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Research Article

Buyers' Attitude Towards Green Structural, Locational, Facilities and Intention to Purchase Green Housing

Ahmad Shah Bin Razali[1]*, Wan Nadzri bin Osman[2]

[1] University Utara Malaysia
* **Corresponding Author Email:** ahmadshah52@gmail.com - **ORCID:** 0009-0002-3653-1738

[2] University Utara Malaysia
Email: wannadzri@uum.edu.my - **ORCID:** 0000-0002-0032-4967

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Abstract:

The concept of green residential housing is new, whereby it incorporates special attributes that was expanded from the green product concept. Based on previous scholars' explanations, three important attributes for green residential housing includes green structural, locational, and facilities. It must be understood that any new concept such as "green residential" introduces to the market will not immediately be accepted by the buyers. The buyers must show their attitude either positive or negative that reflects their tendency to like or dislike the new concept. This research is very significant to understand the attitude-behaviour gap of the house buyers with the expansion of the new green concept into the real estate and property industry. The main objective of this research is to determine the significance relationship between buyers' attitude with their intention to purchase green residential housing. The research methodology is quantitative survey method, whereby 388 house buyers fill in the questionnaire via face-to-face self-administered fill in or online platform via Internet or WhatsApp. The analysis of findings using Spearman Coefficient Correlation rho (α) shows that as overall, the buyers' attitude towards locational has strong relationship with their intention to purchase green housing. Nevertheless, this study found that another two i.e. structural and facilities have weak relationships with intention purchase and are not significance. This research is very beneficial from green housing developers or policy makers in understanding their market purchase behaviour.

1. Introduction

Owning a home is widely recognized as crucial, whether for personal residence or rental income, making it a significant life decision. Homeownership provides residential stability for individuals and families [1,2]. Housing is not the same as other products since it is a distinctive, long durability and high in product differentiation due to each of the housing is specifically at unique site and fixed in location. The house buyers must be given abundance of information about housing products and its attributes in making any decisions to buy residential houses [3,4]. Quite a number of researches about buyers' housing purchases was published in various develop and developing countries, but "the national and cultural characteristics play a very significant role in house purchase decision, which means that finding that can be applied in specific context may not be extend to another context" [5,6]. Researchers commented that consumers do not make straight choice in buying any products but also influence by the psychology aspects [7,8]. Therefore, in housing properties industry, the approach must be customer focused with new value creation to attract their attention to purchase a new concept such as green housing.

The concept of green residential housing is relatively new and expands upon the green product concept. Researchers describe green products as non-hazardous, utilizing recycled resources, minimally packaged, and safe for the environment. Characteristics of green products include being naturally grown, using natural ingredients, being non-polluting, chemical-free, not tested on animals, and recyclable or reusable [9-11]. Green value has emerged as a new attribute in the residential housing market. Today, a house is not just considered basic

shelter but also an asset and a symbol of status and lifestyle. This shift reflects increased environmental awareness and the desire for sustainable living solutions. As green residential housing continues to evolve, it combines eco-friendly features with modern design, offering a sustainable and appealing option for homeowners who prioritize environmental responsibility and seek to align their living spaces with their values.

More recent scholars provide new perspective of residential housing that incorporates the "green attributes" due to the public are more aware with the importance of preserving the nature and thus, the house buyers become more interested to live in houses with greener landscaping [12-14]. House buyers prioritize few characteristics in making decisions to buy a house, that includes location of the house, quality of the feature and design, accessible facilities, more supportive services, sensible community, safety and security, healthy environment, and close to nature. suggested groups of attributes for development of green residential housing, that included the environmental sustainability, social amenities, safety of houses and surrounds, quality of the environment, sound infrastructure, and quality of the product [15-16]. This research will focus only on three attributes i.e. green structural, locational, facilities; that are predicted to effect buyers, intention to purchase green housing.

The current state of the housing industry is characterized by a mix of challenges and opportunities. Economic recovery post-pandemic has led to a resurgence in housing demand, but supply chain disruptions and labour shortages continue to impact construction timelines and costs. All of a sudden, for many years the world becomes gloomy and people are scared to wander outside of their houses compound [17], Psychologically, people change and tend to stay home longer either voluntarily or by forces to avoid transmission of deadly virus. This new behaviour contradicts with the nature of housing market that requires customers to spend huge amount of money, previewing the houses design prototype and the completed house model has become the major requirements for house buyers or investors [18,19].

Government policies and incentives are pivotal in supporting the housing market, particularly through initiatives focused on affordable housing and sustainable development. Demographic shifts, such as an aging population and the influx of younger buyers, are reshaping property demand. Additionally, the emphasis on green building practices and sustainable living is growing, driven by heightened environmental awareness. Despite facing challenges like supply chain disruptions and labour shortages, the housing industry remains resilient. With supportive policies and a focus on sustainability, the industry navigates a complex landscape with a cautiously optimistic outlook for the future [20].

House buyers also look forward for new values such as environmentally friendly or green products, inclusive for the housings [21,22]. In Malaysia, house buyers also recognize the green homes concept but have limited knowledge and understanding on the real aspects of this new concept. The buyers also do not have much information on the availability of green residential housing projects. Their perception of green residential housings at the early stage is that the green house has efficiency of resources usage such as water supply and other utilities, use of alternative resources such as solar energy, near to nature and natural environment, or use of recycles or natural construction materials. This information is very valuable as guidance for housing developers in designing green residential housings projects [23,24].

