22 years old	150	60.73%
	23–27 years old	45	18.22%
	28–31 years old	52	21.05%
Education	High School / Equivalent	0	0%
	Bachelor's Degree	143	57.89%
	Postgraduate Degree	104	42.11%
Occupation	Private Sector Employee	152	61.54%
	Government/SOE	34	13.77%
	Entrepreneur/Self-Employed	60	24.29%

Source: data collected by researcher. 2025.

4.2. Measurement Model Assessment

The measurement model was evaluated through internal reliability tests, convergent validity, and discriminant validity according to PLS-SEM guidelines (Hair et al., 2021).

Table 2

Reliability and Convergent Validity

Construct	Item	Loading	Cronbach's Alpha	CR	AVE
Environmental Knowledge (EK)	EK1	0.782	0.808	0.874	0.635
	EK2				
	EK3				
	EK4				
Personal Values (PV)	PV1	0.865	0.886	0.921	0.744
	PV2	0.881			
	PV3	0.847			
	PV4	0.858			
Social Norms (SN)	SN1	0.773	0.796	0.867	0.620
	SN2				
	SN3				
	SN4				
Environmental Concern (EC)	EC1	0.844	0.872	0.907	0.709
	EC2	0.859			
	EC3	0.826			
	EC4	0.841			
Perceived Benefits (PB)	PB1	0.832	0.854	0.901	0.695
	PB2	0.852			
	PB3	0.818			
	PB4	0.837			
Perceived Government Policy Support (GP)	GP1	0.791	0.819	0.880	0.648
	GP2	0.823			
	GP3	0.801			
	GP4	0.789			
Intention to Buy (IB)	IB1	0.874	0.892	0.926	0.757
	IB2	0.886			
	IB3	0.859			
	IB4	0.872			

Source: own study.

The measurement model demonstrates satisfactory convergent validity. All outer loadings exceed the recommended threshold of 0.70, indicating adequate indicator reliability. Cronbach's alpha values range from 0.796 to 0.892 and composite reliability values range from 0.867 to 0.926, both exceeding the minimum requirement of 0.70, thereby confirming strong internal consistency.

Furthermore, the Average Variance Extracted (AVE) values range from 0.620 to 0.757, exceeding the 0.50 threshold, which indicates that each construct explains more than half of the variance of its indicators. Collectively, these results confirm that the constructs exhibit adequate convergent validity.

4.3. Discriminant Validity

Table 3

Construct	HTMT Ratio						
	OAK	PV	SN	EC	PB	GP	IB
OAK	-						
PV	0.62	-					
SN	0.57	0.65	-				
EC	0.70	0.73	0.68	-			
PB	0.54	0.60	0.56	0.71	-		
GP	0.48	0.51	0.53	0.58	0.64	-	
IB	0.45	0.57	0.54	0.75	0.68	0.61	-

Source: own study.

All HTMT values are below the conservative cut-off value of 0.85, indicating that discriminant validity is established.

This suggests that each construct captures a conceptually distinct phenomenon and that multicollinearity between latent variables is not problematic. The results therefore support the empirical distinctiveness of the proposed constructs within the green housing behavioral framework.

4.4. Collinearity Assessment

Table 4

VIF Values	
Predictor → Endogenous	VIF
EK → EC	1.79
PV → EC	2.18
SN → EC	1.73
EC → IB	2.24
PB × EC → IB	1.96
GP × EC → IB	2.05

Source: own study.

All VIF values fall well below the conservative threshold of 3.3, indicating that collinearity is not a concern in the model. This suggests that the structural estimates are stable and not biased by multicollinearity among predictor constructs.

To check for potential common method bias (CMB) arising from the self-reported, cross-sectional design, a full collinearity assessment was performed following Kock (2015). All latent constructs were simultaneously regressed against a single random dummy variable to generate factor-level Variance Inflation Factors (VIFs). The resulting VIF values for all indicators and latent constructs were found to be safely below the conservative threshold of 3.3, confirming that common method bias does not threaten the validity of the structural model findings.

4.5. Measurement Model Discussion

The measurement model demonstrates satisfactory psychometric properties. All indicator loadings exceed the recommended threshold of 0.70, indicating adequate indicator reliability. Furthermore, Cronbach's alpha and composite reliability values for all constructs are above the minimum threshold of 0.70, confirming strong internal consistency.

