Advancing The Green And Sustainable Construction Industry: A Framework For Enhancing Green Building Adoption In India

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Abstract: Green building (GB) is widely acknowledged globally as an effective solution to mitigate the negative environmental impacts of construction activities. Developed nations consider it the most effective method for addressing environmental concerns and have put in place regulations, policies, and frameworks to encourage the incorporation of green building principles into their construction sectors. In contrast, evidence suggests that the adoption of GB in developing countries like India is advancing slowly, primarily due to the absence of corresponding regulatory frameworks.

To address this gap, the study undertakes a thorough literature review to explore theoretical applications of the theory of planned behavior in understanding the implementation of GB. By integrating the Theory of Planned Behavior with other frameworks, a tailored conceptual framework for the adoption of green building concepts (GBC) within the Indian construction industry has been developed. A testable framework has been introduced to examines the factors that consumers perceive as important attributes while purchasing a green home. The results identify the dimensions such as environmental cautiousness, promotion, and perceived risk, along with attitude, subjective norm and perceived behaviour control for consumers' intentions to buy green homes.The developed conceptual framework provides the foundation for a comprehensive strategy to promote the adoption of green building concepts within the Indian construction industry.

Index Terms: Green homes,Theory of planned behavior, Framework Formation, Green Factors

I. INTRODUCTION

1.1 THE CONCEPT OF GREEN BUILDING

The concept of "green building" extends much beyond vertical greening and rooftop gardens, which are examples of simple vegetation. It represents something more fundamental through a building that doesn't damage its environment. Without disrupting the ecological equilibrium, these structures maximize natural resources. Natural structures, ecological buildings, or sustainable buildings are some other names for them. Construction requirements for green buildings are strict, guaranteeing quality all the way through their lifespan. They strive for harmony with nature while conserving resources, protecting the environment, reducing pollution, and providing healthy and efficient living places. Three key elements constitute the notion of green buildings:

1. Efficiency in Energy Use: This facet is concerned with reducing energy use through the preservation of natural resources. Efficient use of resources is its primary goal.
2. Environmental Responsibility: In green buildings dedication to environmentally sustainable methods is seen in the focus on lowering pollutants and carbon emissions.
3.User-Centric Design: Prioritizing the needs of people via the creation of healthy, functional, and efficient places is the essence of user-centric design. Its goal is to lessen pollution and carbon emissions by making sure people living there are safe, using resources responsibly, and using energy and resources efficiently. Green design is the first step in implementing green building principles, which have far-reaching effects on the health of occupants, operational expenses, and the building's usage over its whole lifespan.

II.REVIEW OF LITERATURE

To meet the housing demands of mankind, the building sector must adapt to fast urbanization and a growing worldwide population. The United Nations Population Fund projects that the global population will rise from its current projected 7.5 billion in 2023 to 9 billion in 2050. Many agree that the building industry is a major force behind fast

urbanization because of the jobs it creates and the money it brings in for countries (Zhang et al., 2018; Zuo & Zhao, 2014). According to previous researches, the construction industry contributes over 10% to the world's GDP and creates a market volume of more than $3 trillion worldwide (Sev, 2009; WEF, 2016). In the United States, the industry accounts for 12% of GDP, and in Europe, it accounts for 10%-11% of GDP. Globally, the industry is estimated to support 111 million jobs, with low-income nations accounting for 74% of those jobs. Per Desai (2021). At 6.8% of the workforce as of September 2018, 2.4 million people were employed in the construction sector, which contributed £113 billion to the UK economy in 2017 (Rhodes, 2018). The industry also supported 6% of GDP. The sector accounts for 7.5% of Australia's gross domestic product and employs more than 1 million people (Zhang et al., 2018). A gain of 5.1% from 2020 saw the green building industry in India reach $21.0 billion in 2021. The market saw a CAGR of 7.2% between 2017 and 2021. (Market Value of Green Building in India (2017–2021, $M)).

There are several proven detrimental repercussions of buildings and construction activities on society and the environment, in addition to the beneficial benefits (Zhang et al., 2011). Half of the world's resources are used up by the construction industry, which also uses up 45% of the energy, 12–16% of the water, 60% of the prime farmland, and 70% of the wood products used for building and maintenance (Berardi, 2013; Edwards, 2010; Pulselli et al., 2007; Xing et al., 2011). Additionally, between 35 and 40 percent of the world's carbon dioxide emissions come from the construction industry, and the industry's trash accounts for 45 to 65 percent of landfill components (AlSanad, 2015; Son et al., 2009). After a building's useful life is over, it increases energy consumption and waste production by 18% due to emissions caused by transportation and processing (Zuo & Zhao, 2014). Green buildings are becoming more and more important in the construction industry because they help reduce negative impacts on the environment, increase efficiency and conservation of resources, promote health and wellness throughout the building's lifespan, and support corporate social responsibility (Zhang et al., 2018). This has prompted several governments throughout the globe to take action, passing rules, regulations, policies, and other administrative steps to promote the use of environmentally friendly techniques in construction and maintenance. Darko and Chan (2016), Fuerst et al. (2014), and Zhou (2015) all point out that the percentage of green buildings in the global building stock is still tiny, even if Western nations are at the forefront of this movement. All structures in the United States are now obligated to follow and fulfill the requirements established by the Leadership in Energy and Environmental Design (LEED) standards as a result of Green building laws (EPA, U.S., 2013). Buildings in all EU member states are required to get energy certification and reach a minimum performance requirement for energy efficiency by 2006 according to the Energy Performance of Buildings Directive (EPBD, 2002). In addition, a $100 million fund will be available to help building owners in Singapore refit their properties with green features, and the government has set an aim of attaining 80% green building stock by 2030. In addition, they have created a $20 million fund to help businesses in the sector embrace and use sustainable design practices and green building technology (Pheng Low et al., 2014). To promote the use of environmentally friendly methods and technology, developed nations such as the United States, the United Kingdom, and Canada have also instituted a range of government interventions, including incentive programs like reduced loans and mortgages (Qian & Chan, 2010).

The GRIHA tool, created by TERI (The Energy and Resources Institute), is used by the Indian Ministry of Non-Renewable Energy to evaluate the environmental sustainability of buildings. The Indian Green Building Council (IGBC) was the country's first residential-focused project, launched in 2001 with the goals of fostering a green building movement and establishing India as a world leader in green buildings by 2015. Launched in January 2007, the LEED India Green Building rating system has since become quite popular. The LEED-INDIA Green Building Rating System is a well-known benchmark for environmentally conscious structures (Midha, 2013). Environmental Protection Agency of the United States (2013) states that "green building" is the "practice of developing structures and processes that are environmentally responsible and resource-efficient throughout a building's life-cycle, from siting to design, construction, operation, maintenance, renovation, and deconstruction." The term "green building" has attracted a lot of attention from researchers and has many definitions because it is popular in the construction industry. The phrases "sustainable construction," "sustainable building," and "high-performance buildings" are frequently used interchangeably with it (Jain et al., 2020; Rajendran et al., 2009; Zuo & Zhao, 2014). When a structure passes inspection by an accredited green building rating system, such as LEED, BREEAM, Green Star, or CASBEE, it is officially recognized as a Green Building. Green Building Costs (GBCs) and Transaction Costs (TCs) provide substantial financial benefits to the construction industry, according to empirical research. Environmental criteria usually included in these rating tools include sustainable site selection, water and energy efficiency, improved indoor air quality, and the use of environmentally friendly materials (Ozorhon, 2013; Awadh, 2017; Rajendran et al., 2009). Improved water and energy efficiency, as well as increased tenant productivity, reduce owners' lifespan expenses. According to Liu et al. (2014), Qian et al. (2015), and Ries et al. (2006), it also makes properties more competitive and raises the returns on pricing and rentals for early adopters. According to recent studies, there are many good environmental impacts of following the Green Book, and by 2050, we might have reduced CO2 emissions by as much as 84 gigatonnes (United

