Sustainable Living in Cambodia: What Influences the Purchase Intentions for Green Buildings in Khmer Green Village, Siem Reap in the Post-Covid 19?

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Abstract

Purpose: This study investigates the factors influencing purchase intention for green buildings among clients and visitors of Borei Angkor Landmark in the post-covid 19. Specifically, the study tests whether attitude, subjective norms, perceived behavior control, perceived value, environmental concerns, social sustainability, economic sustainability, locational attributes, developer brand, and structural attributes of housing significantly impact purchase intention. **Research design, data, and methodology:** The study applies a quantitative method to survey 515 participants. Confirmatory Factor Analysis (CFA) was conducted post-data collection to ensure the robustness and reliability of the measurement model. Using Structural Equation Modeling (SEM), the research examines twelve hypotheses related to various determinants of purchase intention. **Results:** The results reveal that attitudes toward green buildings, subjective norms, perceived behavior control, social sustainability, and economic sustainability significantly and positively affect purchase intention. In contrast, perceived value, environmental concerns, locational attributes, developer brand, and structural attributes of housing do not significantly impact purchase intention. Furthermore, perceived risk has a negative relationship with purchase intention. Finally, purchase intention is found to have a strong positive effect on willingness to pay. **Conclusions:** The study provides actionable insights for stakeholders in the real estate and sustainability sectors, emphasizing the need for targeted strategies to enhance consumer engagement and willingness to pay for green building features.

Keywords: Attitude, Green Building, Khmer Green Village, Purchase Intention, Willingness to Pay

JEL Classification Code: E44, F31, F37, G15

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1. Introduction

The construction industry plays a significant role in supplying the public's needs for houses and various infrastructure systems, commercial and office buildings, shopping centers, health facilities, entertainment venues, etc. (Pheng & Hou, 2019). About 6% of the global gross domestic product (GDP) was accounted for by the construction industry, equivalent to 10 trillion USD of annual revenue and 3.6 trillion USD of added value.

Cambodia is situated in Southeast Asia with a total area of 181,035 km2 between latitudes 10-15°N and longitudes 102-108°E. The country had about 15.29 million in 2019, with an average annual growth rate of 1.2% (MoP, 2019). The per capita GDP was 1,563 USD, and the national GDP growth rate was about 7.5% in 2018 (ADB, 2019). A year later, Cambodia achieved a 7.1% growth rate with a GDP of 13,901 million USD (ADB, 2024). This data showed that the kingdom had sustained economic growth before the Covid-19 pandemic.

According to the ADB (2024), Cambodia's economy will continue to grow after the COVID-19 pandemic. GDP growth was estimated at 5.2% in 2022, 5% in 2023, 5.8% in 2024, and 6% in 2025. Manufacturing and tourism were expected to make a significant contribution to the growth in 2024 and 2025. These statistics showed that Cambodia's economy would be the third fastest-growing economy in Southeast Asia, following the Philippines and Vietnam.

Thiel (2011) categorized Siem Reap as one of the hotspots for future real estate price developments. Cambodia had four hotspots for future real estate price developments. Phnom Penh, as the capital, was ranked at the top, followed by Siem Reap, coastal provinces (Preah Sihanouk Ville, Kampot, and Kep), and northeast provinces (Mondulkiri, Ratanakiri, and Stung Treng). These four hotspots were also considered the country's top four tourism destinations. It surely showed the linkages between tourism and real estate development, as it could be explained by the growing number of tourists and growing demands for housing and development projects, including eco-tourism, airports, seaports, golf resorts, and investment in agriculture.

The goal of sustainable construction was to minimize the impacts of the construction on the environment, economy, and society. Design, architecture, and construction of the building and infrastructure had to consider how to lower the negative impacts or guarantee that the impacts were under control (Zabihi et al., 2012). In Cambodia, sustainable construction was a subject that had been introduced previously. Many recent construction projects have undergone serious consideration in the practice of sustainable construction. However, the practice of this sustainable construction, in general, could have been reported better by Durdyev et al. (2018).

As it was assumed that the Covid-19 pandemic had changed the buyers' preferences, green building development could be a key answer for the construction industry to keep this sector growing and meet the post-pandemic demands. The study's general objective is to analyze the factors influencing house purchase intention and their relationships with green building development projects in the post-COVID-19 pandemic. The Khmer Green Village project of the Borei Angkor Landmark in Siem Reap, which was conceptualized from a green building concept, is used as a case study.

The study observed the challenges and opportunities of developing green buildings in Cambodia. As known, green building is a new concept in Cambodia that the public, architects, architectural engineers, constructors, and policymakers need more knowledge about. It will be the first study on this matter, so the analysis results will be useful for all relevant stakeholders to take proper and necessary actions.