House buying decisions in adopting green values is a long term progressive behavioural changes and spill over that occurs in linkage to buying of other environmentally friendly or green products. It takes long time for house buyers to be alert, understand and adopt the new green values till they have certain ideas and clarity of those concept [25,26]. Currently not many researches focus on the attitude-behaviour gap of the housing buyers, and will be the research gap that becomes the topic for this research. The existence of imperfection in the relationship between the green attitude and behaviour was found; and this gap has continuously been discussed among the social psychology and consumer behaviour researchers [27,28]. Currently there are no evidence found on the consensus agreement by scholars to decide on the relationship between green attitudes and behaviour and leave it open for future research.

1.1 Literature Review

Green Residentials

A green residential house is meticulously designed and built to prioritize sustainability and environmental preservation. These homes integrate eco-friendly materials, such as sustainably sourced wood and recycled products, to minimize environmental impact. Energy-efficient systems, including solar panels, high-quality insulation, and advanced heating and cooling solutions, are fundamental to reducing energy consumption. Water-saving fixtures, like low-flow toilets and faucets, are employed to conserve water resources.

Technologies aimed at decreasing energy and water use are standard, further enhancing the home's efficiency [29,30]. Green residential houses strive to reduce carbon footprints and waste while promoting a healthier living environment. By using non-toxic, natural materials, these homes ensure superior indoor air quality, safeguarding residents' health.

Moreover, features such as rainwater harvesting systems and green roofs are commonly included. These systems collect and reuse rainwater, reducing reliance on municipal water supplies and supporting irrigation needs. Green roofs, covered with vegetation, not only provide insulation but also contribute to biodiversity, creating habitats for local wildlife [12,31]. The incorporation of these features helps green residential houses achieve greater sustainability and environmental stewardship [15,29,30]. They represent a commitment to ecological balance, reducing the strain on natural resources and fostering a more sustainable built environment. By embracing these principles, green residential housing offers a compelling solution for homeowners who value environmental responsibility and seek to live in harmony with nature. These houses stand as a testament to innovative design and thoughtful construction practices that meet the needs of both current and future generations.

A.Green Structural

A green structural house refers to a home designed and built with sustainable practices and materials that minimize its environmental impact [32]. These houses incorporate various eco-friendly features, such as energy-efficient appliances, renewable energy sources (like solar panels), water-saving fixtures, and the use of recycled or sustainably sourced building materials. The design often emphasizes natural light and ventilation, reducing the need for artificial lighting and air conditioning. Additionally, green homes aim to create a healthy living environment by using non-toxic, low-emission materials and improving indoor air quality. Overall, green structural houses contribute to environmental conservation and offer long-term cost savings for homeowners [33]. To protect the green environment, housing and building developers must adopt sustainable construction practices. This involves collaboration among designers, architects, builders, town planners, and developers to identify and utilize building methods and materials that minimize environmental impact. By prioritizing eco-friendly solutions, they can ensure the preservation of natural resources and promote a more sustainable future [34,35]. Housing contractors should note that buyers are increasingly prioritizing improved living environment quality. This shift may influence their attitudes and intentions, leading to a preference for sustainable and health-promoting residential housing [36].

H_0: There is no significance relationship between attitude towards structural with buyers' intention to purchase green residential housing.

H_1: There is a significance relationship between attitude towards structural with buyers' intention to purchase green residential housing.

B.Green Locational

A green locational for a house involves selecting a site that promotes sustainable living and minimizes environmental impact. This means choosing areas that preserve natural surroundings, protect local ecosystems, and foster biodiversity. Ideal green locations are typically away from heavily industrialized or polluted zones and include features such as green spaces, parks, and access to public transportation to reduce car dependency [15]. Additionally, these areas often have infrastructure that supports renewable energy sources, water conservation, and waste reduction initiatives.

Opting for a green location allows homeowners to significantly aid environmental conservation and enjoy a healthier living environment. These areas provide the dual benefits of nature preservation and sustainable living, resonating with eco-conscious individuals [21,29]. Thus, selecting a green location is essential for developing environmentally friendly residential areas that cater to current and future generations. By aligning their choices with these values, homeowners play a crucial role in promoting sustainable urban development and enhancing overall quality of life. These green initiatives help create vibrant communities that prioritize health, sustainability, and environmental stewardship.

Housing developers must also ensure that choice of locational fulfil house buyers' expectation for green residential. The location of green residential housing should prioritize preserving the natural surroundings and protecting the habitats of local flora and fauna [31,37-39]. This is increasingly important as both current and future generations become more aware of the environmental issues caused by construction projects, such as deforestation, flash floods, and landslides. Additionally, construction waste often contains harmful materials and oily or chemical substances that pose dangers to humans and wildlife. Ensuring that housing projects are environmentally responsible is crucial for maintaining ecological balance and safeguarding public health.

H_0 There is no significance relationship between attitude towards locational with buyers' intention to purchase green residential housing.

H_1: There is a significance relationship between attitude towards locational with buyers' intention to purchase green residential housing.

C.Green Facilities

Green facilities for green residential housing encompass a range of eco-friendly features and systems designed to promote sustainability and reduce environmental impact [39]. These facilities typically include energy-efficient appliances, solar panels, and high-quality insulation to minimize energy consumption. Water-saving fixtures, such as low-flow toilets and faucets, are installed to conserve water resources. In addition, smart home technologies are often integrated to optimize energy use and improve overall efficiency. Green roofs and walls, which are covered with vegetation, provide natural insulation, reduce urban heat island effects, and support biodiversity by creating habitats for local wildlife [40].

