



# Using the theory of planned behavior to understand factors influencing the purchase of sustainable housing

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## Abstract

This thesis attempts to understand the factors influencing homebuyers to purchase sustainable homes using the Theory of Planned Behavior (TPB) in Sweden. The aim is to identify whether environmental factors determine home buying choices and how consumers perceive these factors. Previous research has studied the factors from a quantitative study. Therefore, this thesis will explore homebuyers' behavior from a qualitative point of view. The findings indicate that positive attitude towards sustainable housing and subjective norms have a minimum effect in the decision-making process, however perceived behavior control has a high influence in the process of choosing a dwelling.

*Keywords:* TPB, sustainable house, behavior

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## Abbreviations

SLU	Swedish University of Agricultural Sciences
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action



# 1. Introduction

*This chapter introduces the topic studied in this research, starting with the background of the study presenting the current literature of the topic and the research gap. Then, the problem statement is introduced. Next, the research aim and questions that will guide this study are specified. Following, the importance of this research and its delimitations are detailed. Finally, the chapter ends by outlining the structure of the rest of the thesis.*

## 1.1 Background

More than four billion people live in urban areas worldwide (Ritchie & Roser 2018). Over decades, population migration from rural to urban areas has spurred the growth of cities and increased building and housing construction (Henderson & Wang 2003). The population continues to grow, with an expected 9.7 billion in 2050, with increasing urbanization rates (*Population / United Nations* s. f.). Cities account for more than 50% of the global population, two-thirds of global energy consumption, and more than 70% of annual global carbon emissions, which are expected to grow more (*Urban Development Overview* s. f.). The growth of population and cities has caused several problems. One of those problems is that the expansion of cities has resulted in reducing urban green spaces (Mensah 2014), which offer a multitude of environmental benefits, promote health, and provide economic opportunities (Lee & Maheswaran 2011; Zhou & Rana 2012; Wood et al. 2018). Urban green spaces also increase housing values and increment the price of renting and buying/selling (Schwarz et al. 2021).

Due to the increased number of inhabitants living in metropolitan areas, cities have a significant environmental impact (Nations s. f.). Cities generate 75% of greenhouse gas emissions (Environment Programme 2017). However, through urban design, transportation choices, and building construction, environmental damage can be significantly reduced if decisions are made to make them more sustainable (Environment 2021). There are educational programs, such as the Joint Work Programme, created by UN-Habitat, UNEP, the World Bank, and Cities Alliance, that help cities to create environmental policies that favor sustainable and environmentally friendly urban growth. (Nations s. f.). Among the actions that can be taken, building more sustainable residential buildings is one of them.

When selecting a residence, the factors that influence the decision-making process and affect the choice selected are various and diverse (Abdullah et al. 2012). Among the elements that influence the choice of one home over another, specific attributes that make the home more sustainable and reduce its environmental impact can be decisive. Furthermore, studies on urban green spaces confirm that residential neighborhoods with such areas offer higher housing prices than areas with fewer urban green spaces (Schwarz et al. 2021).

According to the Theory of Planned Behavior (TPB), an individual's beliefs influence behavior. Three components are decisive here: attitudes, subjective norms, and perceived behavioral control (Ajzen 1991). People make decisions daily, some of which are of little importance and are repeated periodically, such as the purchase of food products, and others of more outstanding caliber, and require prior preparation, information gathering, and comparison of options, such as the purchase of a vehicle or a house.

Choosing a home is a complex process with high customer involvement (Abdullah et al. 2012). Factors like location, materials, price, aesthetics, or the comfort of the house play an essential role in buying or renting a dwelling. In addition, family and friends, the availability of housing on the market, or society may influence buyers' choice of housing. Therefore, TPB can provide an appropriate theoretical framework to explore the factors that affect the decision-making process.

## 1.2 Problem statement

Research on the factors that affect purchasing a home, specifically a green home, has focused mainly on quantitative studies (Zalejska-Jonsson 2013). The concept of green home is broad and can refer to homes with different characteristics, for example, the choice of building materials with reduced environmental impact or the amount of energy consumed (Xie et al. 2017). In general, a green home is one built or remodeled to cause as little environmental impact as possible according to site-specific circumstances (Roberts 2009). Currently there are different interpretations of the term sustainable housing, some refer to a broader concept where social responsibility is taken into account in addition to environmental responsibility (McLennan 2004 see(Ismail 2011), others narrow the concept down to buildings that are ecologically constructed and reduce energy consumption (Rohinton 2005 see Ismail 2011). In this thesis, I will use the terms green home and sustainable home interchangeably because although conceptually they are not the same, the people interviewed in this thesis were unaware of the differences between the two terms.

As mentioned above, TPB will be used to explore and understand the factors that influence the decision to purchase a home. The TPB developed by Ajzen in 1985

states that attitudes, subjective norms, and perceived behavioral control influence individual actions (Ajzen 1985, 1991). Studies about the TPB are vast (Yuriev et al. 2019). Some have applied and used the theory as a framework to determine and predict pro-environmental behavior (de Leeuw et al. 2015; Wang et al. 2016; Chen et al. 2019). Previous research has focused on analyzing the factors that can influence the acquisition of sustainable behaviors and living habits, with applications to choosing a vehicle, a vacation hotel, or to find the beliefs that push pro-environmental behavior (Han et al. 2010; Joshi & Rahman 2015; Wang et al. 2016; Chuang et al. 2018; Wu et al. 2021).

Therefore, the TPB can be used to verify if the beliefs, attitudes, and actions influence the behavior of homebuyers. When applying the theory, it is possible to acquire a deep understanding of why a person decides to buy a house or apartment and the characteristics that most influence this decision. In addition, it is possible to discover whether these characteristics play a decisive role by providing detailed information on the sustainable housing features available on the market.

A study conducted on the intention to visit a green hotel (Abdou et al. 2020) showed that, in certain cases, the choices made by those individuals with an alienated behavior towards sustainability did not differ from the decisions made by individuals who lacked such eco-friendly behavior (Han et al. 2010).