2. Literature Review

2.1 Attitude

Huang (2022) referred to attitudes as buyers' satisfaction level toward a particular subject. It was the attitude of the buyers toward the products, and they would purchase if they were satisfied with the products or vice versa. A study by Zhang et al. (2018) found that attitude positively and significantly influenced young consumers' purchase intention of green housing in China, while subjective knowledge had a positive and significant impact on attitude. The result of a study on factors influencing the intention to purchase real estate in Saudi Arabia's role of location found a similar relationship between attitude and purchase intention. It was positive and significant (Al-Nahdi, 2014). Thus, the researcher makes the following hypothesis:

H1: Attitude has a positive relationship with purchase intention.

2.2 Subjective Norm

Ajzen (1991) referred to the subjective norm as "the perceived social pressure to perform or not to perform the behavior." It could be pressure from the external parties that a person perceived and could affect the decision. In a case study of intention to purchase real estate in Saudi Arabia, Al-Nahdi (2014) and Al-Nahdi et al. (2015) proved that subjective norms positively and significantly impacted the purchase intention. Likewise, the relationship between these two factors was also figured out in the study of purchase intention toward greenhouses in China (Zhang et al., 2018)

and Malaysia (Huang, 2022). This meant that the relationship between social norms and purchase intention was positive and significant. Accordingly, the following hypothesis is obtained:

H2: Subjective norm has a positive relationship with purchase intention.

2.3 Perceived Behavior Control

Yzer (2012) explained that perceived behavior control usually answers what a person can do once a specific behavior is being considered. The behavior could be executed if a person were high in perceived behavior control. The relationship between perceived behavior control and purchase intention was positive yet insignificant, as Zhang et al. (2018) found in the study of purchase intention toward the greenhouse in China. However, the perceived behavior control positively yet insignificantly impacted the real estate purchase intention in Saudi Arabia (Al-Nahdi et al., 2015) and green residential building purchase intention in Malaysia (Tan & Goh, 2018). This showed a positive relationship between perceived behavior control and purchase intention. Building upon these studies, the following hypotheses are formulated:

H3: Perceived behavior control has a positive relationship with purchase intention.

2.4 Perceived Value

According to Yusoff et al. (2020), the perceived value could be the perceived usefulness and perceived monetary price in return for a specific product trading between buyers and sellers. As quoted by Raji and Zainal (2016), Zeithaml (1988) defined *perceived value* as "the consumer's overall assessment of the utility of a product (or service) based on the perception of what is received and what is given." The perceived value positively and significantly impacted the customer's satisfaction, which meant that the perceived value could influence the customer's attitude (Raji & Zainal, 2016). Xie et al. (2017) also mentioned that the perceived value also impacted customer satisfaction, and the relationship between perceived value and purchase intention was positive and significant. Thus, this study put forward a hypothesis:

H4: Perceived value has a positive relationship with purchase intention.

2.5 Environmental Concerns

Nik Abdul Rashid et al. (2017) defined environmental attitude as "a learned predisposition to respond consistently favorably or unfavorably concerning the environment".

Environmental concerns refer to one individual's uneasy feelings and worries about the sustainability of the surrounding environment (Tan & Goh, 2018). In a study by Zhang et al. (2018), environmental concerns had a positive and significant impact on the attitude and social norms of young consumers toward their intention to purchase a greenhouse in China. Nik Abdul Rashid et al. (2017) also found a similar result in a study on customer's purchase intention for a green home, as environmental concern was a positive and significant influencing factor on purchase intention. Drawing from these studies, the following hypothesis has been derived:

H5: Environmental concerns have a positive relationship with purchase intention.

2.6 Social Sustainability

According to Xia et al. (2018), social sustainability could mean "including design for flexibility, comfort, safety, security, belongingness, and social engagement." Woodcraft (2015) defined *social sustainability* as "a process for creating sustainable, successful places that promote wellbeing by understanding what people need from the places in which they live and work." The study of Huang (2022) on purchase intention toward retirement villages showed that social sustainability positively and significantly affected purchase intention. Panda et al. (2019) also mentioned that social sustainability awareness could have positive and significant effects on the altruism of the buyers whose relationship with purchase intention was significantly positive. Altruism was similarly meant to be the attitude that presented a state of favorableness and non-favorableness to a customer. Hence, a hypothesis is derived:

H6: Social sustainability has a positive relationship with purchase intention.

2.7 Economic Sustainability

According to Xia et al. (2018), economic sustainability refers to "saving in construction costs, running costs, living costs, costs of future modifications and long-term maintenance, good resale value and cost efficiency to the community." In a study on purchase decisions in the residential market, Sean and Hong (2014) showed that the financial factor had a positive and significant relationship with purchase intention. Chia et al. (2016) also found a likely result. However, a negative yet insignificant relationship between economic sustainability and purchase intention was highlighted in a study by Ho et al. (2019). Thereby, a hypothesis is suggested:

H7: Economic sustainability has a positive relationship with purchase intention.