Furthermore, green residential housing incorporates rainwater harvesting systems that collect and reuse rainwater, reducing reliance on municipal water supplies and supporting irrigation needs. The use of non-toxic, natural materials ensures superior indoor air quality, promoting a healthier living environment for occupants [41]. These homes are designed to minimize carbon footprints and waste, reflecting a commitment to environmental stewardship and sustainability. By integrating these green facilities, green residential housing not only contributes to environmental conservation but also offers long-term cost savings and a higher quality of life for residents [39,40]. Overall, green facilities play a crucial role in creating sustainable, eco-friendly living spaces that align with the values of environmentally conscious homeowners.

H_0: There is no significance relationship between attitude towards facilities with buyers' intention to purchase green residential housing.

H_3: There is a significance relationship between attitude towards facilities with buyers' intention to purchase green residential housing.

Cognitive, Affective, and Behavioural (CAB) theory

Acknowledging the impact of green attitudes for homes that embrace eco-friendly values is especially pertinent in the context of green housing. Here, the focus shifts to the perspectives of green residential buyers, a unique market segment with distinct views on sustainable living. These buyers prioritize environmentally conscious living, making it crucial for sellers to align with their preferences and values. Research in this area intersects behavioural and management fields, utilizing the Cognitive, Affective, and Behavioural (CAB) theory to dissect the elements of buyers' attitudes that impact their purchasing decisions. By comprehensively examining these components, this research aims to uncover the driving factors behind green residential housing purchases. Insights from such studies can guide developers, marketers, and policymakers in better addressing the needs and preferences of eco-conscious buyers, ultimately fostering more sustainable housing markets. [42-44]

Cognitive theory examines how individuals engage in thinking processes, including reasoning, decision-making, and problem-solving. It explores how information is encoded, stored, and retrieved in the human memory system [45]. Cognitive theorists study how individuals interpret and make sense of sensory information from the environment. Cognitive theorists often use the metaphor of information processing to describe how individuals take in, store, and retrieve information. This involves stages such as attention, encoding, storage, and retrieval [46]. The cognitive development in this theory includes a focus on cognitive development across the lifespan. This concept is often linked to Jean Piaget, who proposed a theory of cognitive development detailing how children's thinking evolves over time. Schema theory, on the other hand, refers to cognitive frameworks that help individuals organize and interpret information.

Affective theory distinguishes between discrete emotions (such as joy, anger, fear) and more general mood states (e.g., happiness, sadness, anxiety). It explores how both discrete emotions and mood can impact decision-making and behaviour. Emotions are seen as integral to motivation [47]. Affective theory examines how emotions impact goal-directed behaviour and decision-making, highlighting both positive and negative emotions in shaping motivation. Affective theorists also study subjective well-being, which includes individuals' overall assessment of their lives, such as life satisfaction and happiness. The theory explores the factors that contribute to and influence subjective well-being [48]. Emotions play a crucial role in interpersonal interactions.

Behavioural theory concentrates on observable behaviours and the environmental factors that influence them. Behavioural theories propose that behaviours are learned through conditioning processes, including classical conditioning, operant conditioning, and observational learning [49]. This perspective is crucial for understanding how behaviours are acquired, modified, and maintained, and it has practical applications in areas such as behaviour therapy and behaviour management. Behavioural theory is a psychological perspective that focuses on observable behaviours and the environmental factors that influence them. It

emphasizes the idea that behaviour is learned and can be modified through conditioning processes [50].

In summary, multiple researchers agree that green attitude encompasses distinct cognitive, affective, and behavioural components. The cognitive component relate to how a person perceives and evaluate their financial capability in adding the green values to purchase their residential housing. The affective component is the reflection of a person's emotional and feelings that relates to their preferences towards anything that showcase their attitude towards the green housing attributes. The behavioural component is the person reflective intention that will results in actions towards purchasing the green house [51,52].

Even if someone has a positive attitude towards green products like green residential housing, it is important to acknowledge that the sequence from affective to intention behaviour may not always achieve the desired outcomes [53]. This study focusses on the influence of attitude on behaviour among house buyers, since understanding how buyers' attitudes influence their decisions is crucial [54]. Specifically, this research narrows down to examining the impact of green housing attributes such as factors on buyers' choices [55-59].

2. Material and Methods

The research theoretical framework in Figure 1 shows that there are two main variables that becomes the focus investigation of this research. The independent variables are the attitude towards green housing structural, locational, and facilities; that are hypothesised to have significance relationships with the dependent variable i.e. the intention to purchase (as in Figure 1).

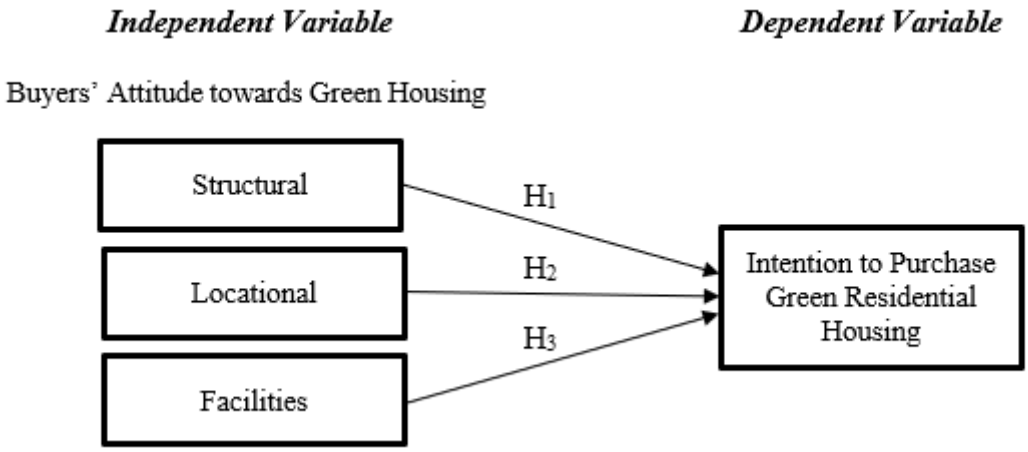

Figure 1. *Research Theoretical Framework: Relationships between Attitude towards Structural, Locational and Facilities with Buyers' Intention to Purchase Green Residential Housing.*

Based on the research theoretical framework, there are three hypotheses to be tested in this research, as follows:

H_1: There is a significance relationship between attitude towards structural with buyers' intention to purchase green residential housing.