Additionally, a case study conducted in China on the factors influencing the willingness to pay for green housing of a group of construction professionals concluded that certain variables positively affect the choice of sustainable housing (environmental awareness, green housing comfort, government incentive, and neighbors' opinions) (Zhang et al. 2018). The scope of that research focused on industry professionals with knowledge about green housing and their willingness to pay more for such housing. Further research is needed to explore the factors that influence sustainable house choices when buyers are not construction professionals who have limited knowledge of the industry.

A qualitative study analyzing sustainable housing features and how they influence buyers will complement previous quantitative studies, contributing new data to consolidate or contradict previous results. Furthermore, understanding the perceptions of each feature will help target new marketing strategies helping the sustainable housing sector grow.

This study contributes to the body of research about TPB and its applications to understand and predict pro-environmental behavior. Factors influencing behavior related to sustainability have been analyzed, mapping the decision-making process of individuals when choosing the best products regarding their environmental impact. Reducing negative environmental impact and achieving reductions in greenhouse gas emissions is crucial for stopping climate change and reduce the environmental damage of human's actions (Xie et al. 2017). Hence, knowing the factors that influence the choice of one greener home over another can help in

marketing by facilitating advertising and communication strategies to attract attention to these homes.

### 1.3 Aim and research questions

This thesis analyses the decision-making process of homebuyers to understand which factors are decisive in the choice of house and delve into the perception of these elements.

The aim is to identify whether environmental factors determine home buying choices and how consumers perceive these factors.

To work toward these goals, this study answers the following research questions:

- What are the factors that influence home buyers' decision-making?
- How are those factors relevant to the buyers?

### 1.4 Delimitations

This thesis analyzes how attitudes, subjective norms and perceived behavioral control influence the choice and purchase of a house and if sustainability features play a role in that decision. The choice of TPB as the theoretical framework on which this study is based is due to the multitude of studies previously conducted that conclude on its usefulness in predicting the intention to perform a behavior. The study focuses on two areas, the outskirts of Uppsala and Stockholm, analyzing the decisions made by three homebuyers. The study is delimited to Uppsala and Stockholm because the author lives around that area and all the respondents were also from these areas.

### 1.5 Thesis outline

The thesis is divided in six chapters. The first chapter is the introduction to the thesis. The second chapter presents the theory used and the literature review regarding TPB and sustainable housing. Furthermore, the methods chosen will be explained in the third chapter. The fourth and fifth chapters introduce the empirical data, the analysis of the information, and the discussion, where the author compares the results obtained in this thesis with results from previous work. The last chapter of the thesis presents the conclusions and limitations of this research.

## 2. Theory / Literature review

*This chapter comprises a review of the current literature on the Theory of Planned Behavior, decision making, and some concepts relevant to the research developed in this thesis.*

### 2.1 Theory of Planned Behavior

Many studies have analyzed the determinants of human behavior to understand and predict it (Fishbein & Ajzen 1977; Gorsuch & Ortberg 1983; Ajzen 1985; Madden et al. 1992). The TPB developed by Ajzen in 1985 is based on an earlier theory, the Theory of Reasoned Action (TRA) proposed by Fishbein and Azjen (Ajzen 1985). The latter theory argues that attitudes and subjective norms influence human behavior.

Attitudes are the individual's perception, positive or negative, of specific behaviors (Ajzen 1991). Attitude towards a behavior refers to an individual's beliefs about a behavior and its consequences. Subjective norms refer to the individual's assumption that society, close friends, or family approve or reject the behavior (ibid). Subjective norms are the personal beliefs that someone has about what society, friends, and family think about a behavior and that will influence the decision to perform the behavior.

Ajzen extended the TRA by adding a new determinant factor in behavior, called perceived behavioral control, becoming the TPB (Figure 1). Perceived behavioral control refers to an individual's perception of their ability to perform a behavior. This capacity could be, for example, having the economic resources, availability of time, possessing a skill required to perform the behavior, or having sufficient space. It refers to the resources and opportunities the individual has at his disposal to carry out the behavior (Ajzen 1991). These three factors, attitudes toward behavior, subjective norms, and perceived behavioral control, affect the intention to perform a behavior, influencing the behavior itself.

When analyzing the probability of buying a sustainable home, given the high cost of buying a property, the perceived behavioral control factor plays a significant role. As mentioned previously, this factor refers to “*the resources and opportunities available to a person... [that] to some extent dictate the likelihood of behavioral achievement*” (Ajzen 1991:183). Therefore, the economic resources available for a person directly affect their behavior.

The benefits of buildings constructed with sustainable materials include controlling temperature, improving air quality, contributing to biodiversity enhancement, providing a space for socializing, or producing food (William

Dobson et al. 2013). Thanks to the economic, social, and environmental benefits they bring, terraces and walls converted into vegetation walls are becoming increasingly popular in cities (Zalejska-Jonsson et al. 2020). Homebuyers will pay extra for sustainable housing, but the calculation of the amount they will pay is not concise. It may vary according to the demographic characteristics of the buyers (ibid).

Previous studies have used the TPB to investigate whether attitudes, subjective norms, and perceived behavioral control influence the decision to purchase a sustainable home with varying results. The authors AL-Nahdi et al. (2015) concluded that in the case of homebuyers in Saudi Arabia, attitudes and subjective norms had a positive impact on the decision, however, the third component of the theoretical model showed no relationship with an increased likelihood of performing the behavior.

Another factor analyzed when attempting to predict behavior is past behavior which can influence decisions made in the present (Judge et al. 2019). However, in the case of home buying, the analysis of past behavior is not a significant predictor because of the very different context of home buying compared to other smaller purchases such as food, transportation or clothing.