Nations Population Fund, 2017). Reducing carbon dioxide (CO2) emissions and other pollutants, easing the effects of climate change and global warming, and protecting ecosystems are further environmental advantages of Green Building (GB) adoption, as stated by Ahn et al. (2013). Buildings that have earned the Leadership in Energy and Environmental Design (LEED) certification use 25% less energy and 11% less water than non-GB structures, according to statistics from the World Green Building Council. Empirical studies consistently identify benefits such as improved occupant health, enhanced resource efficiency, and reduced waste throughout the building's lifecycle (Darko et al., 2017; Liu et al., 2014), so stakeholders in the construction industry are encouraged to embrace Green Building practices based on these findings.There is a rising tide of support for GB practices as a result of the many advantages of Green Building deployment. There are a number of reasons why construction industry stakeholders should make use of Green Building Costs (GBCs) and Transaction Costs. Evidence from a plethora of empirical studies (Ahn et al., 2013; Arif et al., 2009; Darko & Chan, 2018; Darko et al., 2017; Love et al., 2012; Serpell et al., 2013; Mathonsi, M. D, 2012; Windapo, 2014) supports these reasons as important motivators for the widespread implementation of Green Building innovations around the world. Researchers found that the need to reduce energy consumption and increase efficiency was a major reason in the industrialized world's adoption of GB. Promoting water conservation and efficiency, improving indoor environmental quality, lowering the environmental footprint of buildings, increasing occupant health, comfort, and satisfaction, creating criteria and standards for future design and construction, meeting regulatory requirements, and accessing incentive programs are additional motivations. There is a pronounced difference between the drivers and the obstacles to implementing Green Building (GB) principles. The obstacles stand for the issues that stakeholders face while trying to embrace GB practices. Stakeholder attitudes, information and cost increases, market limits, knowledge gaps, and technological risks and difficulties were the five categories into which these hurdles were placed by Chan et al. (2017). Various empirical studies have identified additional obstacles to the global adoption of GB practices (Ahn et al., 2013; AlSanad, 2015; Ametepey et al., 2015; Bond, 2011; Darko & Chan, 2016; Häkkinen & Belloni, 2011; Hwang & Tan, 2010; Ying Liu et al., 2012; Samari et al., 2013; Serpell et al., 2013). Stakeholders in the Global Construction Industry (GCI) can improve the adoption rate of green building practices by recognizing and understanding the barriers that professionals face. These barriers include issues related to information, education, research, awareness, and expertise, as well as high construction costs for green buildings, limited incentives and support, insufficient interest and demand, resistance to change, lack of financial schemes, technological complexities, inadequate certification systems, and various risks and uncertainties. A lack of green building codes and regulations is another obstacle.

2.1 RESEARCH STRATEGY

What follows is an analysis of the study methodology, followed by a look at the idea of planned behavior and how it relates to green construction methods. Given the concept's relative youth in the industry, this study will conclude by creating a conceptual framework and explaining the interrelationships of the variables within it using factor analysis. The goal is to improve comprehension of how green building concepts are being adopted in India. This research looks at how the Theory of Planned Behavior relates to Green Building Concept implementation in India using a rigorous literature review. The study discussed the conceptual understanding of Green Building, its advantages, the factors that motivate or hinder its adoption, and more. In addition, the research produced a testable theoretical framework with the goal of promoting Green Building Concept acceptance in India's construction sector.

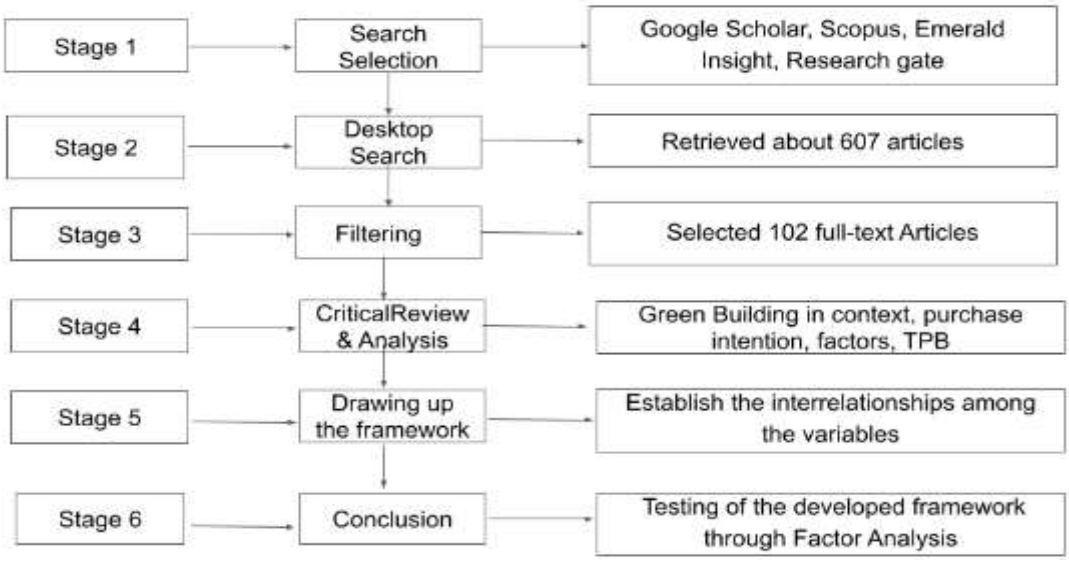

Figure. 1. Research flow and process (Author's creation).

2.2 THE THEORY OF PLANNED BEHAVIOR (TPB)

According to several studies the elements that impact human behavior have been extensively studied in an effort to understand and predict it (Fishbein & Ajzen, 1977; Gorsuch & Ortberg, 1983; Ajzen, 1985; Madden et al., 1992). After Ajzen and Fishbein (Ajzen, 1985) presented the Theory of Reasoned Action (TRA), Ajzen expanded upon it to form the Theory of Planned Behavior (TPB). According to the TRA, people's attitudes and subjective standards are very important in determining how they act. A person's attitude may be defined as their favorable or unfavorable view of particular actions (Ajzen, 1991). A person's thoughts about an activity and its consequences make up their attitude towards that conduct. Conversely, subjective norms represent how an individual thinks their social circle, including family and friends, feels about a certain action. Personal beliefs about how one's social circle and immediate family see a certain action shape one's propensity to act in accordance with these standards. By adding perceived behavioral control as an additional factor, Ajzen built upon the TRA and developed the TPB. An individual's belief in their own capacity to execute an activity is known as their perceived behavioral control. Some of the elements that could contribute to this capability include having enough money, time, knowledge, or room. The opportunity and resources that an individual has at their disposal to engage in the activity are what this term alludes to (Ajzen, 1991). Perceived behavioral control, subjective standards, and attitudes toward behavior all play a role in shaping the intention to participate in a behavior, which in turn affects the conduct itself.