Convergent validity is also supported, as all Average Variance Extracted (AVE) values exceed the recommended level of 0.50. This suggests that the constructs explain more than half of the variance of their indicators. In addition, discriminant validity is established as all HTMT ratios fall below the conservative threshold of 0.85, indicating that the constructs are empirically distinct from one another.

Taken together, these results suggest that the measurement scales used in this study are both reliable and valid for capturing the psychological constructs underlying green housing purchase intention among Generation Z respondents.

4.6. Structural Model Assessment

After the measurement model meets reliability and validity criteria, the next step is to evaluate the structural model.

This evaluation is carried out by assessing the path coefficient, coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2) using a bootstrapping procedure with 5,000 subsamples (Hair et al., 2021).

Coefficient of Determination (R^2)

Table 5

Coefficient of Determination		
Endogenous Construct	R^2	Interpretation Environmental
Concern	0.524	Moderate
Intention to Buy Green Housing	0.361	Moderate

Source: own study.

The R^2 value for Environmental Concern was 0.524, indicating that environmental knowledge, personal values, and social norms collectively explained 52.4% of the variation in respondents' environmental concern. Based on Hair et al.'s (2021) classification, this value indicates moderate explanatory power.

Meanwhile, the R^2 for intention to buy green housing was 0.361, meaning that environmental

concern, along with moderating variables, explained 36.1% of the variation in intention to purchase green housing. This value indicates the model's adequate explanatory power, given the complexity of housing purchase decisions, which are often influenced by other economic and institutional factors.

Effect Size (f^2)

Table 6

Relationship	Effect Size	
	f^2	Interpretation
Environmental Knowledge → Environmental Concern	0.041	Small
Personal Values → Environmental Concern	0.279	Medium
Social Norms → Environmental Concern	0.056	Small
Environmental Concern → Intention to Buy	0.091	Small–Medium
Perceived Benefits (moderation)	0.008	Negligible
Perceived Government Policy Support (moderation)	0.011	Negligible

Source: own study.

Effect size analysis showed that personal values had the strongest influence on environmental concern ($f^2 = 0.279$), which is categorized as a medium effect size. This finding confirms that personal value orientation is the primary psychological foundation that shapes environmental concern. In contrast, environmental knowledge and social norms only showed small effect sizes, indicating that these two factors played more of a supporting role than a primary driver of environmental concern.

For the main relationship between environmental concern and intention to buy green housing, the effect size is in the small to medium category, indicating that environmental concern does contribute to the formation of purchase intention, but is not the only determining factor in housing decisions. Meanwhile, both moderating variables showed very small effect sizes, which is consistent with the insignificant results of the hypothesis testing.

Predictive Relevance (Q^2)

Table 7

Predictive Relevance		
Endogenous Construct	Q^2	Interpretation
Environmental Concern	0.331	High predictive relevance
Intention to Buy Green Housing	0.219	Medium predictive relevance

Source: own study.

The results of the blindfolding analysis show that all Q^2 values are greater than zero, indicating that the model has predictive relevance. A Q^2 value of 0.331 for environmental concern indicates quite strong predictive ability, while a Q^2 value of 0.219 for intention to buy indicates moderate predictive ability.

These findings indicate that the proposed model not only has adequate explanatory power but also has relevant predictive power towards green housing purchasing behavior.

Table 8

Hypothesis Testing					
Hypothesis	Relationship	β	t-value	p-value	Result
H1	Environmental Knowledge	0.189	2,434	0.015	Supported
H2	Personal Values → Environmental Concern	0.476	5,870	0.000	Supported
H3	Social Norms → Environmental Concern	0.213	2,649	0.008	Supported
H4	Environmental Concern → Intention to Buy	0.279	2,627	0.009	Supported
H5	EC × Perceived Benefits → Intention	−0.059	0.494	0.621	Rejected
H6	EC × Perceived Government Policy Support → Intention	0.088	0.846	0.398	Rejected

Source: own study.

4.7. Hypothesis Testing

The structural model results indicate that environmental concern acts as a key psychological mechanism linking values, knowledge, and social

norms to green housing purchase intentions. This finding reinforces the sustainable consumption literature, which positions environmental concern as a crucial antecedent of pro-environmental behavior.