2.8 Locational Attribute

According to Kauko (2007) and Daly et al. (2003), location attributes could refer to the accessibility to such amenities in the area. It could refer to the location of the house and its distance from various places that the buyers usually need to travel to, including schools, workplaces, shopping centers, transportation services, etc. (Opoku & Abdul-Muhmin, 2010). However, Al-Nahdi et al. (2015) found a negative and insignificant relationship between the locational factor and purchase intention. Mang et al. (2020) proved that the buyers preferred houses near schools, main streets, and workplaces to sports facilities, health centers, and governmental buildings. Based on these previous studies, a hypothesis is formed:

H8: Locational attribute has a positive relationship with purchase intention.

2.9 Developer Brand

The developers' image refers to the developers' expertise, trustworthiness, and brand. Chia et al. (2016) referred to developer brand as the popularity and professionality of the project developers or project owners, in terms of construction projects, that one individual trusted. According to Chia et al. (2016), developer brands had a positive yet insignificant influence on house purchase intention. Ho et al. (2019) and Rizkalla and Suzanawaty (2013) also found the same result. Unlikely, Khoo et al. (2020) found a negative and insignificant relationship between developer brands and the purchase intention toward high-rise properties in Malaysia. Rizkalla and Suzanawaty (2013) further figured that private-label brands negatively and significantly influenced perceived risk. Accordingly, this study summarizes that:

H9: Developer brand has a positive relationship with purchase intention.

2.10 Structural Attribute of Housing

Sean and Hong (2014) referred to structural attributes of housing to lot size, the number of rooms, the presence of the garden, and authenticity in and surrounding the house. This term was similarly defined by Tan and Cheah (2012) but with additional consideration toward environmentally sensitive homes and built-up areas. Opoku and Abdul-Muhmin (2010) found a positive yet insignificant impact of private living space and building design on the intention to purchase a house. Differently, the relationship between living space and purchase intention was negative and insignificant (Chia et al., 2016). Ho et al. (2019) also found a negative and insignificant relationship between the structural attribute of housing and purchase intention.

Consequently, this study proposes the below hypothesis:

H10: Structural attribute of housing has a positive relationship with purchase intention.

2.11 Perceived Risk

Wei (2021) referred to perceived risk as the possible uncertainty of goods and services that could lead to buyer adversities. Similarly, Pathak and Pathak (2017) defined perceived risk as "consumers' perception of the uncertainty and adverse consequences of engaging in a purchase activity." Rizkalla and Suzanawaty (2013) found a negative yet insignificant impact of perceived risk on price consciousness but a negative and significant impact on purchase intention. Yu et al. (2018) found that perceived risk had a negative yet insignificant influence on purchase intention toward social commerce in China and France, while uncertainty avoidance could positively and significantly impact the perceived risk. Subsequently, this study hypothesizes that:

H11: Perceived risk has a negative relationship with purchase intention.

2.12 Purchase Intention

Consumers purchase such things based on their needs, behavior, information, and evaluation of a specific product (Mirabi et al., 2015). The purchase intention was defined as "Consumers' willingness to buy a given product at a specific time or in a specific situation." (Lu et al., 2014). According to Fishbein and Ajzen (1975), an individual's intention has a strong relationship with behavior, which means that a person's behavior could be predicted by understanding the intention. The buyers could have to analyze the risk, trustfulness, and quality of the goods before deciding to make sure that those things were satisfying (Gogoi, 2013). Thus, a hypothesis is developed per the following:

H12: Purchase intention has a positive relationship with on willingness to pay.

2.13 Willingness to Pay

Eichhorn and Meixner (2020) defined willingness to pay as "the maximum amount that an individual is willing to pay for a particular product is usually taken as a measure of the value of a good to the individual." Therefore, the highest price of a product that a buyer was willing to pay could be concluded by a study (Wertenbroch & Skiera, 2002). In the study of Tan and Goh (2018), willingness to pay was positively and significantly influenced by purchase intention. The same result was also found by Eichhorn and Meixner (2020). Similarly, as Barber et al. (2012) proved, buyers tended to pay a higher price for a product if their level of

purchase intention was also high. These showed that the purchase intention and willingness to pay had a positive relationship. Moreover, the willingness to pay could be significantly affected by the type of occupation and income (Liu et al., 2022; Zhao et al., 2018).