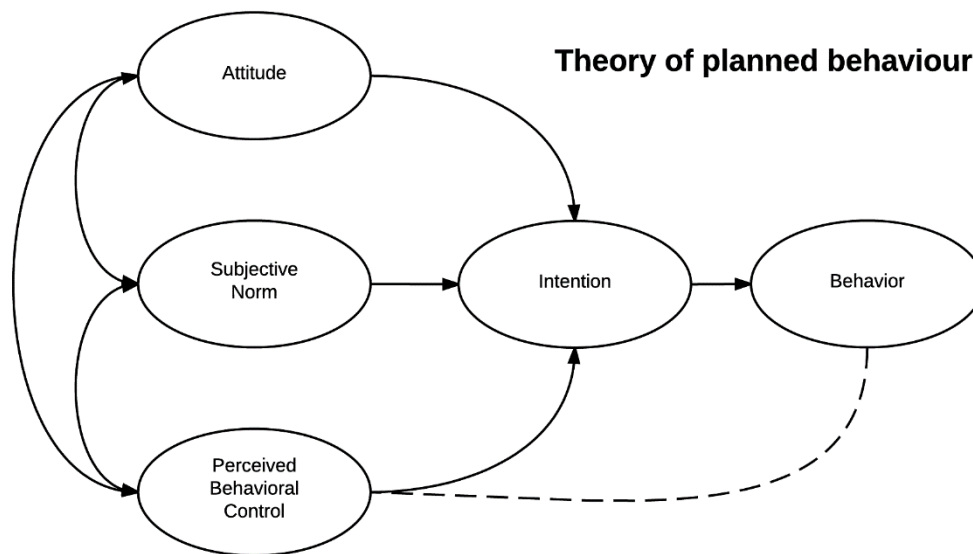


Figure 1: Theory of planned behavior (Ajzen 1991).

As shown in Figure 1, the TPB has been used to predict human behavior under the assumption that behavioral intention and perceived behavioral control directly influence it (Ajzen 1991). Both factors can influence individual decisions and behavior. However, how much influence each factor has may vary in each situation. For example, in purchasing a sustainable home, the buyer's intention may be very high, with a solid motivation to contribute to reducing the environmental impact of

their home. Despite this, if the home is significantly more expensive, the cost of purchasing and maintaining the dwelling may discourage the buyer from choosing the home, since price has been proven to be one of the factors influencing green consumer behavior (Tan 2013).

The TPB has been applied to explore the factors influencing the intention to buy homes with sustainable certifications in Australia (Judge et al. 2019). Green consumer identity is added to the theory as another component that can affect the decision. The result obtained by the authors show that two factors had the most significant influence on the behavior, subjective norms and knowledge about sustainability certifications

## 2.2 Green behavior through the lens of the TPB

Numerous studies have applied different theories to understand and predict pro-environmental behavior, concluding that the factors influencing this behavior are manifold and varied (Vermeir & Verbeke 2006). TPB has been used to explain sustainable behavior in different situations: when selecting a hotel (Han et al. 2010), shopping at the supermarket (Yuriev et al. 2019), calculating the willingness to pay for green dwellings (Zhang et al. 2018; Zalejska-Jonsson et al. 2020), or choosing a means of transportation (Wang et al. 2016). Wu et al. (2021) use the theory to analyze buyers' decision-making process of a green home. The authors conclude that the theory correctly explains buyers' behavior when choosing a residence, adding some moderating factors that influence such a purchase such as the gender of buyers or previous shopping experiences. In addition, they state that the TPB is a good framework for estimating attitude toward a behavior, with favorable results in connecting intention with actual behavior.

On the other hand, the authors Joshi and Rahman (2015) contradict the above, arguing that the theory has weaknesses in explaining the discrepancies between the attitude toward responsible consumption and the actions of buyers. A positive attitude towards sustainable products and purchasing such products are not equivalent. In other words, buyers who think that products with sustainable or green labeling are better for the environment and health do not always purchase such products. Therefore, the TPB has shortcomings in explaining behavior and decision-making. An additional drawback is that it does not consider factors that affect behavior, such as ethical values or individuals' usual consumption habits (ibid).

Other studies argue that those individuals who practice sustainable behaviors and are concerned about the care and protection of the environment are more likely to pay for sustainable products (Xie et al. 2017). This behavior is explained by the spillover effect, which refers to the positive effect that a pro-environmental behavior causes on another behavior, increasing the probability that more

sustainable behaviors will be carried out (ibid.). For example, a person who recycles is more likely to take other similar actions that help reduce their environmental impact, such as opting for public rather than private transportation. When analyzing the sustainability of products or buildings, the use to which they are put is as vital as the materials and the production process. Thus, it is not only the behavior of choosing a sustainable product that needs to be considered, but also the behavior of using it in a sustainable way (ibid).

Technological improvements are a breakthrough and offer new alternatives with a lower environmental impact. In the case of buildings, responsible consumption must accompany the use of sustainable buildings to reduce the negative impact on the environment. For example, rainwater harvesting systems or installing solar panels can reduce the environmental impact of the home, but the reduction will not be as effective if the inhabitants do not lower their use of water and energy. Technological advances, urban planning, sustainable building, and the passing of environmental protection laws contribute to a more sustainable and balanced future. However, it is necessary to accompany it with a change in daily consumption habits, increasing the environmental awareness of the population, to see definitive results.

The most practiced pro-environmental behaviors are those related to reducing energy consumption, such as turning off the computer and lights when they are not in use. Also, the use of public transport and recycling are actions that many people carry out (Yuriev et al. 2019). The factors used by the TPB can explain urban residents' sustainable decision-making when choosing a means of transport, including variants such as customer satisfaction in the analysis as a determining factor (Chen et al. 2019).

People who decide based on their impact on the environment are more likely to pay a higher price for products, or homes, that are considered sustainable (Xie et al. 2017). This opens up a wide range of opportunities for the construction industry and the housing market. Companies can invest in marketing and provide information about the features and benefits of green buildings to attract potential buyers who actively engage in sustainable behaviors in their daily lives.

Chen et al. (2019) argue that TPB is a valid theoretical framework to explain pro-environment decisions, which contradicts the arguments of authors Joshi and Rahman (2015) who reason about the gap between consumers' positive attitudes towards sustainable products and their subsequent purchase behavior. In addition, the authors compile a list of factors analyzed in other studies that influence behavioral intentions and behavior to a greater or lesser extent.