H_2: There is a significance relationship between attitude towards locational with buyers' intention to purchase green residential housing.

H_3: There is a significance relationship between attitude towards facilities with buyers' intention to purchase green residential housing.

The research applies the quantitative method, whereby survey using face-to-face and online has been conducted to get responses from house buyers. The snowball sampling was used that manage to get 388 samples to represent the population of house buyers. Face-to-face self- assisted survey was conducted, but due to post-pandemic years, it is very difficult to meet the respondents and therefore, online platform is the best solution.

For the online survey, the sampling starts with a group of respondents who uses WhatsApp applications. The hyperlink of online survey form was sent to each of the phone number with a short message in English or Malay language asking them for assistance to fill in the questionnaire, and later share the hyperlink with their friends, family, or anyone either personally or to their WhatsApp groups contacts.

This has proven to be the best platform to start the ball rolling and expanded the chances of getting more respondents to share the survey form hyperlink. The SPSS version 26.0 data analysis software was used to analyse the data collected, after the checking and cleaning process has completed to ensure that there are no mistakes or missing answers.

The Spearman's Correlation Coefficient analysis was used to investigate the relationships of the variables as previously indicated in the research theoretical framework and hypotheses.

3. Results and Discussions

The Spearman's Correlation Coefficient rho (α) on relationships between variables shows that only the relationship of attitude towards locational (+0.753), with the intention to purchase green residential housing, is strong and significant at p-value of 0.001. The buyers' attitude towards housing structural (+0.003) and facilities (+0.004) are weak and not significant at p-value of 0.001. Those results are summarized in Table 1 and Figure 2.

Table 1. *Spearman's Correlation Coefficient Results on the Relationship between Buyers' Attitude towards Structural, Locational, and Facilities with Intention to Purchase Green Residential Housing*

Relationship of Variables	Hypotheses	Spearman's Rho (α)	Direction	Strength	Significance of Relationship
Attitude towards Structural and Intention to Purchase	H_1 rejected H_0 accepted	+0.003	Positive	Weak	No
Attitude towards Locational and Intention to Purchase	**H_2 accepted**	**+0.753**	**Positive**	**Strong**	**Yes**
Attitude towards Facilities and Intention to Purchase	H_3 rejected H_0 accepted	+0.004	Positive	Weak	No

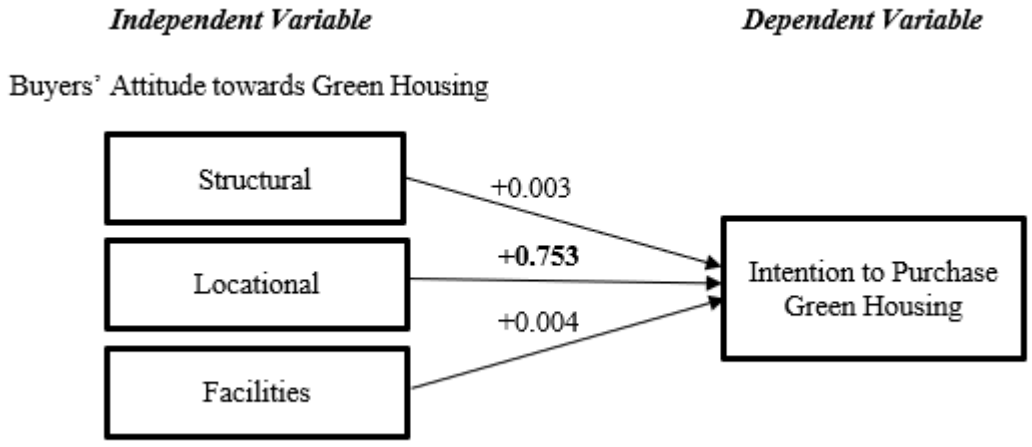

Figure 2. *Spearman's Correlation Coefficient Results on the Relationship between Buyers' Attitude towards Structural, Locational, and Facilities with Intention to Purchase Green Residential Housing*

The findings based on the Spearman Coefficient Correlation shows that as overall there is a strong positive relationship between attitude towards green residential housing attributes and intention to purchase green housing residential. This is similar with previous research that has found that attitude is one of the antecedents of intention among Malaysian consumers. Attitude can influence residential housing buyers in deciding on buying green house [29,60,61]. Other researchers also found that attitude can predicts intention to buy green residential housing using the structural equation modelling technique. [62, 63].

In green consumerism, product attributes and values significantly influence purchasing intentions for green residential housing [62,65] Research by Maranatha & Togi [66], indicates that millennials' environmental knowledge fosters a positive attitude and affects their intention to buy green homes. Millennials are concerned about many internal and external factors impacting their green residential purchase decisions. They consider aspects such as environmental benefits, energy efficiency, and the overall sustainability of the property. Additionally, external factors like government incentives, market trends, and societal pressure play a role in shaping their choices. This demographic's awareness and preference for eco-friendly living drive demand for green residential housing, making it crucial for developers and marketers to align their offerings with these values to attract and satisfy millennial buyers. Understanding these factors can help tailor

strategies to meet the needs of this environmentally conscious group [67].