Given the high expenses of property purchase, perceived behavioral control becomes significantly important when appraising the chances of owning a sustainable house. Before, we established that this component is related to "the resources and opportunities available to a person, to some extent, influencing the likelihood of behavioral accomplishment" (Ajzen, 1991). Therefore, a person's actions are dictated by the amount of money they have at their disposal. Among the many advantages of buildings made of sustainable materials are their ability to regulate temperature, improve air quality, increase biodiversity, provide places to socialize, and even produce food (William Dobson et al., 2013). Green spaces created from urban terraces and walls are becoming increasingly popular for a variety of reasons, including their positive effects on the economy, society, and the environment (Zalejska-Jonsson et al., 2020). Sustainable homes do command a premium price from homebuyers, albeit the precise amount may differ by buyer group. Previous studies have used TPB to look at how factors like attitudes, subjective standards, and perceived behavioral control affect the choice to buy a sustainable house, and the results have been all over the map. The third part of the theoretical model did not correlate with a higher probability of engaging in the activity, according to AL-Nahdi et al. (2015), who found that among Saudi Arabian homebuyers, attitudes and subjective norms had a beneficial impact on the choice. Previous actions are also taken into account when making predictions about future actions since they have the potential to influence current choices (Judge et al., 2019). In order to learn what makes Australians want to buy houses with eco-friendly certificates, researchers have used the TPB (Judge et al., 2019). In addition, the idea has recently included green consumer identity, which might influence decision-making. Two factors that had the most impact on behavior were awareness of sustainability certificates and subjective standards, according to the study's findings.

Despite TPB's widespread use in recent years, its shortcomings have been pointed out, namely that it relies on a limited set of variables to explain what drives individuals to act in a given situation. Thus, this study has utilized the TPB to provide a theoretical framework that would facilitate the incorporation of Green Building concepts and technology. In order to understand the behavioral intentions of stakeholders in relation to the construction or purchase of green buildings in the Indian setting, this study presents an enhanced model of the Theory of Planned Behavior (TPB). An expanded TPB conceptual model is created in conjunction with the core TPB components, which include Attitude, Subjective Norm, and Perceived Behavioral Control. To improve the predictive power and impact of behavioral intention, additional components are used. Concern for the Environment, Risk Perception, and Promotion are the other factors that were used to expand the TPB model. These elements are used to evaluate the practicability of purchasers' goals for environmentally friendly structures.

2.3 Proposed Conceptual Framework For Green Building Uptake In India

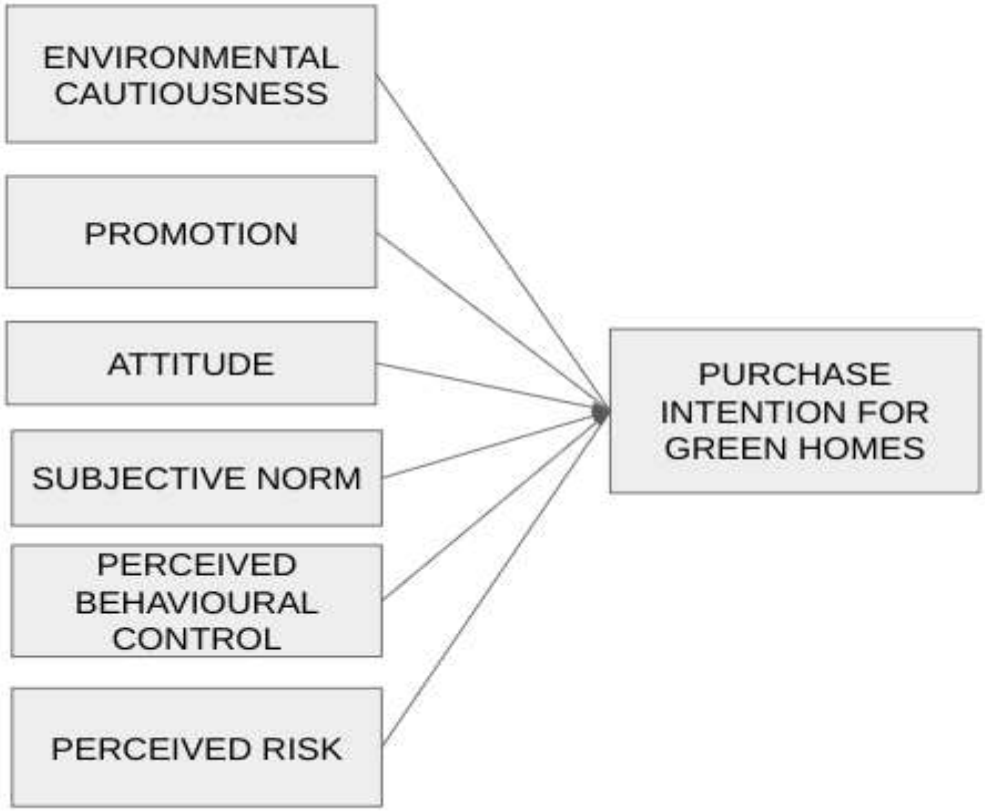

Figure 2. Proposed Conseptual Framework for green buildings uptake in India. Source : Author's construct

The components of the conceptual framework are consequently elucidated as follows:

2.3.1 Environmental Concern

Crucial to understanding human nature, environmental care reveals our natural tendencies, fears, and sympathies. Concern for the environment, as defined by Dunlap and Jones (2002), is "the extent to which individuals are cognizant of environmental issues and endorse efforts to address them or express readiness to personally contribute to their resolution." EC is a key factor in green and environmentally conscious purchasing intentions, as noted by Newton et al. (2015). Those shoppers who care about the planet will choose eco-friendly products (Kim & Choi, 2005). Anxieties over the environment is a key motivator for eco-friendly consumption (Joshi & Rahman, 2015). Concerned citizens are prepared to spend money in an effort to alleviate environmental problems (Jain & Kaur, 2004). Raisbeck and Wardlaw (2009) found a strong correlation between people's interest in environmental concerns and their perception of the significance of living in an eco-friendly house.

According to Laheri et al. (2014), the hypothesis that individuals who care about the environment are more likely to buy environmentally friendly products has gained a lot of support in the literature on green marketing. According to research by Lin and Huang (2012), eco-conscious consumers are more likely to buy items that don't harm the environment. In the area of green purchasing, research has demonstrated that environmental concern significantly influences attitude, subjective norm, and perceived behavioral control when added to the TPB model. Indirectly affecting purchase intention, environmental concern is mediated by these three factors (Paul et al., 2016; Chaudhary & Bisai, 2018). Environmental concerns also have a substantial impact on consumers' propensity to make a purchase (Prakash & Pathak, 2017). Among other variables, environmental consciousness was found to have a positive, although smaller, effect on the desire to buy a green home when Numraktrakul et al. (2012) included it in the TPB model. One of the main reasons people want to build eco-friendly houses is because they care about the environment (Tan, 2013; Tan & Goh, 2018).

2.3.2. Attitude

The degree to which an individual has a favorable or unfavorable impression of the action in question is reflected in their attitude toward that activity (Ajzen, 1991). Beliefs about that behavior are the foundation upon which attitudes are built. A professional architect may have strong opinions on the merits or drawbacks of green building practices. According to Ajzen (1991), these convictions are called behavioral beliefs. Customers are more likely to have a positive attitude toward green houses if they believe, for instance, that doing so would help them save money on their power bills. Similarly, a customer's unfavorable attitude would be exacerbated if he believes that creating green homes will cost him more. Attitudes are shaped by behavioral beliefs, which are in turn influenced by the anticipated likelihood of an outcome based on those beliefs and the severity of those beliefs. A person's attitude towards green building might lean more toward positivity or negativity, depending on their perspective. Individuals' attitudes have a significant role in shaping their intents to adopt. That is, the probability of forming an intention and ultimately adopting a green building is higher when customers or architects have a positive attitude towards doing so.