Zalejska-Jonsson et al. (2020) have developed a conceptual model to capture factors that may affect a buyer's decision to pay for green infrastructure. When performing a cost-benefit analysis, factors that influence the decision are the proximity to nature, the technology used that reduces energy, waste, and water, and the availability of sustainable products and services.



Several authors have studied the willingness to pay for green housing in different parts of the world (Zhang et al. 2018; Zalejska-Jonsson et al. 2020), concluding that there is a multitude of factors that affect this decision, from the sociodemographic characteristics of buyers to personal factors of each individual such as the perception about sustainability, the responsibility of humans with the environment, or the opinion of people close to them. Other authors delve into how social norms can influence the choice of sustainable rather than conventional housing, analyzing the role of parents, partners, children and friends (Sangkakoon et al. 2014).

One reason limiting the growth of the sustainable housing market is buyers' lack of knowledge about green buildings and their economic, social, and environmental benefits (Zhang et al. 2018). When buyers are looking to purchase a home and begin researching various options, the neighborhood's location, the area, and the surroundings are factors considered (Macmillan et al. 2016). In addition, the social activities available near the home are important, as are the proximity of loved ones, the availability of schools, supermarkets, and leisure areas (ibid.). Good urban planning focusing on the well-being of people and the environment can increase the attractiveness of green housing and create neighborhoods with sustainable housing in demand. It is essential to take a comprehensive approach to house design, highlighting and incorporating features most sought after by prospective buyers.

As discussed above, evidence confirms the positive connection between pro-environmental behavior and willingness to pay for products or housing that are more sustainable (Xie et al. 2017). Furthermore, pro-environmental behavior is linked to the social identity of individuals, increasing actions that have public visibility and are considered sustainable (Brick et al. 2017). Therefore, purchasing a sustainable home could be related to the buyer's self-identity if that person considers him/herself environmentally responsible.

The TPB provides an appropriate framework to explore the beliefs of homebuyer about sustainable housing, conventional dwelling, the real estate market and the process of acquiring a home. Thus, the thesis explores if and how attitudes, subjective norms, and perceived control over behavior influence sustainable housing choices.

### 3. Methodology

*This chapter will detail the research design conducted to find the answers to the questions posed in the introduction. The research philosophy, strategy and design are explained. The data collection and analysis are detailed, finishing with the quality criteria, limitations and ethical considerations of the author.*

#### 3.1 Research philosophy

Before starting the process of writing, reflecting on the paradigm that best fit how the author sees and discern phenomena is decisive to find the suitable methodology (Guba & Lincoln 1994). The author's philosophical assumptions affected how reality is assumed, i.e., the ontological stance, and how theory is understood and used were decisive in choosing the epistemological stance (Bell et al. 2022). The methodology, and the author's idea and perception of reality have been a determining factor in the choice of research strategy (Guba & Lincoln 1994); therefore, it was crucial to be clear about these positions from the beginning.

Ontological considerations refer to the meaning given to reality and whether it is understood as a phenomenon that exists independently of humans or whether, on the contrary, the vision of reality is affected by those who relate to it (Bell et al. 2022). Regarding the ontological position adopted, constructionism was chosen which analyzes reality as a social construction in which individuals actively participate, contrary to objectivism, which understands reality as independent of the individuals who are part of it (Bell et al. 2022).

As specified by the authors Bell et al.: *“The ontological assumptions which we make thus determine what it is that we seek to understand through research”* (Bell et al. 2022:26). The ontological position of constructionism was the most appropriate for this thesis since the research aim was to describe the factors that influence the choice of a house and to understand and deepen how these factors exert their influence. These factors are personal to each individual and are affected by many circumstances, which in turn are neither static nor absolute but are influenced by the social reality of each person.

The epistemological stance of this thesis is determined by the ontological stance chosen since, depending on the author's vision of reality, the approach to theory and how to obtain knowledge will be determined by the latter (Guba & Lincoln 1994). The epistemological philosophy adopted in this study is that of interpretivism since this thesis aims to understand the factors that influence human behavior, interpreting the connections between attitudes, beliefs, and behavior. In this research, I tried to answer the research questions by understanding how home

buyers behave and what thoughts and values were decisive their choice made. Through interpretivism, it is possible to explain human behavior and understand why people act in specific ways (Bell et al. 2022).

The opposite position is that of positivism, which seeks to explain human behavior without focusing on understanding why this behavior takes place. This thesis has not used positivism because it is based on the belief that the people who are part of it do not affect reality. Under the philosophy of positivism, generally used in natural science studies, the reality is that observed through experiments, which can be measured and is not affected by human interpretation (ibid).

### 3.2 Research strategy

The choice of epistemology and ontology serves as a guide for the choice of research strategy since, depending on the philosophy the author chooses to follow, one strategy will be the most suitable (Bell et al. 2022). In addition, values and beliefs, along with the author's writing style, should be considered during the choice of strategy (Creswell et al. 2007).

The research strategy carried out is a qualitative study in which the focus was on understanding the respondents' decision-making process in purchasing a home. To be more specific, I was interested in understanding what qualities or characteristics were decisive when choosing a home. Since the aim was to obtain an in-depth understanding of human behavior and the factors that have influenced it, qualitative research has been considered most suitable (Creswell & Creswell 2018).

The first question in this thesis was descriptive and consisted of identifying the factors that buyers take into account during their choice process. The second research question was exploratory in nature, as it focused on obtaining in-depth knowledge about the rationing of people who are in the process of choosing a home.

An inductive logic has been carried out, collecting data about purchasing behavior and the factors influencing it and then comparing the results with the theory to reveal if the findings and the theory state the same. Inductive logic is the one that starts from research, in this case from research questions and findings, to reach the theory and explore what the author wants to know (Bell et al. 2022).

### 3.3 Research design and method

The research design helps define a plan of action to be followed during data collection and analysis (Bell et al. 2022). Once the author established the strategy, a multiple-case study was decided to constitute the research design. The design of multiple-case studies is appropriate when the purpose is to explore a specific topic

with a unique context and for which information is sought using different sources to get an in-depth knowledge of the phenomenon under study (ibid).