3. Conceptual Framework

Based on previous studies, the proposed framework consists of 13 latent variables and the relationship between purchase intention and willingness to pay was also evaluated, as in Figure 1:
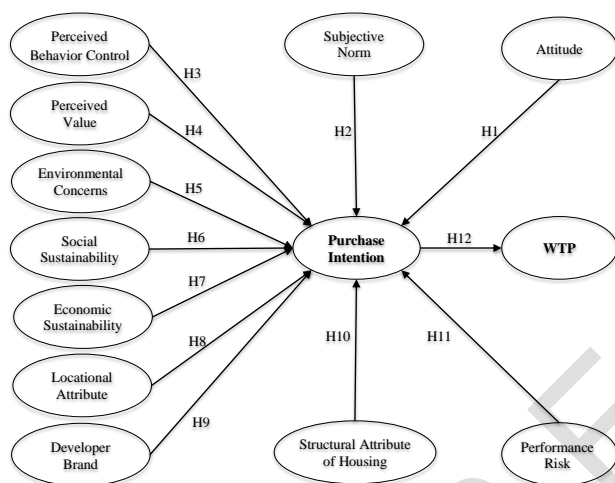

Figure 1: Conceptual Framework
Source: Created by the author.

H1: Attitude has a positive relationship with purchase intention.

H2: Subjective norm has a positive relationship with purchase intention.

H3: Perceived behavior control has a positive relationship with purchase intention.

H4: Perceived value has a positive relationship with purchase intention.

H5. Environmental concerns have a positive relationship with purchase intention.

H6: Social sustainability has a positive relationship with purchase intention.

H7: Economic sustainability has a positive relationship with purchase intention.

H8: Locational attribute has a positive relationship with purchase intention.

H9: Developer brand has a positive relationship with purchase intention.

H10: Structural attribute of housing has a positive relationship with purchase intention.

H11: Perceived risk has a negative relationship with purchase intention.

H12. Purchase intention has a positive relationship with on willingness to pay.

4. Research Methods and Materials

4.1 Research Methodology

The study selected the Khmer Green Village project of the Borei Angkor Landmark in Siem Reap as a case study on green building development in Cambodia. The online questionnaires consist of three sections: screening questions, measuring items with a 5-point Likert scale, and demographic profile. Before data collection, the validation process included the Item Objective Congruence (IOC). An average score of individual items will be calculated, and a qualified item should obtain an average of at least 0.50 (Jiraro & Tanyong, 2020). In a pilot test with a sample size of 30, in which Cronbach's Alpha was used to assess reliability, Cronbach's Alpha coefficient values were approved at a score of 0.70 (Hair et al., 2014). The data collected from the self-administered questionnaire were analyzed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM).

4.2 Population and Sample Size

The target group for this research comprises 700 participants who were clients and visitors of the Borei Angkor Landmark. In this study, the author applied software Soper (2020) developed to calculate the sample size. Thus, to ensure receiving the responses from 515 respondents, a total of 700 questionnaires were distributed.

4.3 Sampling Techniques

This study applied two techniques. Firstly, it was a purposive sampling, then convenience sampling to gather data from an accessible group of participants who were both clients and visitors of Borei Angkor Landmark via an online questionnaire.

5. Results and Discussion

5.1 Demographic Information

The demographical profile of the 515 respondents reveals a diverse group. The majority fall within the age

range of 31-40 years (40%), with the next largest group being 18-30 years (25%). Males make up 55% of the sample, while females account for 45%. Half of the respondents hold a Bachelor's degree, and 30% have a Master's degree, with a smaller percentage holding a Doctorate (5%) or a High School Diploma (15%). Regarding marital status, 50% are married, 40% are single, and the remaining 10% are either divorced, separated, or widowed. Most respondents come from households with 3-4 family members (60%), while 25% have 5 or more members. Occupation-wise, 30% are employees, 25% are employers, and 15% own family businesses, with other roles such as government officials, housewives, students, and others making up the rest. Geographically, the majority live in provinces outside Phnom Penh, Siem Reap, and Kandal (45%), with 25% residing in Phnom Penh. Monthly income varies, with 40% earning between $500 and $1,000, and 30% earning between $1,001 and $2,000, while smaller groups earn either less than $500 (20%) or more than $2,000 (10%).