Among the antecedents tested, personal values emerged as the strongest determinant of environmental concern, both in terms of path coefficients and effect sizes. This suggests that biospheric and altruistic value orientations play a significant role in shaping environmental awareness in Generation Z. This finding aligns with the Value–Belief–Norm theory framework, which emphasizes that personal values are the psychological foundation for environmental attitudes and behaviors.

In contrast, environmental knowledge and social norms have a more moderate influence. This suggests that environmental knowledge and social pressure do contribute to the formation of environmental concern, but neither fully determines an individual's level of concern.

The relationship between environmental concern and intention to purchase green housing proved significant, though of relatively moderate strength. This indicates that environmental concern does increase the likelihood of purchasing green housing, but housing decisions are still influenced by other considerations such as affordability, access to financing, and economic risk.

Interestingly, the results of this study indicate that perceived benefits and Perceived Government Policy Support failed to moderate the relationship between environmental concern and purchase intention. This finding indicates that although respondents had relatively high environmental concern, perceptions of the benefits of green housing and Perceived Government Policy Support were not strong enough to significantly strengthen purchase intentions. This may reflect information uncertainty, limited understanding of the economic benefits of green housing, and the perception that government policies do not provide sufficiently clear incentives for consumers.

Overall, these results indicate that the psychological mechanisms for forming environmental concern have functioned well, but the process of transforming this concern into green housing purchase decisions still faces various structural and economic obstacles in the context of emerging markets.

5. Discussion

This study provides a deeper understanding of the psychological and contextual factors that influence green housing purchase intentions among Generation Z consumers in Indonesia.

1. Psychological Formation of Environmental Concern

Research results show that environmental concern is formed through a combination of environmental knowledge, personal values, and social norms. Of these three factors, personal values emerged as the strongest determinant.

These findings support the Value–Belief–Norm (VBN) theory framework, which states that personal values are the primary foundation for forming pro-environmental attitudes and behaviors. Individuals with strong biospheric and altruistic value orientations tend to be more sensitive to environmental issues and more motivated to consider sustainability in consumption decisions.

Meanwhile, the relatively moderate influence of environmental knowledge suggests that environmental knowledge does not necessarily automatically translate into high levels of environmental concern. In the context of complex housing decisions involving long-term financial commitments, consumers may still prioritize economic considerations over environmental aspects.

Social norms have also been shown to have a positive influence on environmental awareness, indicating that social pressure and expectations from the social environment contribute to shaping environmental awareness in the younger generation.

2. Environmental Concern and the Intention to Purchase Green Housing

The results of the study indicate that environmental concern has a positive influence on green housing purchase intentions. This finding reinforces the literature on sustainable consumption, which places environmental concern as a key determinant of purchasing behavior for environmentally friendly products. However, the strength of the relationship is moderate. This indicates an attitude-behavior gap in sustainable consumption. Individuals may have environmental concerns, but housing purchase decisions are still influenced by other factors such as affordability, access to financing, and perceived investment risk. Thus, environmental concern can be viewed as an important but insufficient psychological condition to directly drive green housing purchase decisions.

3. Possible Reasons for Non-Supported Moderating Effects

This study found no evidence that perceived benefits or Perceived Government Policy Support moderated the relationship between environmental concern and purchase intentions. The insignificant role of perceived

benefits may indicate that consumers don't fully understand the economic and health benefits of green housing. Many of the benefits of green housing are long-term, such as energy efficiency and operational cost savings, while additional costs are usually felt immediately at the time of purchase. Furthermore, the insignificant role of Perceived Government Policy Support may reflect the fact that perceived policy support from consumers is still relatively weak or not yet sufficiently visible.

4. Theoretical Contributions

The present research makes several important contributions to the literature on sustainable consumption and green housing adoption. First, the study shows that the formation of environmental concern in the residential context is influenced by a combination of values, knowledge, and social norms, with personal values as the dominant factor.

Second, this study shows that environmental concern does not always directly result in green housing purchase intentions, particularly in the context of decisions involving large financial commitments. Third, this study provides empirical evidence that contextual factors such as perceived benefits and government policies may not necessarily strengthen the relationship between environmental concern and purchase intentions in the context of emerging markets.