Nevertheless, only attitude towards green locational attribute shows significant strong positive relationships with attitude to purchase green residential housing. Other green residential housing attributes of structural and facilities shows no significant relationship with the buyers' intention to purchase. These results indicate customers are mainly concern on the green locational when purchasing green residential housing. Buyers prefer to choose location of residential housing with public green space even though the housing projects are developed in metropolitan areas[68,69]. The urban green space has a significant positive impact on proximate residential properties that shape up positive attitude for buyers to favour the green house. Previous research found that the environmental attributes also emerge as predictors of consumer green purchase behaviour, that can be investigate in future [70,72].

In contrast with this finding, previous research found that the health and safety values of green products positively influence consumers' purchasing attitudes. This also suggests that consumers prioritize safety and health when assessing a product [73-75]. Their attitude towards environment aspects will shape up their intention to purchase due to their concern on quality of life, healthy environment that are not hazardous to human life. These correlations results are not as expected that all the green housing attributes will have positive influence to the buyer's intention to purchase green houses. It is not surprising to get into those findings since the previous researchers has mentioned about the difficulty in reaching consensus opinion about the issue of attitude–behaviour gap; but nevertheless, proves that buyers' attitude towards various attributes can influence green intention purchase behaviour [28,76-79].

4. Conclusions

This research is very significant to enable the housing developers certain understanding about the house buyers' attitude in buying a green residential housing, which is a new concept in Malaysia. The house market changes due to new society are more educated and they are expose to the green concept at earlier young ages. This research will also contribute and provide more insights to the scholars on the attitude-behaviour gap that is still explorable especially in relation to green housing residential projects. The findings will be very useful for other housing developers to understand the importance of green attributes when building green residential housings to attract the house buyers. Green housing is not the same with other green products, and therefore this study will be significant to better understand how buyers behave in relation to green residential housing market.

Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
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References

[1] Aaronson, D. (2023). A Note on the Benefits of Home Ownership, *Journal of Urban Economics*, 47(3): 356-369.

[2] Mateja, K. K., & Irena, V. (2009). A Strategic Household Purchase: *Consumer House Buying Behaviour*, *Managing Global Transitions*, 7 (1): 75–96.

[3] Yip, C. Y., Senadjki, A., Au Yong, H.N. & Abdul Adzis, A. (2020). Mitigating Housing Glut: An Application to the Malaysian Housing Market, *International Journal of Housing Markets and Analysis*, 1-24.

[4] Arslan, G. (2019). Factors affecting investors' buying decision in real estate market in Northern Cyprus, Master's Thesis, marketing management program, Near East University.

[5] Pratesi, F., Hu, L., Rialti, R., Zollo, L. & Faraoni, M. (2021). Cultural Dimensions in Online Purchase Behaviour: *Evidence from a Cross-Cultural Study. Italian Journal of Marketing*, 227–247.

[6] Opoku, R. A., & Abdul-Muhmin, A. (2010). Housing Preferences and Attribute Importance among Low-Income Consumers in Saudi Arabia. *Habitat International*, 34: 219-227.

[7] Hassan, M. M., Ahmad, N., & Hashim, A. H. (2021). The Conceptual Framework of Housing

Purchase Decision-Making Process. *International Journal of Academic Research in Business and Social Sciences*, 11(11): 1673–1690.

[8] Newell, B. R., Lagnado, D. A., & Shanks, D. R. (2015). Straight Choices: The Psychology of Decision Making, Edition 2, Psychology Press, 2015. ISBN 1317538862, 9781317538868

[9] Ghazali, I., Abdul-Rashid, S. H., Md Dawal, S. Z., Aoyama, H., Sakundarini, N., Ho, F. H., & Herawan, S. G. (2021). Green Product Preferences Considering Cultural Influences: A Comparison Study between Malaysia and Indonesia. *Management of Environmental Quality*, 32(5); 1040-1063. DOI:10.1108/MEQ-11-2020-0245

[10] Pavan, M.P.S. (2010) Green Marketing in India: Emerging Opportunities and Challenges. *Journal of Engineering, Science and Management Education*, 3: 9-14.

[11] Ottman, J. A. (1998). Green Marketing: Opportunity for Innovation. NTC-McGraw-Hill, New York.

[12] Chuweni, N. N., Mohamed Saraf, M. H., Fauzi, N. S. & Che Kasim, A. (2022). Factors Determining the Purchase Decision of Green Residential Properties in Malaysia, Planning Malaysia: *Journal of the Malaysian Institute of Planners*, 20 (2): 272-282.

[13] Young, C. L., & Keun, H. K. (2015). Attitudes of Citizens towards Urban Parks and Green Spaces for Urban Sustainability: *The Case of Gyeongsan City, Republic of Korea, Sustainability*, 7: 8240-8254

[14] Jim, C.Y. & Chen, Wendy. (2006). Perception and Attitude of Residents toward Urban Green Spaces in Guangzhou (China). *Environmental Management*, 38: 338-49.