Regarding the multiple-case study, the author wanted to explore homebuyers' decisions to understand their reasoning and motivation in the decision. Therefore, I chose three homeowners with different preferences in their choice. One of them decided to buy a move-in-ready home that did not need any renovations. The second participant preferred to buy an old house that needed renovation but could be lived in from the beginning. The last participant's decision was to buy a plot of land and hire a construction company to create a home that would suit his preferences. By selecting three people who decided to buy homes with different states of construction, the spectrum of views was broadened, offering a greater variety of opinions.

Because the thesis is a qualitative, inductive and explorative study, qualitative interviews offered benefits over other methods of data collection. For example, the possibility of finding out about past events that may have influenced the interviewees' decisions. When one wants to obtain information about the values, beliefs or motivations that lead a person to make a particular decision, it is often necessary to ask directly, as participant observation may not be sufficient.

Before gathering data, it was necessary to define the unit of analysis and observation. The unit of analysis is that which is being investigated, for example, an organization, a specific person, or a group of individuals (Dolma 2010). The observation unit is the "*entity on which measurements are obtained*" (Dolma 2010:171). In many cases, the analysis and observation units coincide, as in this research. The unit of analysis in this thesis has been homebuyers in the outskirts of Stockholm and Uppsala, the capital and the fourth biggest city of Sweden, respectively. The unit of observation was the individuals since the aim is to understand their behavior, focusing on deciphering the factors influencing their housing choice behavior and understanding how those factors affected the decision.

My first step was to conduct a search for relevant literature and review it. For this, I mainly used Google Scholar, searching for keywords such as "sustainable houses", "green house", "theory of planned behavior", "theory of reasoned action", and "pro-environmental behavior". Once I selected the most relevant articles, I obtained an overview of the research area of this study. In addition, the literature review allowed me to find the topics in which there was research and the gaps that needed further investigation.

The interviews conducted consisted of semi-structured interviews, which allowed the freedom to the respondents to give answers they wanted to give and offered the opportunity for them to add any thoughts they had at the time. In semi-structured interviews, the questions are pre-decided, but the interviewees can answer freely (Janson 2010) (Appendix 1). Also, I was able to include additional questions considered appropriate, depending on the answers given by the

interviewee. In addition, the participants were not strangers; we had an acquaintance in common in each case, which favored the relaxed atmosphere of the interviews, helping them not to be nervous or uncomfortable.

Semi-structured interviews were conducted online, with the video platform Zoom. The reason for choosing this platform was because it was well known by all the participant, who previously agreed on doing the interview through Zoom. Interviews conducted online have advantages and disadvantages compared to those performed by telephone or face-to-face (Bell et al. 2022). Though online interviews face disadvantages such as technological difficulties that may occur, connection problems, and poor audio or video quality; however, the advantages offered by online interviews were the reason why this was the interview method selected. In a qualitative study, facial expressions and body language can provide important information about the interviewee. Therefore, it was imperative to see the interviewees when talking to them. Compared to face-to-face interviews, online interviews save time and money, and especially after the COVID-19 pandemic, the ability to conduct the interview without face-to-face contact eliminated the risk of contagion between both parties (Archibald et al. 2019).

### 3.4 Data collection and analysis

The data collection necessary to answer the research questions was followed through with Zoom interviews. The data collection method used to choose the sampling was a type of purposive sampling, typical case sampling. This method was chosen because of the need to interview homebuyers to answer the research questions; therefore, selecting the candidate who met specific requirements was essential. The goal of this type of sample is to "*sample participants in a strategic way so that those are relevant to the research questions*" (Bell et al. 2022:389). In this case, those requirements were homeownership since the study was focused on analyzing the behavior and decision-making related to purchasing such a home. A random sample was not selected because the sampling needed to be relevant to the study.

The approach chosen to obtain the sample of respondents was typical case sampling since each person bought a different type of home, widening the range of points of view. This type of sampling is characterized by the choice of cases that provide unique elements for the study (Bell et al. 2022). Thus, typical case sampling was the best approach since the responses of each could provide different nuances about the attitudes, social norms, and perceived behavioral control that influenced them.

The first contact with the participants was through an email, once the common contact had contacted them and asked if they wanted to participate. Once the participants agreed to be interviewed, an invitation to conduct the online interview

was sent to them via email. For the interviews, I followed a guide prepared previously (Appendix 1) composed of questions oriented to the attitudes, social norms, and behavioral control that the buyers had when they made the purchase. These open-ended questions encouraged the interviewees to express their emotions and thoughts about their reasons for choosing their home.

The interview guide was divided into three sections, each focusing on one of the influencing factors according to the TPB. The first section was related to buyers' attitudes towards sustainable housing. The second section was about subjective norms and how these homes are perceived by people close to the buyers. The third section offers questions about perceived behavioral control (difficulties or facilities that buyers have noticed for the purchase of sustainable housing).

Among the participants, the three types of homeowners selected were: first, one who had bought a house ready to move in; second, a buyer who bought an old house to renovate in the future; and third, a buyer who decided to buy the land and build the house by hiring an architectural firm and construction company. The age range of respondents ranged from 32 to 47 years old. Ethical values may vary among different age groups (Wiernik et al. 2013), but in the case of this sample, the difference was not so vast as to have significantly different thoughts.

By selecting three different types of buyers, it was possible to compare whether the behavior of the three was similar and whether they paid attention to the same factors when buying an already built house (with or without the need for renovation) or building from scratch. In addition, the research design focuses on investigating human behavior using TPB. Thus, I attempted to gather information and learn about the topic from different sources, including comprehensively reviewing previously published literature on TPB as applied to sustainability-related decisions. Another method used to learn about sustainable buildings and the growth of cities has been reading newspaper articles explaining new trends in green buildings, as well as the general public's view towards these buildings, however the readings were not part of the data collected.

Finally, I had several informal conversations with professionals in the architectural world to get an idea of how they perceive these societal changes from the point of view of the companies in charge of implementing them. Through these conversations, I learned about the increased demand for sustainable buildings and how this increased demand is currently focused on office buildings, shopping malls, and airports and not so much on private homes.