Table 1: Demophraphic Results

Demographical Profile (n=515)		Frequency (n)	Percentage (%)
Age	18-30 years	129	25%
	31-40 years	206	40%
	41-50 years	103	20%
	51 years and above	77	15%
Gender	Male	283	55%
	Female	232	45%
Educational Level	High School Diploma	77	15%
	Bachelor's Degree	258	50%
	Master's Degree	154	30%
	Doctorate	26	5%
Marital Status	Single	206	40%
	Married	258	50%
	Divorced/Separated	36	7%
	Widowed	15	3%

Demographical Profile (n=515)		Frequency (n)	Percentage (%)
No. of Family Members	1-2	77	15%
	3-4	309	60%
	5 or more	129	25%
Occupation	Government Official	52	10%
	Employer	129	25%
	Employee	154	30%
	Family Business Owner	77	15%
	Housewife	26	5%
	Student	52	10%
	Others	26	5%
Current Address	Phnom Penh	129	25%
	Kandal	52	10%
	Siem Reap	103	20%
	Other Provinces	231	45%
Monthly Income	< $500	103	20%
	$500 - $1,000	206	40%
	$1,001 - $2,000	154	30%
	> $2,000	52	10%

Source: Created by the author.

5.2 Confirmatory Factor Analysis (CFA)

Table 2 shows that Confirmatory Factor Analysis (CFA) was used to evaluate the measurement model within Structural Equation Modeling (SEM). The CFA results indicated that all items for each variable were statistically significant, with factor loadings supporting discriminant validity (Hair et al., 2010). Following Hair et al. (2006), factor loadings exceeded 0.50, and p-values were below 0.05, ensuring the model's robustness. The goodness-of-fit indices were also assessed, with Composite Reliability (CR) values above 0.60 and Average Variance Extracted (AVE) values over 0.40, confirming the measurement model's reliability and validity.

Table 2: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Attitude	Al-Nahdi et al. (2015)	5	0.828	0.678-0.725	0.828	0.491
Subjective norm	Ng et al. (2019)	4	0.811	0.668-0.779	0.811	0.519
Perceived Behavior control	Zhang et al. (2018)	5	0.810	0.600-0.743	0.814	0.468
Perceived value	Tan and Goh (2018)	4	0.910	0.826-0.891	0.911	0.720
Environmental concerns	Tan and Goh (2018)	3	0.920	0.856-0.917	0.920	0.794
Social sustainability	Ng et al. (2019)	7	0.856	0.655-0.695	0.856	0.460

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Economic sustainability	Ng et al. (2019)	3	0.781	0.713-0.752	0.782	0.545
Locational attribute	Sean and Hong (2014)	5	0.772	0.499-0.750	0.786	0.427
Developer brand	Chia et al. (2016)	5	0.887	0.722-0.865	0.890	0.619
Structural attribute of housing	Sean and Hong (2014)	4	0.858	0.741-0.792	0.858	0.603
Perceived risk	Tan and Goh (2018)	3	0.792	0.688-0.827	0.798	0.569
Purchase intention	Zhang et al. (2018)	3	0.828	0.822-0.875	0.880	0.710
Willingness to pay	Tan and Goh (2018)	3	0.811	0.810-0.865	0.877	0.704

Source: Created by the author.

In Table 4, the goodness-of-fit indices for the measurement model demonstrate a high level of model fit. The CMIN/DF, GFI, AGFI, NFI, CFI, TLI, and RMSEA all fall within or exceed the acceptable ranges, suggesting that the measurement model effectively represents the empirical data. These results confirm that the constructs are well-measured and that the model provides a robust framework for analyzing the data.

Table 3: Goodness of Fit for Measurement Model

Index	Acceptable Values	Statistical Values
CMIN/DF	≤ 5.00 (Marsh et al., 2004)	1606.493/1299 = 1.237
GFI	≥ 0.80 (Nayir, 2013)	0.900
AGFI	≥ 0.80 (Nayir, 2013)	0.885
NFI	≥ 0.80 (Wu & Wang, 2006)	0.893
CFI	≥ 0.80 (Nayir, 2013)	0.977
TLI	≥ 0.80 (Sharma et al., 2005)	0.975
RMSEA	≤ 0.08 (Pedroso et al., 2016)	0.021

Index	Acceptable Values	Statistical Values
Model summary		In harmony with empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker-Lewis index, and RMSEA = root mean square error of approximation.
Source: Created by the author.

Discriminant validity is crucial in validating the distinctiveness of constructs within a measurement model. It ensures that constructs are sufficiently different from one another and not measuring the same underlying concept. To assess discriminant validity, we examine the average variance extracted (AVE) values for each construct and compare them to the squared correlations between constructs. A construct demonstrates discriminant validity if its AVE is higher than the squared correlations with other constructs (Fornell & Larcker, 1981).