[15] Olanrewaju, A. L., & Chong, Y. S. (2021). Post Occupancy Evaluation of Green Residential Buildings in the Greater Kuala Lumpur, *Malaysia. Journal of Housing and the Built Environment*, 36(3): 825-857. DOI:10.1007/s10901-021-09832-1

[16] Said, N. S., & Juanil, D. (2013). The housing environment preference among housing consumers in Johor Bahru, Proceeding: *2nd International Conference on Technology Management, Business and Entrepreneurship, pages* 55-70. ISSBN 978-967-0468-56-3

[17] Sumer, L. (2023). The Global Housing Crisis: Challenges and Solutions. In What the Future Holds: *The Roadmap for a Sustainable Housing Industry* (pp. 187-198). *Springer*. DOI:10.1007/978-3-031-72604-0_8

[18] Almusaed, A.; Yitmen, I.; Almssad, A. (2023). Enhancing Smart Home Design with AI Models: *A Case Study of Living Spaces Implementation Review. Energies*, 16, 2636: 1-23. DOI:10.3390/en16062636

[19] Saw, L. S., & Tan, T. H. (2014). Factors Affecting the Purchase Decision of Investors in the Residential Property Market in Malaysia. *Journal of Surveying, Construction and Property*, 5 (1): 23-37.

[20] Di Crosta A, Ceccato I, Marchetti D, La Malva P, Maiella R, Cannito L, Cipi, M., Mammarella, N., Palumbo, R., Verrocchio,M. C, Palumbo, R. and Di Domenico, A. (2021) *Psychological Factors and Consumer Behaviour during the COVID-19 Pandemic. PLoS ONE*, 16(8): 1-123. e0256095. DOI: 10.1371/journal.pone.0256095

[21] Chuweni, N. N., Fauzi, N. S., Che Kasim, A., Mayangsari, S., & Wardhani, N. K. (2024). Assessing the Effect of Housing Attributes and Green Certification on Malaysian House Price. *International Journal of Housing Markets and Analysis.* DOI:10.1108/IJHMA-10-2023-0145

[22] Zrobek, S., Trojanek, M., Sokolnik, A.Z. and Trojanek, R. (2015). The Influence of Environment Factors on Property Buyer's Choice of Residential Location in Poland. *Journal of International Studies*, 8 (3): 164-174.

[23] Amar, S. (2023). Eco-building For Eco-living, an Essential Step to Face Climate Change, *Climate Action*, 2 (34): 1-9.

[24] Ismail, R., Wira, M., Mohd, S., Mohd. W., Said, I. & Ibrahim, F. (2013). Green Homes Development Practices and House Buyers' Requirements: A Review. Australian Journal of Basic and Applied Sciences, 7: 7-15.

[25] Kour, M. (2024). Understanding the Drivers of Green Consumption: A Study on Consumer Behaviour, Environmental Ethics, and Sustainable Choices for Achieving SDG 12. SN Business & Economics, 4: 97. *Springer Nature.* DOI:10.1007/s43546-024-00691-w

[26] Lacasse, K. (2016). Don't be Satisfied, Identify! Strengthening Positive Spill Over by Connecting Pro-Environmental Behaviours to an Environmentalist Label. *Journal of Environmental Psychology*, 48: 149–158.

[27] Chanda, R.C., Vafaei-Zadeh, A., Hanifah, H. and Thurasamy, R. (2023). Modeling Eco-friendly House Purchasing Intention: A Combined Study of PLS-SEM and FSQCA Approaches, *International Journal of Housing Markets and Analysis*, 1-35. DOI:10.1108/IJHMA-04-2023-0059

[28] Juvan, E., & Dolnicar, S. (2014). Attitude–behaviour Relationship in Tourism. *Annals of Tourism Research*, 44: 83-105

[29] 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

[30] Wong, S. Y., Susilawati, C., Miller, W., & Mardiasmo, D. (2020). Perspectives of Australian Property Practitioners on Sustainability Features in Residential Property. *Journal of Housing and the Built Environment*, 35(3): 783-805. DOI:10.1007/s10901-020-09832-1

[31] Liu, T., Chen, L., Yang, M., Sandanayake, M., Miao, P., & Yap, P.-S. (2022). Sustainability Considerations of Green Buildings: *A Detailed Overview on Current Advancements and Future Considerations. Sustainability*, 14(21), 14393: 1-23. DOI:10.3390/su142114393

[32] Shahzaib Khan, J., Zakaria, R., Shamsudin, S. M., Abidin, N. I. A., Sahamir, S. R., & Aminudin, E. (2020). Evolution to Emergence of Green Buildings: *A Review. Administrative Sciences*, 9 (1): 6-20. DOI:10.3390/admsci9010006

[33] Ali, B. M., & Akkas, M. (2024). The Green Cooling Factor: Eco-Innovative Heating, Ventilation, and Air Conditioning Solutions in Building Design. *Applied Sciences*, 14(1), 195: 1-25. DOI:10.3390/app14010195

[34] Abu Bakar, A. H., Abd Razak, A., Abdullah, S. & Awang, A. (2012). Project Management Success Factors for Sustainable Housing: A Framework. *Universiti Sains Malaysia (USM): School of Housing, Building and Planning.*

[35] Abidin, N. Z., & Awang, N. Y. H. (2012). A Foresight into Green Housing Industry in Malaysia. *Universiti Sains Malaysia (USM): World Academy of Science, Engineering and Technology*

[36] Pakir, A. H. K., Tabassi, A. A., Ramli, M., Abu Bakar, A. H. & Roufechaei, K. M. (2012). Sustainable Housing Development and Leadership: A Review. *Australian Journal of Basic and Applied Sciences*, 6(12): 385-395.

[37] Vivek, K. T., Anjali, V., Akash, K., & Manjul, G. (2016). A Review on Environmental Impact Assessment of Construction. *Journal of Environmental Science, Toxicology and Food Technology*, 10 (1): 21-25.