The analysis of the data obtained was carried out using thematic analysis since it is a method that can be used by inexperienced researchers (Clarke et al. 2015). I started the analytical process without previously chosen themes, so as not to influence the results that would come out of the analysis. After the interviews, I transcribed the conversations to have the data written on a document for the analysis. The participant did not receive the transcripts because the time was

limited. Once the interviews were transcribed, I read all the transcripts to get a general idea of the topics discussed in each of them. In the second round of reading, I wrote down codes and established themes that the interviewees considered important in their purchasing decisions.

This method of analysis helps to interpret large volumes of data, being flexible about the information obtained and the results (Bell et al. 2022). Once the codes were identified, I grouped them into themes according to the characteristics of each factor mentioned by the interviewees. The themes were then categorized according to whether they referred to attitudes, subjective norms or perceived behavioral control.

### 3.5 Quality criterion

This thesis follows a qualitative data collection and analysis model. Thus, the quality criteria used are credibility, transferability, dependability, and confirmability (Bell et al. 2022).

To guarantee credibility, I tried to obtain clear and stable data to analyze. To assure transferability and dependability, this study explained the method used to collect the data to facilitate other researchers who want to conduct similar studies. Lastly, confirmability can refer to objectivity during the analysis and writing of results. I tried to obtain answer to the research question through the data collected, for that, careful attention was played into analyzing the data.

To provide ethical research, respecting the rights of its participants, the respondents were informed of the purpose of the study and its academic use. They were asked permission for recording the interviews and they agreed to the use of their names in the thesis. Lastly, regular meetings with the thesis supervisor ensured that the thesis has met these four criteria to ensure that the research is trustworthy.

### 3.6 Limitations

This study has some limitations, including the small group of respondents. Because of the reduced number of respondents, only peri-urban areas of Uppsala and Stockholm are analyzed. On the other hand, the interviews focused on attitudes, subjective norms, and perceived behavioral control from a general perspective without delving into each category deeply. In addition, socioeconomic factors were not considered in the sample's selection of buyers. Socioeconomic factors have not been considered because the sample was selected through acquaintances. When selecting home buyers, I selected a certain type of person with certain economic solvency and job stability, but without specifying socioeconomic factors. No

filtering has been done to select individuals of a particular gender, age, ethnicity, or marital status.

### 3.7 Ethical considerations

Several ethical considerations were considered when collecting the data necessary for the analysis carried out in this thesis. The basic ethical principles that have been followed are getting informed consent, avoidance of harm, privacy, and preventing deception (Bell et al. 2022).

All participants in this research have been treated with respect, confidentiality, and impartiality. Before starting the interviews, the respondents were informed of its purpose and asked if they wanted to be anonymous. The respondents were asked if they agreed on having the interview voice recorded, and only after their agreement the recording started.

During data collection and subsequent analysis an impartial stance was maintained, ensuring that personal experiences did not influence the results. Because the sample of participants was obtained through acquaintances, I was aware of possible bias, so I took special care to keep personal opinions and value judgments out of the interview. Even so, because the research topic is quite personal, the interviews had a relaxed atmosphere, in which some anecdotes were shared about my own experiences to motivate the interviewees to continue with their own.



## 4. Empirics and analysis

*In this chapter, the author describes the interviewees during the data collection process as well as the reasons why they were selected. Next, the analysis of the data obtained is carried out, where the author has proceeded to expose the information collected during the interviews.*

Before introducing the interviewees, a short description the Swedish real estate market is helpful to understand the participants' responses. Sweden is characterized by spacious red houses, with large grounds around the houses and relatively distant neighboring houses (Blomster 2016). The typical Swedish house has wooden interiors, is surrounded by nature and is a quiet place (Schauerte et al. 2013). The construction of single-family family housing was mainly before 1940 and in the years between 1960 - 1975 (Janson 2010).

### 4.1 Interviewees

#### 4.1.1 Buyer of ready-to-live-in house

The first interviewee decided to look for a house where he could move in immediately. Among his main demands was to find a detached house where he could move in quickly.

The interviewee, Björn, is a 37-year-old man who, together with his wife, visited two houses before deciding to buy their home. The choice was straightforward and did not require many considerations, as the house they bought met their demands. Their budget was 3<sup>1</sup> million Swedish crowns, and the house they found was within that budget.

#### 4.1.2 Buyer of the house to renovate

The second interviewee chose an old house, with no neighbors nearby and in need of renovation, although it was already livable. The choice of housing was, to some extent, due to the aesthetics of the selected house, as the interviewee and her partner wanted a wooden house, typical for Sweden.

The interviewee, Caroline, a 32-year-old woman, decided to buy a house with her partner in the peri-urban area of Uppsala. The couple's budget was between 3 and 3.5<sup>2</sup> million Swedish crowns. The couple had previously lived in Knivsta in a

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<sup>1</sup> 3 million Swedish crowns are equivalent to 278.11,49 American dollars and 279.293,46 euro

<sup>2</sup> 3.5 million Swedish crowns are around 324.463,41 American dollars and 325.842,37 euro

newly built semi-detached apartment. The change of city was did not impede the choice of housing, as the house search focused on several cities in the area.

### 4.1.3 Buyer of land to build the house

The third respondent and her husband opted to buy a plot of land and hire a construction company. In this way, the house fits perfectly to their demands and has all the desired characteristics. The available budget of the couple was 4.5<sup>3</sup> million Swedish crones, including the price of the land. The total cost of building the house was around 4.4 million, falling within the budget.

The interviewee, Alina, a 47-year-old woman, together with her partner, decided to hire a construction company because they could not find a house in the current housing market that was to their liking. One of the reasons why they decided to build their own home with a construction company was that they wanted a house that would be 100% in line with their preferences and durable, in her own words *“probably we will not move from here, we'll probably die here so we don't want to have problems with the house”*.

For this couple, it was crucial that the house was detached from any neighbor's house. They wanted the privacy and silence given by a stand-alone house, where everything around is nature.