Table 4: Discriminant Validity

	PI	ATT	SN	PBC	PV	EC	SS	ES	LA	DB	SAH	PR	WTP
PI	**0.843**												
ATT	0.544	**0.700**											
SN	0.311	0.232	**0.720**										
PBC	0.661	0.517	0.239	**0.684**									
PV	-0.047	-0.002	-0.042	0.021	**0.848**								
EC	-0.071	-0.051	-0.024	-0.063	0.539	**0.891**							
SS	0.596	0.574	0.210	0.627	0.013	0.025	**0.678**						
ES	0.276	0.146	0.066	0.426	-0.039	-0.008	0.274	**0.738**					
LA	0.005	0.116	0.119	-0.008	-0.093	-0.057	-0.038	-0.068	**0.654**				
DB	-0.111	-0.109	-0.166	-0.056	0.518	0.496	-0.022	0.040	-0.231	**0.787**			
SAH	-0.033	0.038	0.020	-0.014	-0.116	-0.039	0.015	0.027	0.453	-0.088	**0.776**		
PR	-0.017	0.094	0.140	-0.010	-0.105	-0.021	0.059	-0.051	0.595	-0.173	0.709	**0.755**	
WTP	0.753	0.561	0.279	0.657	0.011	-0.028	0.548	0.370	0.060	-0.058	-0.028	0.000	**0.839**

Source: Created by the author.

5.4 Structural Equation Model (SEM)

In Table 5, the goodness of fit indices for the structural model indicates a satisfactory fit overall. The CMIN/DF, CFI, TLI, and RMSEA values suggest that the model effectively represents the data, while the GFI, AGFI, and NFI values, although slightly below ideal thresholds, still indicate that the model is a reasonable fit. Collectively, these results affirm the model's robustness and alignment with the data, providing confidence in the validity and reliability of the hypothesized relationships within the model.

Table 5: Goodness of Fit for Structural Model

Index	Acceptable Values	Statistical Values
CMIN/DF	≤ 5.00 (Marsh et al., 2004)	2812.516/1365 = 2.060
GFI	≥ 0.80 (Nayir, 2013)	0.829
AGFI	≥ 0.80 (Nayir, 2013)	0.814
NFI	≥ 0.80 (Wu & Wang, 2006)	0.813
CFI	≥ 0.80 (Nayir, 2013)	0.893
TLI	≥ 0.80 (Sharma et al., 2005)	0.888
RMSEA	≤ 0.08 (Pedroso et al., 2016)	0.045
Model summary		In harmony with empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker-Lewis index, and RMSEA = root mean square error of approximation.
Source: Created by the author.

5.5 Research Hypothesis Testing Result

The examination of the structural model in this study involved testing twelve hypotheses to understand the relationships between various constructs and purchase intention, as well as the relationship between purchase intention and willingness to pay. The results, presented in terms of standardized path coefficients (β) and t-values, provide insights into which hypotheses are supported and which are not.

Table 6: Hypothesis Results of the Structural Equation Modeling

Hypothesis	Standardized path coefficient (β)	t-value	Test result
H1: Attitude toward green buildings has a positive relationship with purchase intention	0.285	6.157*	Supported
H2: Subjective norm has a positive relationship with purchase intention	0.164	3.675*	Supported
H3: Perceived behavior control has a positive relationship	0.454	8.785*	Supported

Hypothesis	Standardized path coefficient (β)	t-value	Test result
with purchase intention.			
H4: Perceived value has a positive relationship with purchase intention.	-0.025	-0.609	Not Supported
H5. Environmental concerns have a positive relationship with purchase intention.	-0.014	-0.344	Not Supported
H6: Social sustainability has a positive relationship with purchase intention.	0.298	6.400*	Supported
H7: Economic sustainability has a positive relationship with purchase intention.	0.092	2.055*	Supported
H8: Locational attribute has a positive relationship with purchase intention.	0.026	0.585	Not Supported
H9: Developer brand has a positive relationship with purchase intention.	-0.034	-0.828	Not Supported
H10: Structural attribute of housing has a positive relationship with purchase intention.	-0.034	-0.786	Not Supported
H11: Perceived risk has a negative relationship with purchase intention.	-0.057	-1.324	Not Supported
H12. Purchase intention has a positive relationship with on willingness to pay.	0.834	16.130*	Supported

Note: * p<0.05
Source: Created by the author.

H1: Attitude toward Green Buildings and Purchase Intention

The hypothesis positing a positive relationship between attitude toward green buildings and purchase intention was supported. The standardized path coefficient (β) of 0.285 and a t-value of 6.157 are both significant, indicating that a more favorable attitude toward green buildings is associated with a higher intention to purchase. This supports the notion that attitude plays a crucial role in influencing consumer behavior in the context of green buildings.

H2: Subjective Norm and Purchase Intention

The relationship between subjective norm and purchase intention was also supported. With a standardized path

coefficient of 0.164 and a t-value of 3.675, this suggests that social influences and perceived expectations from others positively impact an individual's intention to purchase green buildings.

H3: Perceived Behavior Control and Purchase Intention

This hypothesis was strongly supported with a β of 0.454 and a t-value of 8.785, indicating that individuals who feel they have greater control over their actions are more likely to have a higher purchase intention. This emphasizes the importance of perceived behavioral control in consumer decision-making processes.