According to research conducted by Numaraktul et al. (2012), Tan (2013), and Phungwong (2015), consumers' attitudes have a substantial impact on their intentions to buy a property. When it comes to green home adaption intentions, Shaari et al. (2017) found that attitude is the most important construct. According to research by Tan (2013), Tan and Goh (2018), and Liu et al. (2018), people are more likely to buy environmentally friendly homes when they have a good attitude about them.

2.2.3. Subjective Norm

A person's subjective norm is their belief in the degree to which they think a certain action will be accepted or rejected by the general public. It includes a person's thinking about whether the individuals who matter the most to them would approve of their actions. This indicates a psychological predisposition for people to conform to other people's expectations, seek praise from others, or take other people's word for it when it comes to matters of fact (Deutsch & Gerard, 1955). A person's subjective norm may be defined as the degree to which they are driven to follow the beliefs held by important people in their lives, such as their spouse, children, coworkers, friends, etc. Buying a home is really a group effort, and social groups have a significant impact on the decision-making process. In addition to members of the immediate family, friends, and professionals all have an impact on people's housing decisions (Levy et al., 2008).

Phungwong (2015) and Numraktrakul et al. (2012) found that consumers' intentions to buy a home were positively correlated with their subjective norms. According to Numraktrakul et al. (2012), the most important factor influencing the inclination to acquire environmentally friendly home is pressure from family members. Peer pressure significantly affected eco-intention, as demonstrated by Mei et al. (2012). Among the subjective norm influences on real estate purchase intention, Al Nahdi et al. (2015) found that children and reference group had a strong positive association. Social impact did not substantially link to behavioral intent towards green housing, according to Tan (2013), which contradicts the following research. Individuals' intents to adopt or use green construction methods are largely influenced by subjective standards that they pick up from their social circles, including their family, friends, coworkers, and the media. To a greater extent than in other contexts, the role of subjective norm is crucial in encouraging green building intentions due to the fact that green building decisions are high involvement decisions that are open and visible to all people. As a result, the perception of agreement or approval from these individuals can have a substantial impact on individuals' intentions towards green practices.

2.2.4. Perceived Behavioral Control

It is "the perceived ease or difficulty of performing the behavior" that is referred to as perceived behavioral control (PBC) (Ajzen, 1991). A person's impression of the ease or difficulty of doing an action is the basis for their capacity to engage in that activity, according to PBC. Perceived Bargaining Power (PBC) shows how a person's beliefs about their ability to complete a task are supported by their resources, such as time, money, effort, and self-confidence (Ajzen 1991). The term "perceived behavioral control" describes an individual's views about their own capabilities in acquiring and purchasing goods and services. The extent to which people believe they can influence the outcome determines this impression. Their level of self-assurance in making a purchase is the most important factor. Other factors that may influence their decision to construct or buy a green home include the availability of opportunities, time, finances, knowledge, and skills. A prospective client may, for instance, think that green buildings are too expensive for him to implement.

Several studies have shown that one's perceived behavioral control is a good predictor of their intention to buy a home (Phungwong, 2010; Numraktrakul et al., 2012; Tan, 2013). Research by Sang et al. (2019) shows that people are more likely to buy eco-friendly homes if they feel they have control over their actions. In contrast to these findings, Zhang et al. (2018) confirmed that perceived behavioral control is negligible and does not impact the desire to buy environmentally friendly houses, which is in line with the findings published by Tan & Goh (2018).

2.2.5. Promotion

Many view the government's efforts to encourage environmentally conscious purchasing as a major initiative that will pique consumers' interest in making a difference. According to research, the government should take the lead in encouraging environmentally friendly construction by enacting laws and regulations (Sussman, 2008; Circo, 2007). People believe that the government has a primary obligation to safeguard the environment, according to Chen and Chai (2010), who highlighted the importance of the government's involvement in environmental protection and how it affects consumer attitudes towards environmentally friendly products. Environmentally conscious people were more likely to buy green homes when the government offered subsidies (Raisbeck & Wardlaw, 2009). According to Mei et al. (2012), green purchasing intention is most strongly influenced by government activities. The goal to promote green housing consumption was found to be impacted by the participation of the government, according to Numraktrakul et al. (2012). According to Wu et al. (2016), the government should play a crucial role in encouraging and directing building contractors to implement sustainable practices in construction waste management. Among the extra constructs in TPB, Zhang et al. (2018) found that governmental incentive had the most impact on green home intention.

2.2.6 Perceived Risk

One kind of risk is the possibility that green houses (GHs) won't work as promised and won't provide the advantages that were anticipated. Residents may worry about the safety and dependability of the new technology and equipment used in GHs because the market for these facilities is still in its early phases. The fact that prospective homeowners often struggle to understand all the GH performance features before purchasing a home further makes the situation worse (Liu, 2018). Inadequate management during the operational phase in India also contributes to the gap between the high design criteria and poor operational performance of GHs (Huang, 2018). As a result, GHs could not work as expected all the way through their lifespan. Research by Li (2018) and Tan (2019) indicates that homebuyers' views and intentions toward purchasing GHs are negatively affected by perceived performance hazards.

When people think about buying or managing green houses (GHs), they may imagine possible monetary losses. This is known as perceived financial risks. In the beginning, GH providers frequently face challenges in reaching economies of scale, which causes pricing to be higher compared to regular housing. Public adoption of GHs is hindered, according to research, by their high acquisition prices (Jia, 2019; Darko, 2017). As an added note, GHs may require investments in mechanical and electrical systems to guarantee building operations. Poor GH operation, which in turn causes financial difficulties, might be the consequence of a lack of a complete management system as well as competent technical staff. So, residents can end up spending more money than intended on repairs and other operational-related charges. Darko (2017), Li (2019), and Tan (2019) found that homebuyers' perceptions of financial risks related to acquisition and maintenance expenditures negatively influenced their decisions to acquire GHs.

2.2.7. Intention

According to Ajzen and Fishbein (1980), people act in response to their intentions, attitudes, and the social pressures they feel from others they care about. A person's perceived behavioral control, their belief in their own abilities to carry out a behavior and their beliefs and attitudes both have a role in shaping their intentions to act. Nevertheless, according to many studies (Grunert & Juhl, 1995; Dembkowski & Lloyd, 1998; Venkatesh et al., 2003; Ginsberg & Bloom, 2004; Peattie & Crane, 2005; Shabnam, 2013; Zabkar & Hosta, 2011; Pandey & Khare, 2015), there is no guarantee that green purchasing intentions will translate into real actions. Even if there are some gaps in the evidence linking behavioral intention to actual conduct, the data does show that intention is both a precursor to and a proxy for behavior. As an improvement over earlier models of the attitude-behavior interaction, this theory has seen extensive use in environmental research (Sharma & Bansal, 2013; Shabnam, 2013). Many studies have shown that intention is a critical aspect preceding actual conduct, and this has led to the emergence of numerous theoretical frameworks concerning general environmental behavior and green purchasing behavior. Research by Maloney & Ward (1973), Chan & Lau (2000), Bamberg & Moser (2007), Thorgersen & Olander (2007), Nejati (2011), Sharma & Bansal (2013), Kalafatis et al. (1999), Tan & Lau (2011), and Hessami & Yousefi (2013) all corroborate the idea that green buying intention mediates green purchasing behavior. An individual's predisposition to engage in an action might be first gauged by their intention.