The structural path analysis revealed that neither interaction term, reached significance. While these results contrast with the initial hypotheses, they point toward potential underlying dynamics that warrant further investigation. Speculatively, it is plausible that the insignificant role of perceived benefits points to a disconnect where long-term economic gains remain unclear to Gen Z consumers relative to high upfront premiums. Similarly, the lack of moderating power from perceived policy support may tentatively suggest that existing institutional frameworks are suffering from weak visibility or messaging mismatches. However, because structural factors like communication gaps, institutional trust, and market information asymmetrical balances were not explicitly measured in our empirical model, these interpretations remain as speculative assumptions that ought to be rigorously tested by future research.

5. Practical Implications

The findings of this study provide important implications for housing developers and policy makers. For housing developers, green housing marketing strategies need to emphasize clearer communication of

the economic and health benefits of green housing. For policymakers, the results of this study highlight the importance of increasing the visibility and credibility of policies supporting green housing, including through financial incentives, public education programs, and more consistent regulations.

Ethical Approval Information

This research protocol was designed and executed in accordance with established ethical benchmarks for tracking human interactions in social sciences. The study design and questionnaire instrument were reviewed and formally approved by State University of Jakarta Ethics Committee.

References

- Abhang, J., & Ravi Kumar, V. V. (2023). Three decades of house purchase decisions: A scoping review and thematic classification. *International Journal of Housing Markets and Analysis*, 17(5), 1243–1266. <https://doi.org/10.1108/IJHMA-02-2023-0030>
- Ágoston, C., Csaba, B., Nagy, B., Kóváry, Z., Düll, A., Rácz, J., & Demetrovics, Z. (2022). Identifying types of eco-anxiety, eco-guilt, eco-grief, and eco-coping in a climate-sensitive population: A qualitative study. *International Journal of Environmental Research and Public Health*, 19(4), 2461. Advance online publication. <https://doi.org/10.3390/ijerph19042461> PMID:35206648
- Ahmad, W., Kim, W.G., Anwer, Z. & Zhuang, W. (2020). Schwartz personal values, theory of planned behavior and environmental consciousness: How tourists' visiting intentions towards eco-friendly destinations are shaped? *Journal of Business Research*, 110, 228–236. <https://doi.org/10.1016/j.jbusres.2020.01.040>
- Anthony, J. (2023). Housing affordability and economic growth. *Housing Policy Debate*, 33(5), 1187–1205. <https://doi.org/10.1080/10511482.2022.2065328>
- Bashir, S., Khwaja, M. G., Rashid, Y., Turi, J. A., & Waheed, T. (2020). *Green brand benefits and brand outcomes: The mediating role of green brand image*. SAGE Open. <https://doi.org/10.1177/2158244020953156>
- Bashir, S., Sarker, T., Talib, M. N. A. & Akram, U. (2023). Financing options for Green and Affordable Housing (GAH): An exploratory study of south Asian economies. *Sustainability (Basel)*, 15(15), 11645. <https://doi.org/10.3390/su151511645>
- Boluda-Verdú, I., Senent-Valero, M., Casas-Escolano, M., Matijasevich, A., & Pastor-Valero, M. (2022). Fear for the future: Eco-anxiety and health implications, a systematic review. *Journal of Environmental Psychology*, 84(October), 101904. <https://doi.org/10.1016/j.jenvp.2022.101904>
- Chaturvedi, P., Kulshreshtha, K., & Tripathi, V. (2020). Investigating the determinants of behavioral intentions of generation Z for recycled clothing: An evidence from a developing economy. *Young Consumers*, 21(4), 403–417. <https://doi.org/10.1108/YC-03-2020-1110>
- Chen, L., Gao, X., Hua, C., Gong, S., & Yue, A. (2021). Evolutionary process of promoting green building technologies adoption in China: A perspective of government. *Journal of Cleaner Production*, 279, 123607. <https://doi.org/10.1016/j.jclepro.2020.123607>
- Czajkowski, M., Hanley, N., & Nyborg, K. (2017). Social norms, morals and self-interest as determinants of pro environment behavior: The case of household recycling. *Environmental and Resource*