## 4.2 Findings and analysis

### 4.2.1 Attitudes

The TPB states that a person's assessment of behavior is decisive for fulfilling the behavior (Bell et al. 2022). Regarding attitudes towards purchasing sustainable housing, two interviewees, Caroline and Björn, opted for conventional housing, in both cases, a single-family wooden house located on the outskirts of a city. When asked about their opinion on houses with a sustainable certification, or houses with renewable energy and materials, both Caroline and Björn showed a positive attitude towards them.

Caroline stated that making sustainable choices is every person's responsibility and that everyone who can make them should. In her own words, *"I think it is the future"*. However, when she had to choose which homes to visit, she never considered sustainable housing. In this case, the participant's attitudes and intentions to carry out the behavior were not aligned.

Björn was skeptical that sustainable houses were a solution that could reduce the environmental impact of the construction sector. For him, sustainable houses are a

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<sup>3</sup> 4.5 million Swedish crones are around 417.167,23 American dollars and 418.940.20 euro

concept used for marketing and attracting buyers, but their true environmental impact has not yet been proven. Björn makes it clear that making daily choices such as reducing the use of plastic bags or using less electricity are necessary and confirms that he makes them on a daily basis.

The third interviewee, Alina, who built her house from scratch, also had a positive attitude towards sustainable housing and its advantages. She commented about the cost savings her house would provide in the future. Alina and her husband hired a construction company and an architectural firm because they were unsatisfied with the quality of the materials used in the houses available on the market. The available houses were not sufficient for her standards, thus, she decided to design the house as she liked. To choose the construction company to work with, Alina researched online how the walls were created to get information about the different construction methods, materials, prices, and insulation functions. She did all this research because she wanted a house with good insulation, which would allow her to save heating in winter and not overheat in summer.

Alina showed a positive attitude towards sustainable houses, stating that they are more durable and require less maintenance, although a higher initial investment is needed due to the technology used in the construction. She also gave details about how they chose the windows they wanted to install, selecting ones that blocked solar radiation during the summer but which let in enough light so as not to darken the interior of the home. For her, living in a typical Swedish house was not a priority; she preferred to opt for building a modern home with all the improvements that technology could add.

All three interviewees pointed out the importance of the location of the house. For them, it was crucial that the house was in a quiet area of the city, away from the hustle that can be found in city centers. In addition, a decisive factor was to be surrounded by nature, forests, and/or lakes. When the author asked about parks, all interviewees clarified that wild nature was what they were looking for rather than parks. The need to live in independent housing without being too close to neighbors was also a factor emphasized by all three interviewees.

#### 4.2.2 Subjective norms

When buying a home, the opinion of friends and family of the home can be a decisive factor that favors or detracts from the purchase decision. The normative beliefs that participants hold influenced their housing decision. In Caroline's case, she clarifies that both her parents and her sister live in houses very similar to hers, with the same aesthetics, the same type of neighborhood, similar materials, and even year of construction. The influence parents have on their children can be through the amount of money they have spent on their housing, which can be set as a benchmark for the child; or through a direct influence on how much the child

should spend on their housing (Sangkakoon et al. 2014). Caroline stated that the house she was looking for was old and in need of renovation due to the fact that these were cheaper.

When the author asked about the maintenance of older houses compared to the modern ones, she admitted that the older house would have more maintenance that would cost more. In addition, when talking about sustainable houses, the interviewee commented that her parents did not think so much about adding improvements to their house to make it more sustainable and that if they did consider it, it was from a purely economic perspective, not out of environmental concern or responsibility. However, when she answered about her intention to renovate the house to make it more sustainable, she was positive and assured that she would consider it as long as it was within her budget. Therefore, the parental influence influenced her in the type of house and location chosen, as well as the aesthetics of it, as it resembles the house she grew up in. However, when planning her home renovations, her opinion separates from the parental one, considering adding sustainable materials and renewable energy as it is a responsibility she feels as a part of society.

Regarding Björn, when the author asked about the opinion of family and friends about his home, he answered it was not a decisive part of the choice to buy his house. The interviewee clarified that the purchase decision was quick and without too much contemplation because he and his wife found a house they liked; it was in the chosen area and had the desired aesthetics. The author asked about sustainable houses and his impressions about them in the future, Björn said that from his point of view, the market for sustainable houses is not as demanded as in the past. In his own words: *“when I started working at Skanska we also talked a lot about passive houses, and there were projects in Sweden (...) but that was a while ago, it seems like the focus changed”*.

The third interviewee chose the characteristics of her house carefully, with attention to the origin of the materials and their functionality and life cycle. During the conversation, she clarified that her family had not been involved in any of these decisions, nor did they have much knowledge about the details of the housing. However, when talking about her coworkers and friends, she was happy and proud to comment that they all thought her home was wonderful, with all the added features. She added that several of her coworkers had been inspired by seeing her home and were thinking of building a similar one of their own. Gaining approval from friends served as reinforcement about the behavior, making the person feel content and motivated to continue making similar decisions (Brick et al. 2017).

### 4.2.3 Perceived behavioral control

One factor mentioned by the three interviewees that they considered and that was decisive was the price of the house or the cost of renovating it. The purchase of a house is a decision that can be significantly affected by perceived behavioral control since the beliefs that each individual has about his or her ability to pay for it will have an enormous influence.

Regarding the beliefs that each interviewee has about their ability to purchase a sustainable home, both Caroline and Björn commented that sustainable homes are more expensive than conventional homes, as sustainable houses require a higher initial investment that neither could afford. Caroline commented several times during the interview that her budget was limited; this was one of the reasons she opted for an old house rather than a newly built one. When she gave her opinion on how much it would cost to buy and maintain a sustainable house, she admitted that she thought it was more expensive than an old house. Even so, Caroline did not perform calculations to check that her assumptions were correct, deciding to opt for the old house. Therefore, in Caroline's case, she did not consider that she had sufficient financial resources to choose that type of housing.

Björn also commented that price was one of the most decisive factors when choosing a house and added that sustainable houses are more expensive, although, over the years, the maintenance cost is lower since it is possible to save on electricity if the house is perfectly insulated and renewable energies are used. According to the interviewee, sustainable houses have a more modern technology, which extends the life cycle of the house, but which also requires specific knowledge, and more time must be dedicated to the maintenance of the house. For him, buying a sustainable house was not an option because they did not have the monetary resources or the time and skills to pay for it and maintain it over the years.