The Theory of Planned action (TPB) defines intentions as "the motivational factors that influence behavior, indicating how determined people are to perform a behavior and how much effort they intend to exert" (Ajzen, 1991). Intentions are a reflection of how prepared one is to engage in activity. The possibility of engaging in various activities is represented by these, which are regarded direct antecedents of conduct. In most cases, people take action when they have strong intentions to engage in green building behavior. It is possible to reliably anticipate an individual's intention to behave based on their views about the conduct, subjective standards, and perceived control (Ajzen, 1991). Precision in measuring intentions, according to Ajzen, makes them the best predictors of conduct. Furthermore, the elements impacting behavioral intentions are more easily quantifiable than the behaviors themselves. Since actual behavior is not measured in this study, behavioral intention is used instead.

III. DATA ANALYSIS AND INTERPRFETATION

The study employs a quantitative research approach, primarily relying on primary data. This data is acquired through structured questionnaires specifically aimed at individuals aged 18 or older, with a higher level of education, typically at least a high school diploma. As noted by Chan (2001), understanding the complexities of the green context being examined can be challenging for minors, thus emphasizing the necessity of adult participants for this study. Additionally, various researchers (Hedlund, 2011; Han & Kim, 2010; Alwitt & Pitts, 1996) have indicated that individuals with lower levels of education may struggle to comprehend the subject matter compared to those with higher educational attainment. Consequently, a quota sampling technique is employed to ensure the selection of respondents aged 18 and above, with at least a high school education, residing in India.

To assess the questionnaire's reliability, pilot testing involving 109 participants is conducted. The questionnaire employs a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to evaluate 29 factors. The collected data is then subjected to analysis using various statistical tools and techniques.

The data analysis utilized the Statistical Package for the Social Sciences (SPSS). Factor Analysis, a technique for data reduction, was employed to analyze the collected data. This method aims to identify underlying latent variables that are reflected in the observed variables, based on the correlation matrix of the variables involved. Typically, correlations require a large sample size to stabilize.

The factor analysis was conducted following the guidelines outlined by Hair et al. (2009). In this study, the Cronbach's Alpha coefficient is 0.7. Cronbach's Alpha is a widely used measure of internal consistency (reliability) for items within a scale, indicating the extent to which responses for a given item correlate highly with each other (Hair et al., 2009). An exploratory factor analysis was performed using SPSS to extract the attributes of Green Homes.

Table 1. presents the results of the KMO (Kaiser-Meyer-Olkin) and Bartlett's Test. The Bartlett's Test of Sphericity yielded a result of 0.000, meeting the criterion of a value less than 0.05 for the Factor Analysis to be deemed appropriate. Additionally, the KMO Measure of Sampling Adequacy yielded a result of 0.807, surpassing the minimum threshold of 0.5 for a satisfactory factor analysis (Bajpai, 2013).
In Table 2, the communalities for all variables collectively indicate that the extraction values of the communalities for each variable are sufficiently high, surpassing the cutoff rate of 0.50. Consequently, all variables were considered for further analysis. Factors were extracted using the maximum likelihood method, followed by varimax rotation. The Kaiser criterion (Eigen values > 1) was applied. As previously discussed, according to the Kaiser's Criterion, a specific factor should possess Eigen values greater than 1 to warrant further analysis.
Table 3 illustrates that seven factors were extracted, each with Eigen values exceeding 1, encompassing a total of 29 variables. The data regarding attributes indicates that these seven factors collectively account for 69.326% of the variance.

Examining Table 4 of the rotated component matrix reveals the strongest correlations between variables and their respective factors. For the first factor, five variables exhibit the highest correlation: Promotion 1 (0.856), P2 (0.839), P4 (0.839), P5 (0.764), and P3 (0.757). The second factor is best represented by six variables with the highest correlations: PR6 (0.848), PR3 (0.848), PR4 (0.771), PR1 (0.771), PR5 (0.697), and PR2 (0.697). Similarly, the third factor is characterized by five variables exhibiting the strongest correlations: E5 (0.879), E4 (0.852), E2 (0.667), E3 (0.631), and E1 (0.630).
Moving on to the fourth factor, three variables display the highest correlations: SN3 (0.812), SN2 (0.779), and SN1 (0.676). The fifth factor is represented by three variables with the strongest correlations: PI1 (0.809), PI2 (0.659), and PI3 (0.625). For the sixth factor, three variables exhibit the strongest correlations: PBC 2 (0.824), PBC 1 (0.753), and PBC 3 (0.744). Lastly, the seventh factor is characterized by four variables with the highest correlations: ATT 3 (0.782), ATT 1 (0.707), ATT 2 (0.674), and ATT (0.666).

3.1 RELIABILITY TEST FOR ATTRIBUTES

Reliability analysis for each factor was conducted as depicted in Table 5.
Factor 1, focused on Environmental Concern, demonstrated a Cronbach's alpha value of 0.775, indicating that all variables are significant and essential for further investigation, ensuring the reliability of this factor.

Factor 2, centered on Attitude, exhibited a Cronbach's alpha value of 0.710, indicating the significance of all variables and their importance for continued analysis, confirming the reliability of this factor.

Factor 3, addressing Subjective Norm, displayed a Cronbach's alpha value of 0.858, signifying the significance of all variables and their necessity for further exploration, establishing the reliability of this factor.

Factor 4, concerning Perceived Behavioral Control, showed a Cronbach's alpha value of 0.804, suggesting the significance of all variables and their relevance for further study, confirming the reliability of this factor.

Factor 5, focusing on Promotion, revealed a Cronbach's alpha value of 0.905, indicating the significance of all variables and their essential role in continued investigation, confirming the reliability of this factor.

Factor 6, relating to Perceived Risk, demonstrated a Cronbach's alpha value of 0.882, signifying the significance of all variables and their importance for further scrutiny, establishing the reliability of this factor.

Factor 7, centered on Purchase Intention, exhibited a Cronbach's alpha value of 0.757, suggesting the significance of all variables and their necessity for continued analysis, confirming the reliability of this factor.

3.2 SUMMARY OF ATTRIBUTES

Table 5 presents the descriptive statistics for each attribute:
The Environment Concern attribute has a mean of 4.58 and a standard deviation of 0.29.
The Attitude attribute has a mean of 4.54 and a standard deviation of 0.28.
The Subjective Norm attribute has a mean of 4.54 and a standard deviation of 0.38.
The Perceived Behavioral Control attribute has a mean of 4.33 and a standard deviation of 0.39.
The Promotion attribute has a mean of 4.06 and a standard deviation of 0.40.
The Perceived Risk attribute has a mean of 4.35 and a standard deviation of 0.34.
The Purchase Intention attribute has a mean of 4.45 and a standard deviation of 0.33.

3.3 FINDINGS

The rotated component matrix resulting from factor analysis delineated seven primary categories based on correlations among the twenty-nine variables considered. Consequently, these twenty-nine variables were amalgamated into seven major factors. From Table 5, it was observed that five variables—specifically, "Environmental issues are crucial," "Humanity mistreats the environment," "Human interference causes disasters," "Nature's balance is delicate," and "Coexisting with nature is imperative"—were associated with characteristics concerning environmental concern. Therefore, this factor was labeled as 'Environmental Concern.'

Variables pertaining to attitude, such as "Green homes are beneficial," "Green homes offer advantages," "Green homes are secure," and "Green homes excel over conventional homes," were clustered under the major factor 'Attitude.' Factors relating to family, friends, and loved ones' approval of Green Homes were grouped under 'Subjective Norm.' Additionally, a cluster of three variables—namely, "Confidence in choosing Green Homes," "Envision on buying Green Homes," and "Readiness to buy Green Homes"—correlated closely and were categorized as 'Perceived Behavioral Control.'