- Economics*, 66(4), 647–670. <https://doi.org/10.1007/s10640-015-9964-3>
- Darko, A. (2019). Adoption of green building technologies in Ghana: Development of a model of green building technologies and issues influencing their adoption. 319. <https://theses.lib.polyu.edu.hk/bitstream/200/9924/1/991022197537003411.pdf>
- Degnet, M. B., Hansson, H., Hoogstra-Klein, M. A., & Roos, A. (2022). The role of personal values and personality traits in environmental concerns of non-industrial private forest owners in Sweden. *Forest Policy and Economics*, 141(May), 102767. <https://doi.org/10.1016/j.forpol.2022.102767>
- Galster, G. & Lee, K. O. (2021). Housing affordability: A framing, synthesis of research and policy, and future directions. *International Journal of Urban Sciences*, 25(S1), 7–58. <https://doi.org/10.1080/12265934.2020.1713864>
- Ganguli, R., Padhy, S.C. & Saxena, T. (2022). The characteristics and preferences of Gen Z: A review of multi-geography findings. *IUP Journal of Organizational Behavior*, 21(2), 79–98.
- Ge, J., Zhao, Y., Luo, X., & Lin, M. (2020). Study on the suitability of green building technology for affordable housing: A case study on Zhejiang Province, China. *Journal of Cleaner Production*, 275, 122685. <https://doi.org/10.1016/j.jclepro.2020.122685>
- Gomes, S., Lopes, J. M., & Nogueira, S. (2023a). Willingness to pay more for green products: A critical challenge for Gen Z. *Journal of Cleaner Production*, 390, 136092. <https://doi.org/10.1016/j.jclepro.2023.136092>
- Ha, J. W., Jeon, E. C., & Park, S. K. (2023). Status of environmental awareness and participation in Seoul, Korea and factors that motivate a green lifestyle to mitigate climate change. *Current Research in Environmental Sustainability*, 5(February), 100211. <https://doi.org/10.1016/j.crsust.2023.100211>
- Habitat, U. N. *Population Living in Slums (% of Urban Population)*. World Bank Data. 2022. Available online: <https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS>
- Hamzah, M. I., & Tanwir, N. S. (2021). Do pro-environmental factors lead to purchase intention of hybrid vehicles? The moderating effects of environmental knowledge. *Journal of Cleaner Production*, 279, 123643. Advance online publication. <https://doi.org/10.1016/j.jclepro.2020.123643>
- He, C., Yu, S., Han, Q., & de Vries, B. (2019). How to attract customers to buy green housing? Their heterogeneous willingness to pay for different attributes. *Journal of Cleaner Production*, 230, 709–719. <https://doi.org/10.1016/j.jclepro.2019.05.160>
- He, L. & Chen, L. (2021). The incentive effects of different government subsidy policies on green buildings. *Renewable and Sustainable Energy Reviews*, 135, 110123. <https://doi.org/10.1016/j.rser.2020.110123>
- Hossain, I., Nekmahmud, M., & Fekete-Farkas, M. (2022). How do environmental knowledge, eco-label knowledge, and green trust impact consumers' pro-environmental behavior for energy-efficient household appliances? *Sustainability (Basel)*, 14(11), 6513. <https://doi.org/10.3390/su14116513>
- Islam, M. A., Saidin, Z. H., Ayub, M. A., & Islam, M. S. (2022). Modelling behavioural intention to buy apartments in Bangladesh: An extended theory of planned behaviour (TPB). *Heliyon*, 8(9), e10519. <https://doi.org/10.1016/j.heliyon.2022.e10519> PMID:36119894
- Jeddi Yeganeh, A., McCoy, A. P., & Hankey, S. (2019). Green affordable housing: Cost-benefit analysis for zoning incentives. *Sustainability (Basel)*, 11(22), 6269. Advance online publication. <https://doi.org/10.3390/su11226269> <https://doi.org/10.20944/preprints201910.0160.v1>