[38] Ametepey, S., & Ansah, S. (2014). Impacts of Construction Activities on the Environment: The Case of Ghana. *Journal of Construction Project Management and Innovation*, 4 (1), 934-948.

[39] Nabila, S. A., Noh, F. M. D., Yusop, N., & Jenuwa, N. J. (2023). Green Building Materials: Readiness and Cost Impact for Residential Construction. *International Journal of Business and Technology Management*, 36(3): 427-447. DOI:10.1108/IJOES-04-2020-0042

[40] Singh, S., & Walia, S. (2024). Research Trends and Key Themes in the Intersection of Renewable Energy and Smart Homes. *Smart Systems: Innovations in Computing (SSIC 2023).* 49-65. DOI:10.1007/978-981-97-3690-4_5

[41] Xie, H., Randall, M., & Melo dos Santos, S. (2023). Optimization of Roof Coverage and Tank Size for Integrated Green Roof Rainwater Harvesting Systems: *A Case Study. Water Resources Management*, 37(4): 4663-4678. DOI:10.1007/s11269-023-03568-z

[42] Aggarwal, S., Dhanda, K., Kumar, R., & Arora, U. (2024). Unpacking Green Choices: Exploring Altruistic and Egoistic Values in Shaping Environmental Identities and Packaging Preferences. Asian Journal of Business Ethics. DOI:10.1007/s13520-024-00221-9

[43] Coskun, A. (2018). Chapter 4: Understanding green attitudes: In book: Quoquab, F., Thurasamy, R., & Mohammad, J. (2018). Driving green consumerism through strategic sustainability marketing. *Publisher: IGI Global, ISSN:* 2330-3271; eISSN: 2330-328X

[44] Mehta, P. & Chahal, H.S. (2021). Consumer Attitude towards Green Products: revisiting the Profile of Green Consumers Using Segmentation Approach, Management of Environmental Quality: *An International Journal*, 32: 902–928. DOI:10.1108/MEQ-07-2020-0133.

[45] Xu, H., & Burns, E. J. (2023). Perception, Cognition, and Working Memory: *Interactions, Technology, and Applied Research. Frontiers in Psychology*, 14(1): 1130-1142. DOI:10.3389/fpsyg.2023.1190194

[46] Gim, S., Hong, S. J., Reynolds Losin, E. A., & Woo, C. W. (2024). Spatiotemporal Integration of Contextual and Sensory Information within the Cortical Hierarchy in Human Pain Experience. *PLOS Biology*, 22(11), e3002910. DOI: 10.1371/journal.pbio.3002910

[47] Bartholomeyczik, K., Gusenbauer, M., & Treffers, T. (2022). The Influence of Incidental Emotions on Decision-Making Under Risk and Uncertainty: A Systematic Review and Meta-Analysis of Experimental Evidence. *Cognition and Emotion*, 36(8), 1-15.DOI:10.1080/02699931.2022.2099349

[48] Crivelli, D., Acconito, C., & Balconi, M. (2024). Emotional and Cognitive "Route" in Decision-Making Process: *The Relationship between Executive Functions, Psychophysiological Correlates, Decisional Styles, and Personality.*

Brain Sciences, 14(7), 734: 1-12. DOI:10.3390/brainsci14070734

[49] Kwon, H. R., & Silva, E. A. (2020). Mapping the Landscape of Behavioural Theories: Systematic Literature Review. *Journal of Planning Literature, 35(2): 161-179.* DOI:10.1177/0885412219881135

[50] Luo, M., & Allman-Farinelli, M. (2021). Trends in the Number of Behavioural Theory-Based Healthy Eating Interventions Inclusive of Dietitians/Nutritionists in 2000–2020. *Nutrients*, 13(11), 4161: 1-21. DOI:10.3390/nu13114161

[51] Masukujjaman, M., Wang, C. K., Alam, S. S., Lin, C. Y., Ho, Y. H., & Siddik, A. B. (2023). Green Home Buying Intention of Malaysian Millennials: *An Extension of Theory of Planned Behaviour*. *Buildings*, 13(1): 9, 1-22. DOI:10.3390/buildings13010009

[52] Lillemo, S. C. (2014). Measuring the Effect of Procrastination and Environmental Awareness on House-Holds Energy-Saving Behaviours: *An Empirical Approach. Energy Policy, 66: 249–256.*

[53] Chay, L., Mian, M. M, & Rathny, S. (2015). Consumer Responses to Green Marketing in Cambodia, *Open Journal of Social Sciences*, 3 (10): 86-94.

[54] Juvan, E., & Dolnicar, S. (2014). The Attitude–behaviour Gap in Sustainable Tourism. *Annals of Tourism Research*, 48: 76–95.

[55] Chung, R.Y. N., Chung, G. K. K., Gordon, D., Mak, J. K. L., Zhang, L. F., Chan, D., Lai, F. T. T, Wong, H. & Wong. S., Y. S. (2020). Housing Affordability Effects on Physical and Mental Health: Household Survey in a Population with the World's Greatest Housing Affordability Stress, *Journal of Epidemiology and Community Health*, 74: 164–172.

[56] Rolfe, S., Garnham, L., Godwin, J., Anderson, I, Seaman, P. & Donaldson, C. (2020). Housing as a Social Determinant of Health and Wellbeing: Developing an Empirically-informed *Realist Theoretical Framework, BMC Public Health*, 20, 1138: 1-19.

[57] Sujith, K. M, Biju1, C. A., Varma Subhash, C. R. & Dili, A. S. (2020). Need Based Approach: A Perspective for Sustainable Housing, *IOP Conference Series: Materials Science and Engineering*, 11 (14): 1-9.