Variables associated with promotion, including familiarity with Green Homes regulations, ratings, government assistance, media coverage, and economics, were grouped under the major factor 'Promotion.' Six variables concerning concerns and uncertainties regarding cost, upkeep, repair expenses, financial risk, benefits, and performance were combined under 'Perceived Risk.' Furthermore, a set of three variables—namely, "Confident about buying a green home," "Interest in Green Home living," and "Highly recommend Green Homes"—were grouped under 'Purchase Intention.'

Thus, the study indicates the significance of all factors in portraying a home as green or sustainable. Based on the survey results, the following framework can be presented, highlighting factors that influence consumers' purchase intention.

IV. CONCLUSION

The research aligns with existing literature, indicating that consumers exhibit a strong concern for the environment, as they rate the factors studied as crucial attributes when considering a green building or home for purchase. Additionally, the study suggests that consumer awareness of environmental issues serves as a potent tool for market segmentation, emphasizing the importance of communicating how green homes differ from conventional ones using the major factors identified in the study.

The theoretical framework presented in the research holds significant importance, poised to serve as a pivotal tool for conducting comprehensive empirical investigations into the adoption of Green Building practices within India's rapidly evolving construction sector. This study adds to the body of knowledge on Green Building advancements in developing nations, enhancing the understanding of industry professionals and academic researchers regarding adoption and implementation processes. It also offers guidance for stakeholders aiming to swiftly integrate Green Building principles and technologies into the industry.

Further studies utilizing statistical tools are necessary to validate and test the developed framework, which will be part of the subsequent phase of this research.

REFERENCES

1. Agenda, I. (2016, May). Shaping the future of construction a breakthrough in mindset and technology. In World Economic Forum.
2. Ahn, Y. H., Pearce, A. R., Wang, Y., & Wang, G. (2013, March). Drivers and barriers of sustainable design and construction: The perception of green building experience. International Journal of Sustainable Building Technology and Urban Development, 4(1), 35–45. https://doi.org/10.1080/2093761x.2012.759887
3. Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In Action control: From cognition to behavior (pp. 11-39). Berlin, Heidelberg: Springer Berlin Heidelberg.
4. Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and human decision processes, 50(2), 179-211.
5. Al-Nahdi, T. S., Habib, S. A., Bakar, A. H. A., Bahklah, M. S., Ghazzawi, O. H., & Al-Attas, H. A. (2015). The effect of attitude, dimensions of subjective norm, and perceived behavior control, on the intention to purchase real estate in Saudi Arabia. International Journal of Marketing Studies, 7(5), 120.
6. AlSanad, S. (2015). Awareness, Drivers, Actions, and Barriers of Sustainable Construction in Kuwait. Procedia Engineering, 118, 969–983. https://doi.org/10.1016/j.proeng.2015.08.538
7. Alwitt, L. F., & Pitts, R. E. (1996, January). Predicting Purchase Intentions for an Environmentally Sensitive Product. Journal of Consumer Psychology, 5(1), 49–64. https://doi.org/10.1207/s15327663jcp0501_03
8. Ametepey, O., Aigbavboa, C., & Ansah, K. (2015). Barriers to Successful Implementation of Sustainable Construction in the Ghanaian Construction Industry. Procedia Manufacturing, 3, 1682–1689. https://doi.org/10.1016/j.promfg.2015.07.988
9. Arif, M., Egbu, C., Haleem, A., Kulonda, D., & Khalfan, M. (2009, July 10). State of green construction in India: drivers and challenges. Journal of Engineering, Design and Technology, 7(2), 223–234. https://doi.org/10.1108/17260530910975005
10. Awadh, O. (2017, May). Sustainability and green building rating systems: LEED, BREEAM, GSAS and Estidama critical analysis. Journal of Building Engineering, 11, 25–29. https://doi.org/10.1016/j.jobe.2017.03.010
11. Bajpai, N. (2013). Research Methodology (First Impression), pp. 396. New Delhi: Pearson Education.
12. Berardi, U. (2013, October). Clarifying the new interpretations of the concept of sustainable building. Sustainable Cities and Society, 8, 72–78. https://doi.org/10.1016/j.scs.2013.01.008
13. Bond, S. (2011, July 12). Barriers and drivers to green buildings in Australia and New Zealand. Journal of Property Investment & Finance, 29(4/5), 494–509. https://doi.org/10.1108/14635781111150367
14. Chan, A. P. C., Darko, A., Ameyaw, E. E., & Owusu-Manu, D. G. (2017, May). Barriers Affecting the Adoption of Green Building Technologies. Journal of Management in Engineering, 33(3). https://doi.org/10.1061/(asce)me.1943-5479.0000507
15. Chan, R. Y. K. (2001, March 2). Determinants of Chinese consumers' green purchase behavior. Psychology & Marketing, 18(4), 389–413. https://doi.org/10.1002/mar.1013
16. Darko, A., & Chan, A. P. (2016, October). Critical analysis of green building research trend in construction journals. Habitat International, 57, 53–63. https://doi.org/10.1016/j.habitatint.2016.07.001
17. Darko, A., & Chan, A. P. C. (2016, September 30). Review of Barriers to Green Building Adoption. Sustainable Development, 25(3), 167–179. https://doi.org/10.1002/sd.1651
18. Darko, A., & Chan, A. P. C. (2018, February). Strategies to promote green building technologies adoption in developing countries: The case of Ghana. Building and Environment, 130, 74–84. https://doi.org/10.1016/j.buildenv.2017.12.022
19. Darko, A., Chan, A. P. C., Gyamfi, S., Olanipekun, A. O., He, B. J., & Yu, Y. (2017, November). Driving forces for green building technologies adoption in the construction industry: Ghanaian perspective. Building and Environment, 125, 206–215. https://doi.org/10.1016/j.buildenv.2017.08.053
20. Darko, A., Chan, A. P., Owusu-Manu, D. G., & Ameyaw, E. E. (2017, March). Drivers for implementing green building technologies: An international survey of experts. Journal of Cleaner Production, 145, 386–394. https://doi.org/10.1016/j.jclepro.2017.01.043