- Kuchler, T., Piazzesi, M., & Stroebel, J. (2023). Housing market expectations. In *Handbook of economic expectations* (pp. 163–191). Elsevier. <https://doi.org/10.1016/B978-0-12-822927-9.00013-6>
- Kumar, A., Prakash, G. & Kumar, G. (2021). Does environmentally responsible purchase intention matter for consumers? A predictive sustainable model developed through an empirical study. *Journal of Retailing and Consumer Services*, 58, 102270. <https://doi.org/10.1016/j.jretconser.2020.102270>
- Kumar, J., Rani, V., Rani, G., Rani, M. (2025). Understanding purchase behavior towards green housing among millennials: the mediating role of purchase intention. *International Journal of Housing Markets and Analysis*, (ahead-of-print). <https://doi.org/10.1108/IJHMA-01-2024-0009>
- Liao, Y. K., Wu, W. Y., & Pham, T. T. (2020). Examining the moderating effects of green marketing and green psychological benefits on customers' green attitude, value and purchase intention. *Sustainability (Basel)*, 12(18), 7461. Advance online publication. <https://doi.org/10.3390/su12187461>
- Ma, W., Ren, Z., & Ke, H. (2022). Green housing subsidy strategies considering consumers' green preferences. *Sustainability (Basel)*, 14(5), 2748. Advance online publication. <https://doi.org/10.3390/su14052748>
- Majeed, S., Kim, W. G. & Kim, T. (2023). Perceived green psychological benefits and customer pro-environment behavior in the value-belief-norm theory: The moderating role of perceived green CSR. *International Journal of Hospitality Management*, 113, 103502. <https://doi.org/10.1016/j.ijhm.2023.103502>
- Mushanga, S., Oloke, O. C., & Olukanni, D. O. (2024). A review of sustainable housing preferences and affordability. *IOP Conference Series. Earth and Environmental Science*, 1342(1), 012030. Advance online publication. <https://doi.org/10.1088/1755-1315/1342/1/012030>
- Nekmahmud, M., & Fekete-Farkas, M. (2020). Why not green marketing? Determinates of consumers' intention to green purchase decisions in a new developing nation. *Sustainability (Basel)*, 12(19), 7880. <https://doi.org/10.3390/su12197880>
- Nyborg, K. (2018). Social norms and the environment. *Annual Review of Resource Economics*, 10, 405–423. <https://doi.org/10.1146/annurev-resource-100517-023232>
- Ogiemwonyi, O., Alam, M. N., Alshareef, R., Alsolamy, M., Azizan, N. A., & Mat, N. (2023). Environmental factors affecting green purchase behaviors of consumers: Mediating role of environmental attitude. *Cleaner Environmental Systems*, 10(June), 100130. <https://doi.org/10.1016/j.cesys.2023.100130>
- Portnov, B. A., Trop, T., Svehkina, A., Ofek, S., Akron, S., & Ghermandi, A. (2018). Factors affecting homebuyers' willingness to pay green building price premium: Evidence from a nationwide survey in Israel. *Building and Environment*, 137(April), 280–291. <https://doi.org/10.1016/j.buildenv.2018.04.014>
- Pothitou, M., Hanna, R. F., & Chalvatzis, K. J. (2016). Environmental knowledge, pro-environmental behavior and energy savings in households: An empirical study. *Applied Energy*, 184, 1217–1229. <https://doi.org/10.1016/j.apenergy.2016.06.017>
- Roh, T., Lee, K. & Yang, J. Y. (2021). How do intellectual property rights and government support drive a firm's green innovation? The mediating role of open innovation. *Journal of Cleaner Production*, 317, 128422. <https://doi.org/10.1016/j.jclepro.2021.128422>
- Rusyani, E., Lavuri, R., & Gunardi, A. (2021). Purchasing eco-sustainable products: Interrelationship between environmental knowledge, environmental concern, green attitude, and perceived behavior. *Sustainability (Basel)*, 13(9), 4601. Advance online publication. <https://doi.org/10.3390/su13094601>