H4: Perceived Value and Purchase Intention

Contrary to expectations, the hypothesis that perceived value positively affects purchase intention was not supported. The standardized path coefficient of -0.025 and a t-value of -0.609 suggest that perceived value does not have a significant impact on purchase intention in this context.

H5: Environmental Concerns and Purchase Intention

The hypothesis proposing a positive relationship between environmental concerns and purchase intention was not supported. The β of -0.014 and a t-value of -0.344 indicate that environmental concerns do not significantly influence purchase intention.

H6: Social Sustainability and Purchase Intention

Social sustainability positively affects purchase intention, as supported by a β of 0.298 and a t-value of 6.400. This result suggests that consumers who value social sustainability are more likely to intend to purchase green buildings.

H7: Economic Sustainability and Purchase Intention

The hypothesis that economic sustainability has a positive impact on purchase intention was supported. The β of 0.092 and a t-value of 2.055 show that economic considerations contribute to the intention to purchase, though the effect is relatively modest.

H8: Locational Attribute and Purchase Intention

The hypothesis concerning locational attributes was not supported. With a β of 0.026 and a t-value of 0.585, locational attributes do not significantly influence purchase intention in this study.

H9: Developer Brand and Purchase Intention

The impact of developer brand on purchase intention was not supported, as indicated by a β of -0.034 and a t-value of -0.828. This suggests that the developer's brand does not significantly affect consumers' purchase intentions in the context of green buildings.

H10: Structural Attribute of Housing and Purchase Intention

The hypothesis related to the structural attributes of housing was also not supported. With a β of -0.034 and a t-value of -0.786, structural attributes do not have a significant impact on purchase intention.

H11: Perceived Risk and Purchase Intention

Perceived risk was hypothesized to negatively impact purchase intention. However, this hypothesis was not supported, with a β of -0.057 and a t-value of -1.324, indicating that perceived risk does not significantly deter purchase intention.

H12: Purchase Intention and Willingness to Pay

The hypothesis that purchase intention positively affects willingness to pay was strongly supported. The β of 0.834 and a t-value of 16.130 suggest a robust and significant relationship, meaning that higher purchase intention translates into a higher willingness to pay.

The results of the structural model analysis indicate a mix of supported and unsupported hypotheses. Key findings include the strong support for hypotheses related to attitude, subjective norm, perceived behavior control, social sustainability, economic sustainability, and the relationship between purchase intention and willingness to pay. These supported hypotheses highlight important factors influencing purchase intention, particularly in the context of green buildings.

Conversely, hypotheses related to perceived value, environmental concerns, locational attributes, developer brand, structural attributes, and perceived risk were not supported. This suggests that these factors may not significantly influence purchase intention in this context, or that their impact may be mediated by other variables.

Overall, the findings provide a nuanced understanding of the determinants of purchase intention and underscore the complex interplay of various factors in shaping consumer behavior toward green buildings.

6. Conclusions and Recommendation

6.1 Conclusion

This study aimed to explore the factors influencing purchase intention and willingness to pay for green buildings, employing Structural Equation Modeling (SEM) to test a series of hypotheses. The results provided a comprehensive understanding of the relationships between various determinants and consumer behavior in the green building market.

The testing of hypotheses revealed several key insights:

Significant Predictors of Purchase Intention: The analysis confirmed that several factors significantly impact purchase intention. Specifically, attitude towards green buildings (H1), subjective norm (H2), perceived behavior control (H3), social sustainability (H6), and economic sustainability (H7) were found to positively influence purchase intention. These findings suggest that consumers' attitudes, societal pressures, and perceived control over their

behavior play crucial roles in their decision-making processes regarding green buildings.

Non-Significant Factors: Conversely, certain variables did not show a significant relationship with purchase intention. These include perceived value (H4), environmental concerns (H5), locational attributes (H8), developer brand (H9), structural attributes of housing (H10), and perceived risk (H11). The lack of support for these hypotheses indicates that these factors may have a less direct influence on purchase intention or might be overshadowed by other, more impactful determinants.

Impact on Willingness to Pay: The results also revealed that purchase intention strongly influences willingness to pay (H12). This confirms that consumers who are inclined to purchase green buildings are also more likely to demonstrate a higher willingness to pay for them, highlighting the interconnectedness of these two constructs

The results of the hypotheses testing offer valuable insights into the factors influencing purchase intention and willingness to pay for green buildings. The significant relationships emphasize the importance of attitudes, social and economic sustainability, perceived behavior control, and subjective norms. However, the lack of support for several hypotheses highlights the complexity of consumer behavior and the need for further research into the contextual factors and interactions that might influence these relationships. By understanding these dynamics, developers and marketers can tailor their strategies to better meet consumer preferences and enhance their market positioning.