21. Desai, B. H. (2021). 14. United Nations Environment Programme (UNEP). Yearbook of International Environmental Law, 32(1), 293–298. https://doi.org/10.1093/yiel/yvac039
22. Dobson, D. W., Sourani, A., Sertyesilisik, B., & Tunstall, A. (2013). Sustainable construction: analysis of its costs and benefits. American Journal of Civil Engineering and Architecture, 1(2), 32-38.
23. Edition). Pearson Education.
24. Edwards, B. (2010). Rough guide to sustainability. Riba Publishing.
25. EPA, U.S. (2013), Sustainable design and green building toolkit, (June).
26. EPBD, (2002). Directive 2002/91/CE of the European parliament and of the council of 16 december 2002 on the energy performance of buildings.
27. Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research.
28. Fuerst, F., Kontokosta, C., & McAllister, P. (2014, June). Determinants of Green Building Adoption. Environment and Planning B: Planning and Design, 41(3), 551–570. https://doi.org/10.1068/b120017p
29. Gorsuch, R. L., & Ortberg, J. (1983). Moral obligation and attitudes: Their relation to behavioral intentions. Journal of personality and Social Psychology, 44(5), 1025.
30. Hair, J. H. Jr., Balck, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009). Multivariate Data Analysis (6th
31. Häkkinen, T., & Belloni, K. (2011, June). Barriers and drivers for sustainable building. Building Research & Information, 39(3), 239–255. https://doi.org/10.1080/09613218.2011.561948
32. Han, H., & Kim, Y. (2010, December). An investigation of green hotel customers' decision formation: Developing an extended model of the theory of planned behavior. International Journal of Hospitality Management, 29(4), 659–668. https://doi.org/10.1016/j.ijhm.2010.01.001
33. Hedlund, T. (2011, October). The impact of values, environmental concern, and willingness to accept economic sacrifices to protect the environment on tourists' intentions to buy ecologically sustainable tourism alternatives. Tourism and Hospitality Research, 11(4), 278–288. https://doi.org/10.1177/1467358411423330
34. Hwang, B. G., & Tan, J. S. (2010, July 19). Green building project management: obstacles and solutions for sustainable development. Sustainable Development, 20(5), 335–349. https://doi.org/10.1002/sd.492
35. Jain, M., Siva, V., Hoppe, T., & Bressers, H. (2020, October). Assessing governance of low energy green building innovation in the building sector: Insights from Singapore and Delhi. Energy Policy, 145, 111752. https://doi.org/10.1016/j.enpol.2020.111752
36. Judge, M., Warren-Myers, G., & Paladino, A. (2019). Using the theory of planned behaviour to predict intentions to purchase sustainable housing. Journal of cleaner production, 215, 259-267.
37. Liu, Y., Guo, X., & Hu, F. (2014, October). Cost-benefit analysis on green building energy efficiency technology application: A case in China. Energy and Buildings, 82, 37–46. https://doi.org/10.1016/j.enbuild.2014.07.008
38. Love, P. E. D., Niedzweicki, M., Bullen, P. A., & Edwards, D. J. (2012, May). Achieving the Green Building Council of Australia's World Leadership Rating in an Office Building in Perth. Journal of Construction Engineering and Management, 138(5), 652–660. https://doi.org/10.1061/(asce)co.1943-7862.0000461
39. Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A comparison of the theory of planned behavior and the theory of reasoned action. Personality and social psychology Bulletin, 18(1), 3-9.
40. Market Value of Green Building in India (2017-2021, $ Million). (n.d.). GlobalData. https://www.globaldata.com/data-insights/construction/market-value-of-green-building-in-india/
41. Mathonsi, M. D. (2012, March 14). Factors influencing the selection of procurement systems in the South African construction industry. African Journal of Business Management, 6(10).https://doi.org/10.5897/ajbm10.978
42. Midha, A., Midha, S., & Mathu, S. (2013). Buying Behaviour of Consumers towards Green Building in Delhi-NCR. Gian Jyoti E-Journal, 3(3), 1-10.
43. Ozorhon, B. (2013, October). Analysis of Construction Innovation Process at Project Level. Journal of Management in Engineering, 29(4), 455–463. https://doi.org/10.1061/(asce)me.1943-5479.0000157
44. Pheng Low, S., Gao, S., & Lin Tay, W. (2014, November 4). Comparative study of project management and critical success factors of greening new and existing buildings in Singapore. Structural Survey, 32(5), 413–433. https://doi.org/10.1108/ss-12-2013-0040
45. Pulselli, R., Simoncini, E., Pulselli, F., & Bastianoni, S. (2007, May). Emergy analysis of building manufacturing, maintenance and use: Em-building indices to evaluate housing sustainability. Energy and Buildings, 39(5), 620–628. https://doi.org/10.1016/j.enbuild.2006.10.004
46. Qian, Q. K., & Chan, E. H. (2010, August 24). Government measures needed to promote building energy efficiency (BEE) in China. Facilities, 28(11/12), 564–589. https://doi.org/10.1108/02632771011066602

47. Qian, Q., Chan, E., & Khalid, A. (2015, March 27). Challenges in Delivering Green Building Projects: Unearthing the Transaction Costs (TCs). Sustainability, 7(4), 3615–3636. https://doi.org/10.3390/su7043615
48. Rajendran, S., Gambatese, J. A., & Behm, M. G. (2009, October). Impact of Green Building Design and Construction on Worker Safety and Health. Journal of Construction Engineering and Management, 135(10), 1058–1066. https://doi.org/10.1061/(asce)0733-9364(2009)135:10(1058)
49. Ries, R., Bilec, M. M., Gokhan, N. M., & Needy, K. L. (2006, September). The Economic Benefits of Green Buildings: A Comprehensive Case Study. The Engineering Economist, 51(3), 259–295. https://doi.org/10.1080/00137910600865469
50. Samari, M., Ghodrati, N., Esmaeilifar, R., Olfat, P., & Mohd Shafiei, M. W. (2013, January 15). The Investigation of the Barriers in Developing Green Building in Malaysia. Modern Applied Science, 7(2). https://doi.org/10.5539/mas.v7n2p1
51. Serpell, A., Kort, J., & Vera, S. (2013, June 17). AWARENESS, ACTIONS, DRIVERS AND BARRIERS OF SUSTAINABLE CONSTRUCTION IN CHILE. Technological and Economic Development of Economy, 19(2), 272–288. https://doi.org/10.3846/20294913.2013.798597
52. Sev, A. (2009). How can the construction industry contribute to sustainable development? A conceptual framework. Sustainable Development, 17(3), 161-173.
53. Son, H., Kim, C., Chong, W. K., & Chou, J. S. (2009, November 26). Implementing sustainable development in the construction industry: constructors' perspectives in the US and Korea. Sustainable Development, 19(5), 337–347. https://doi.org/10.1002/sd.442
54. UNEP (2022), "Global status report". United Nation environment programme. [http://www.unep.org/news-media/global-status-report-2023.pdf]
55. United Nations Population Fund. (2023), "World Population Trends". [http://www.unfpa.org/world-population-trends#sthash.W8sxbe5P.dpuf] (Accessed 22 September 2023)
56. Wang, S., Fan, J., Zhao, D., Yang, S., & Fu, Y. (2016). Predicting consumers' intention to adopt hybrid electric vehicles: using an extended version of the theory of planned behavior model. Transportation, 43, 123-143.
57. Windapo, A. (2014, September 9). Examination of Green Building Drivers in the South African Construction Industry: Economics versus Ecology. Sustainability, 6(9), 6088–6106. https://doi.org/10.3390/su6096088
58. Xing, Y., Hewitt, N., & Griffiths, P. (2011, August). Zero carbon buildings refurbishment—A Hierarchical pathway. Renewable and Sustainable Energy Reviews, 15(6), 3229–3236. https://doi.org/10.1016/j.rser.2011.04.020
59. Ying Liu, J., Pheng Low, S., & He, X. (2012, February 10). Green practices in the Chinese building industry: drivers and impediments. Journal of Technology Management in China, 7(1), 50–63. https://doi.org/10.1108/17468771211207349
60. Zalejska-Jonsson, A., Wilkinson, S. J., & Wahlund, R. (2020). Willingness to pay for green infrastructure in residential development—a consumer perspective. Atmosphere, 11(2), 152.
61. Zhang, L., Wu, J., & Liu, H. (2018). Turning green into gold: A review on the economics of green buildings. Journal of Cleaner Production, 172, 2234–2245. https://doi.org/10.1016/j.jclepro.2017.11.188
62. Zhang, X., Platten, A., & Shen, L. (2011, November). Green property development practice in China: Costs and barriers. Building and Environment, 46(11), 2153–2160. https://doi.org/10.1016/j.buildenv.2011.04.031
63. Zhou, Y. (2015b). State power and environmental initiatives in China: Analyzing China's green building program through an ecological modernization perspective. Geoforum, 61, 1–12. https://doi.org/10.1016/j.geoforum.2015.02.002
64. Zuo, J., & Zhao, Z. (2014). Green building research–current status and future agenda: A review. Renewable & Sustainable Energy Reviews, 30, 271–281. https://doi.org/10.1016/j.rser.2013.10.021