[58] Ola, A. (2011). The Effects of Location and Neighbourhood Attributes on Housing Values in Metropolitan Lagos, *Ethiopian Journal of Environmental Studies and Management*, 4: 12- 23.

[59] Tan, B., & Lau, T. (2011). Green Purchase Behaviour: Examining the Influence of Green Environmental Attitude, Perceived Consumer Effectiveness and Specific Green Purchase Attitude. *Australian Journal of Basic and Applied Sciences*, 5(8): 559–567.

[60] Ooi, J. M., Kwek, C. L., & Keoy, K. H. (2012). The Antecedents of Green Purchase Intention among Malaysian Consumers. *Asian Social Science*, 8(13): 248-263

[61] Sinnappan, P., & Abdul Rahman, A. (2011). Antecedents of Green Purchasing Behaviour among Malaysian Consumers. *International Business Management*, 5(3): 129-139.

[62] Huang, M. Y. (2023). Effects of Consumer Perception, Attitude, and Purchase Intention on the Willingness to Pay for Green Building Housing Products. *Journal of Housing and the Built Environment*, 38: 1559–1583.

[63] Tan, T.H, (2013). Use of Structural Equation Modelling to Predict the Intention to Purchase Green and Sustainable Homes in Malaysia. *Asian Social Science*, 9(10): 181-191.

[64] Huang, M. Y., & Allman-Farinelli, M. (2022). Effects of Consumer Perception, Attitude, and Purchase Intention on the Willingness to Pay for Green Building Housing Products. *Journal of Housing and the Built Environment*, 38(8), 1559-1583. DOI:10.1007/s10901-022-10004-y

[65] Schuitema, G., de Groot, J. I. M. (2015). Green Consumerism: The Influence of Product Attributes and Values on Purchasing Intentions. *Journal of Consumer Behavior*, 14 (1): 57–69.

[66] Maranatha W, & Togi H. N. (2020). The Millennial Generation Purchase Intention toward Green Residential Building, *International Journal of Scientific & Technology Research*, 9 (2): 2054-2059.

[67] Yu, W., Liao, X., Ji, S., & Si, D. (2024). Influencing Factors and Mechanisms of the Green Transformation of Consumption: Based on Text Mining and Grounded Theory. *Environment, Development and Sustainability*, 26(1): 123-142. DOI:10.1007/s10668-024-05519-z

[68] Lee, J. W., Lee, S. W., Kim, H. G., Jo, H. K., & Park, S. R. (2023). Green Space and Apartment Prices: *Exploring the Effects of the Green Space Ratio and Visual Greenery*. *Land*, 12(11): 1-13. DOI:10.3390/land12112069

[69] McCord, M.J., Davis, P.T., Bidanset, P., McCluskey, W., McCord, J., Haran, M. and MacIntyre, S. (2018). House Prices and Neighborhood Amenities: Beyond the Norm? *International Journal of Housing Markets and Analysis*, 11(2): 263-289.

[70] Wang, L., Wong, P.P.W., & Narayanan Alagas, E. (2020). Antecedents of Green Purchase Behaviour:

An Examination of Altruism and Environmental Knowledge. *International Journal of Culture, Tourism and Hospitality Research,* 14(1): 63-82. DOI:10.1108/IJCTHR-02-2019-0034

[71] Yatish, J. & Zillur, R. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. *International Strategic Management Review,* 3 (1-2): 128-143.

[72] Nik Ramli, N. A. R. & Mohd Rizaimy, S. (2017). Customer's Purchase Intention for a Green Home. *International Journal of Procurement Management.* 10: 581-599.

[73] Zhang, X., & Dong, F. (2020). Why Do Consumers Make Green Purchase Decisions? Insights from a Systematic Review. *International Journal of Environmental Research and Public Health,* 17(18): 1-25, 6607. DOI:10.3390/ijerph17186607

[74] Ihsan, U. J., Seonggoo, J., & Chankoo, Y. (2019). Values and Green Product Purchase Behaviour*: The Moderating Effects of the Role of Government and Media Exposure. Sustainability,* 11: 1-16.

[75] Iman, K., Qader, A. & Zainuddin, Y. (2013). The Impact of Safety and Health Concerns on Environmental Attitudes towards Green Electronic Products among Lecturers. *International Journal of Management Sciences*, 1(6): 217-227.

[76] Anisimova, T., & Weiss, J. (2023). Toward a Better Understanding of the Attitude–Behaviour Gap in Organic Food Conative Loyalty: A Moderation and Moderated Mediation Analysis. *Asia Pacific Journal of Marketing and Logistics,* 35(6), 1474-1493. DOI:10.1108/APJML-06-2021-0420

[77] Rusitha, W., & Sabri, M. F. (2021). Determinants that Influence Green Product Purchase Intention and Behaviour*: A Literature Review and Guiding Framework. Sustainability,* 13(11), 6219:1-40.. DOI:10.3390/su13116219

[78] Terlau, W., & Hirsch, D. (2015). Sustainable Consumption and the Attitude-Behaviour-Gap Phenomenon: Causes and Measurements towards a Sustainable Development. *International Journal on Food System Dynamics,* 6(3): 159-174. DOI:10.22004/ag.econ.208880

[79] Tan, B., & Lau, T. (2011). Green Purchase Behaviour: Examining the Influence of Green Environmental Attitude, Perceived Consumer Effectiveness and Specific Green Purchase Attitude. *Australian Journal of Basic and Applied Sciences,* 5(8): 559–567.