6.2 Recommendation

Based on the comprehensive analysis of the study's hypotheses testing results, several actionable recommendations emerge for practitioners in the green building sector and policymakers. These recommendations aim to optimize strategies for increasing consumer engagement and fostering the adoption of green buildings.

To enhance consumer adoption of green buildings, it is crucial to develop and implement targeted campaigns that aim to improve consumer attitudes. The study has highlighted that a positive attitude towards green buildings significantly influences purchase intention. Thus, marketing and educational initiatives should focus on communicating the benefits and advantages of green buildings, such as their energy efficiency, reduced utility costs, and improved indoor air quality. Efforts should include educational workshops, informative brochures, and digital campaigns that effectively address and counter common misconceptions. By fostering a favorable perception, potential buyers are more likely to view green buildings as desirable investments.

Subjective norms— the impact of others' opinions— were found to significantly affect purchase intention. To leverage this influence, green building developers and promoters should engage influential community figures, industry experts, and local leaders to endorse green buildings. Utilizing testimonials and case studies from satisfied customers can also be effective. Creating a social proof environment where positive opinions and endorsements are prominently featured can help shape consumer perceptions and encourage adoption. This approach can be reinforced through social media platforms, community events, and influencer partnerships.

The study indicates that perceived behavioral control, which reflects a consumer's confidence in their ability to make informed decisions, plays a crucial role in influencing purchase intention. To enhance this sense of control, providing clear and comprehensive information about the green building purchasing process is essential. This includes offering detailed guides, financial incentives, and accessible customer support. By empowering consumers with the knowledge and resources needed to navigate their choices, developers can increase confidence and facilitate more informed decision-making.

Given that social and economic sustainability significantly impact purchase intention, it is important for marketing strategies to highlight these aspects. Green buildings contribute to community well-being and offer long-term economic savings, and these benefits should be clearly communicated to potential buyers. Marketing materials should showcase how green buildings positively impact social sustainability, such as community health and cohesion, as well as economic benefits like lower operating costs and increased property value. Case studies, simulations, and real-life examples can effectively illustrate these benefits to prospective buyers.

The study identified that factors such as perceived value, environmental concerns, developer brand, and locational attributes did not significantly influence purchase intention. It is important to explore the reasons behind these non-significant impacts through further qualitative research. Understanding consumer perceptions and preferences regarding these factors can provide insights into how they might be adjusted or better communicated. For example, if perceived value is low, developers may need to enhance the perceived benefits or improve the communication of the value proposition to align with consumer expectations.

The strong correlation between purchase intention and willingness to pay underscores the importance of fostering high purchase intention to drive greater investment in green buildings. Strategies should focus on converting consumer interest into commitment by offering attractive financing options, discounts, or added-value services. Emphasizing the long-term financial and personal benefits of green buildings can help in capitalizing on this relationship, ensuring that consumers are willing to invest more in sustainable housing

solutions.

Given the dynamic nature of consumer preferences and market conditions, continuous monitoring of consumer behavior and preferences is essential. Regular research and adaptation of strategies based on new data and insights will help stakeholders stay relevant and effective. This ongoing process should include reviewing the effectiveness of marketing campaigns, adjusting factors that influence purchase intention, and staying informed about emerging trends in the green building sector.

Implementing these recommendations can significantly enhance strategies for increasing consumer engagement and adoption of green buildings. By focusing on the key determinants identified in the study and addressing areas of less impact, stakeholders can better align their approaches with consumer preferences and behaviors. This strategic alignment will not only foster greater consumer adoption but also contribute to advancing sustainability goals and promoting more widespread implementation of green building practices.

6.3 Limitations and Further Studies

Despite the valuable insights provided by this study, several limitations should be acknowledged that could influence the interpretation and generalizability of the findings.

While the study's sample size of 515 respondents is robust, the selection process involved quota sampling, which might introduce selection bias. The participants were drawn from ten private universities in Bangkok, which may not fully represent the broader population of potential green building buyers across different regions or educational backgrounds. This could limit the generalizability of the findings to other demographics or geographic locations.

The study utilized a cross-sectional design, capturing data at a single point in time. This approach provides a snapshot of consumer attitudes and behaviors but does not account for changes over time. Longitudinal studies could offer deeper insights into how attitudes and behaviors evolve and how long-term trends impact green building adoption.

The reliance on self-reported data through surveys introduces the risk of response bias. Participants may provide socially desirable answers rather than reflecting their true attitudes or behaviors. This can affect the accuracy of the data and potentially skew the results. Triangulating survey data with other research methods, such as interviews or case studies, could help mitigate this limitation.

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