APPENDIX

Table 1. KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.807
Bartlett's Test of Sphericity	Approx. Chi-Square	2302.780
	df	406
	Sig.	.000

Source: Authors Compilation

Table 2: Communalities

Communalities		
	Initial	Extraction
Environmental issues are crucial.	1.000	.611
Humanity mistreats the environment.	1.000	.609
Human interference causes disasters.	1.000	.549
Nature's balance is delicate.	1.000	.774
Coexisting with nature is imperative.	1.000	.818
Green homes are beneficial.	1.000	.651
Green homes offer advantages.	1.000	.535
Green homes are secure.	1.000	.653
Green homes excel over conventional homes.	1.000	.520
Family’s approval of Green Homes.	1.000	.632
Friends approval of Green Homes.	1.000	.737
Loved ones approval of Green Homes.	1.000	.768
Confidence in choosing Green Homes.	1.000	.636
Envision on buying Green Homes.	1.000	.757
Readyness to buy Green Homes.	1.000	.661
Familiarity with Green Homes regulations.	1.000	.754
Familiarity with Green Homes ratings.	1.000	.759
Knowledge about government assistance.	1.000	.792
Awareness on media coverage on Green Homes.	1.000	.734
Familiarity with Green Homes' economics.	1.000	.666
Concern regarding cost.	1.000	.769
Concern regarding upkeep.	1.000	.738
Concern regarding repair expenses.	1.000	.798
Concern regarding financial risk.	1.000	.769

Uncertainty regarding benefits.	1.000	.738
Uncertainty regarding performance.	1.000	.798
Confident about buying a green home.	1.000	.522
Interest in Green Home living.	1.000	.709
Highly recommend Green Homes.	1.000	.650

Note: Extraction Method: Principal Component Analysis
Source: Authors Compilation

Table 3: Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.687	19.609	19.609	5.687	19.609	19.609	4.018	13.856	13.856
2	4.156	14.332	33.941	4.156	14.332	33.941	3.799	13.101	26.957
3	2.755	9.501	43.441	2.755	9.501	43.441	2.692	9.282	36.239
4	2.418	8.338	51.780	2.418	8.338	51.780	2.503	8.629	44.868
5	2.002	6.904	58.683	2.002	6.904	58.683	2.459	8.481	53.349
6	1.647	5.678	64.361	1.647	5.678	64.361	2.393	8.253	61.602
7	1.440	4.965	69.326	1.440	4.965	69.326	2.240	7.724	69.326
8	1.246	4.296	73.622						
9	1.019	3.515	77.137						
10	.972	3.350	80.488						
11	.862	2.973	83.460						
12	.683	2.356	85.816						
13	.596	2.055	87.872						
14	.529	1.825	89.697						
15	.492	1.697	91.394						
16	.438	1.510	92.904						
17	.413	1.425	94.328						
18	.352	1.215	95.544						
19	.290	1.002	96.545						
20	.274	.944	97.489						
21	.191	.658	98.147						
22	.150	.516	98.663						
23	.136	.471	99.134						
24	.130	.448	99.582						
25	.082	.282	99.864						
26	.039	.136	100.000						
27	2.398E-016	8.268E-016	100.000						
28	7.988E-019	2.754E-018	100.000						
29	-3.101E-016	-1.069E-015	100.000						
Extraction Method: Principal Component Analysis.									

Source:AuthorsCompilation

Table 4: Rotated Component Matrix
Note: Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalizationa. Rotation converged in 8 iteration
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 8 iteration
Source: Authors Compilation

Table 5: Reliability Statistics

Rotated Component Matrix[a]								
		Component						
		1	2	3	4	5	6	7
P1	Familiarity with Green Homes regulations.	.856						
P2	Familiarity with Green Homes ratings.	.839						
P4	Awareness on media coverage on Green Homes.	.839						
P5	Familiarity with Green Homes' economics.	.764						
P3	Knowledge about government assistance.	.757						
PR6	Uncertainty regarding performance.		.848					
PR3	Concern regarding repair expenses.		.848					
PR4	Concern regarding financial risk.		.771					
PR1	Concern regarding cost.		.771					
PR5	Uncertainty regarding benefits.		.697					
PR2	Concern regarding upkeep.		.697					
E5	Coexisting with nature is imperative.			.879				
E4	Nature's balance is delicate.			.852				
E2	Humanity mistreats the environment.			.667				
E3	Human interference causes disasters.			.631				
E1	Environmental issues are crucial.			.630				
SN3	Loved ones approval of Green Homes.				.812			
SN2	Friends approval of Green Homes.				.779			
SN1	Family's approval of Green Homes.				.676			
PI2	Interest in Green Home living.					.809		
PI1	Confident about buying a green home.					.659		
PI3	Highly recommend Green Homes.					.625		
PBC2	Envision on buying Green Homes.						.824	
PBC1	Confidence in choosing Green Homes.						.753	
PBC3	Readyness to buy Green Homes.						.744	
ATT3	Green homes are secure.							.782
ATT1	Green homes are beneficial.							.707
ATT2	Green homes offer advantages.							.674
ATT4	Green homes excel over conventional homes.							.666

Factor	Mean	Std. Dev.	Variables	C-cronbach's A-alpha Value
Environment Concern Mean – 4.58 S.D. – 0.29	4.69	.463	Environmental issues are crucial.	0.775
	4.62	.488	Humanity mistreats the environment.	
	4.65	.480	Human interference causes disasters.	
	4.45	.602	Nature's balance is delicate.	
	4.49	.604	Coexisting with nature is imperative.	
Attitude Mean – 4.54 S.D. – 0.28	4.55	.500	Green homes are beneficial.	0.710
	4.57	.497	Green homes offer advantages.	
	4.62	.488	Green homes are secure.	
	4.44	.552	Green homes excel over conventional homes.	
Subjective Norm Mean – 4.54 S.D. – 0.38	4.49	.837	Family's approval of Green Homes.	0.858
	4.58	.898	Friends approval of Green Homes.	
	4.56	.899	Loved ones approval of Green Homes.	
Perceived Behavioral Control Mean – 4.33 S.D. – 0.39	4.35	.677	Confidence in choosing Green Homes.	.804
	4.32	.711	Envision on buying Green Homes.	
	4.33	.752	Readyness to buy Green Homes.	
Promotion Mean – 4.06 S.D. – 0.40	4.12	1.046	Familiarity with Green Homes regulations.	0.905
	4.06	1.078	Familiarity with Green Homes ratings.	
	4. 04	1.070	Knowledge about government assistance.	
	4.00	1.106	Awareness on media coverage on Green Homes.	
	4.09	1.034	Familiarity with Green Homes' economics.	
Perceived Risk Mean – 4.35	4.36	.635	Concern regarding cost.	

S.D. – 0.34	4.34	.675	Concern regarding upkeep.	0.882
	4.37	.637	Concern regarding repair expenses.	
	4.36	.635	Concern regarding financial risk.	
	4.34	.675	Uncertainty regarding benefits.	
	4.37	.637	Uncertainty regarding performance.	
Purchase Intention	4.44	.645	Confident about buying a green home.	0.757
Mean – 4.45	4.43	.498	Interest in Green Home living.	
S.D. – 0.33	4.50	.502	Highly recommend Green Homes.	

Source: Authors Compilation