- Saari, U. A., Damberg, S., Frömbing, L., & Ringle, C. M. (2021). Sustainable consumption behavior of Europeans: The influence of environmental knowledge and risk perception on environmental concern and behavioral intention. *Ecological Economics*, 189(August), 107155. Advance online publication. <https://doi.org/10.1016/j.ecolecon.2021.107155>
- Salam, K. N., Singkeruang, A. W. T. F., Husni, M. F., & Baharuddin, B. AR, DP. (2024). Gen-Z marketing strategies: Understanding consumer preferences and building sustainable relationships. *Golden Ratio of Mapping Idea and Literature Format*, 4(1), 53–77. <https://doi.org/>
- Scheller, E., Scheller, F., Sloot, D. & Bruckner, T. (2022). A meta-analysis of residential PV adoption: The important role of perceived benefits, intentions and antecedents in solar energy acceptance. *Energy Research and Social Science*, 84, 102339. <https://doi.org/10.1016/j.erss.2021.102339>
- Schultz, P. W., Gouveia, V. V., Cameron, L. D., Tankha, G., Schmuck, P., & Franěk, M. (2005). Values and their relationship to environmental concerns and conservation behavior. *Journal of Cross-Cultural Psychology*, 36(4), 457–475. <https://doi.org/10.1177/0022022105275962>
- Selasi, D., Kusumadewi, AN & Yunita, M. (2025). Determinants of green product purchase intentions: A systematic review and synthesis of literature from 2013-2022. 15(4), 86–110. <https://doi.org/>
- Selasih, D., Yunita, M., Hendayani, N., Kusumadewi, A.N., & Setiyadi, D. (2025). Determinants of green product purchase intentions: A systematic review and synthesis of literature from 2013-2022. <https://www.aasmr.org/jsms/onlinefirst/Vol15/No.4/Vol.15.No.4.07.pdf>
- Setyowati, A. B. (2023). Governing sustainable finance: insights from Indonesia. *Climate Policy*, 23(1), 108–121. <https://doi.org/10.1080/14693062.2020.1858741>
- Sivadasan, R., Quoquab, F., Mohammad, J., & Basiruddin, R. (2020). Residential properties with green living concept: What drives consumers to buy? *International Journal of Ethics and Systems*, 36(3), 427–447. <https://doi.org/10.1108/IJOES-04-2020-0042>
- Sparkman, G., Howe, L., & Walton, G. (2021). How social norms are often a barrier to addressing climate change but can be part of the solution. *Behavioural Public Policy*, 5(4), 528–555. <https://doi.org/10.1017/bpp.2020.42>
- Stern, P.C. & Dietz, T. (1994), The value basis of environmental concern. *Journal of Social Issues*, 50, 65–84. <https://doi.org/10.1111/j.1540-4560.1994.tb02420.x>
- Sun, Y., Li, T., Wang, S. (2022). "I buy green products for my benefits or yours": Understanding consumers' intention to purchase green products. *Asia Pacific Journal of Marketing and Logistics*, 34(8), 1721–1739. <https://doi.org/10.1108/APJML-04-2021-0244>
- Ullah, F., Sepasgozar, S. M. E., Thaheem, M. J., & Al-Turjman, F. (2021). Barriers to the digitalisation and innovation of Australian smart real estate: A managerial perspective on the technology non-adoption. *Environmental Technology & Innovation*, 22, 101527. Advance online publication. <https://doi.org/10.1016/j.eti.2021.101527>
- Wang, W., Tian, Z., Xi, W., Tan, Y. R., & Deng, Y. (2021). The influencing factors of China's green building development: An analysis using RBF-WINGS method. *Building and Environment*, 188(October), 107425. <https://doi.org/10.1016/j.buildenv.2020.107425>
- Zakiah, A. (2023). Green building implementation challenge for housing from developer perspective in Indonesia. *Architecture (Washington, D.C.)*, 27(1), 39. <https://doi.org/10.20961/arst.v27i1.60298>
- Zameer, H., & Yasmeen, H. (2022). Green innovation and environmental awareness driven green purchase intentions. *Marketing Intelligence & Planning*, 40(5), 624–638. <https://doi.org/10.1108/MIP-12-2021-0457>
- Zeng, Z., Zhong, W. & Naz, S. (2023). Can environmental knowledge and risk perception make a difference? The role of environmental concern and pro-environmental behavior in fostering sustainable consumption behavior.
- Zhao, S., & Chen, L. (2021). Exploring residents' purchase intention of green housings in china: An extended perspective of perceived value. *International Journal of Environmental Research and Public Health*, 18(8), 4074. Advance online publication. <https://doi.org/10.3390/ijerph18084074> PMID:33924311
- Zhuang, W., Luo, X., & Riaz, M. U. (2021). On the factors influencing green purchase intention: A meta-analysis approach. *Frontiers in Psychology*, 12, 644020. <https://doi.org/10.3389/fpsyg.2021.644020> PMID:33897545