Alina, however, was more confident about her skills and resources to build a sustainable house, although she did not call it that at any point. At the beginning of the interview, she commented that she was a very technical person and had done research on house walls, windows, and materials. This belief is consistent with TPB in that when an individual believes that he/she/their has a chance of succeeding in the planned behavior, the probability of the behavior happening is higher. Alina built a sustainable house because she was predisposed to do so. Her feeling of self-efficacy allowed her to face all the difficulties during the process and finish the house as she wanted. As Azjen states, high perceived behavioral control together with intentions are good predictors of actual behavior.

## 5. Discussion

*In chapter 5 the author discusses the results obtained by analyzing the data collected and compares them with what other authors have found.*

In this thesis, the author has explored homebuyers' attitudes toward sustainable housing by applying a psychological model, the TPB, to understand the factors influencing housing choice. Overall, the results suggest that all respondents have positive attitudes towards sustainable housing, although only one interviewee lives in a sustainable house. These findings are consistent with previous authors who have analyzed the factors influencing the decision; buyers with a positive attitude towards sustainable behaviors have a higher intention to buy a house with such characteristics (Tan 2013; AL-Nahdi et al. 2015; Judge et al. 2019).

In this thesis, behavioral intention leading to actual behavior has only been met in the case of Alina, which may be due to the fact that TPB has been used as an effective theoretical framework in decisions of lower buyer involvement (Judge et al. 2019). Regarding each buyer's attitudes toward purchasing a sustainable home, factors such as the need for sufficient personal space, the aesthetics of the house, and the personal identity of each person influence behavior (Zalejska-Jonsson et al. 2020). All three interviewees in this thesis repeatedly comment on the need to own a house that was close to nature, with no neighbors nearby, which would allow them to enjoy the outdoors space.

Regarding subjective norms, the analysis shows that they had a partial influence on the decision. For two of the interviewees, buying a home that resembled their childhood home was determinant, connected to the opinion that their relatives might have of their home. However, buying a sustainable home, despite feeling responsible as part of society, did not drive them to buy a home with a lower environmental impact; in that respect, social norms have not influenced the decision as established by Zalejska-Jonsson et al. (2020). Nor for the third interviewee were social norms a decisive motive. Authors Zhang et al. (2018) in their analysis of factors influencing the decision to pay extra for sustainable housing concluded that family and friends did have power in the decision, contrary to the results of this thesis. The different results obtained with respect to the influence of subjective norms may be due to the country's culture, since each territory has different customs and social norms.

For Alina, the major influencing factor was the third component of TPB, perceived behavioral control. This factor was highly influential for Alina, with a positive result, higher perceived behavioral control, and higher intention to buy a sustainable house. This is consistent with the data of authors Zalejska-Jonsson (2020) et al. and Tan (2013). For the other two respondents, perceived behavioral

control was also an influential factor, with the difference that in their case, their negative perception resulted in the decision to buy a conventional house.

Many of the attributes mentioned by the interviewees coincide with the factors analyzed by the authors Joshi and Rahman (2015), especially those referring to the functional characteristics of the products. These authors analyze green consumer behavior focused on low-value purchases or behaviors that do not require economic investment, but the conclusions are similar to those obtained when analyzing behavior in a purchase with a large economic outlay. Buyers wanted a house that was functional, had a good lifespan, that they did not have to repair things all the time, and that was of good quality. When it came to the choice, not all buyers chose the house that met the characteristics they would have liked the most, but that is due to the budget limitations that each one had.

## 6. Conclusion and limitations

*In this last chapter, the author ends the thesis with her conclusions about the thesis and the information gathered. Also, some limitations of the study are commented.*

### 6.1 Conclusion

Through this thesis, the author has explored the factors that influence buyers' choice of a home and how those factors were relevant to the buyers. In the analysis of the data obtained, the author has found results that coincide with previous studies that show that factors such as the location of the house, aesthetics, and the price are the main reasons that influence the decision. Factors can differ due to cultural differences and culture. Also, the demographics of the country in which the home is being purchased, the area, the particular characteristics of the buyers, and many others.

It has been shown that TPB can be applied to behavioral prediction even in decisions as big as buying a house, although it is also necessary to pay attention to current legislation, individual economic conditions, the culture of the country, and the marketing of sustainable buildings. A holistic approach to the problem, involving private construction and real estate companies, municipalities and governments, urban planners, and the general public, is necessary for the long-term and stable growth of sustainable housing.

Dreams, ambitions, life experiences, the buyer's own vision of himself or herself, and the home's surroundings can influence each person's home choice. It is not easy to influence this decision effectively. However, it is possible to facilitate the visibility and advantages of sustainable housing by providing information about the features that make it durable and economical in the long term. Also, adapting the aesthetics of green homes to the demands of the market can benefit the purchase of such homes, becoming an option that both people looking for a traditional home and those looking for a modern home will want.

It is worth mentioning that the price of the three houses did not differ greatly between the conventional and sustainable houses, even considering the added price of buying the land. The two conventional houses were priced at SEK 3 and 3.5 million, and the sustainable house, with the land included, SEK 4.3 million. The interviewees had the belief that a sustainable house was much more expensive than a conventional one, which is why two of them opted not to choose to look for a green house. To avoid this type of confusion in the future, the information available on the different types of homes should be increased, promoting the benefits of



sustainable homes and clarifying that the price difference is not as high as many buyers think.

This thesis has contributed to the body of literature available on TPB and its applications for predicting pro-environmental behavior. The analysis has focused on a small group of people in a specific region of Sweden. It would be interesting to investigate the behavior of buyers living in city centers, who often live by renting rather than buying. In future research, analyzing the decision-making of urbanites and finding out whether they would choose to rent sustainable housing could provide valuable data for policymakers, real estate marketing professionals, and architectural firms. Increasing green buildings in urban centers is crucial, as noise pollution, air pollution, and lack of green spaces are more pronounced than in the suburbs.

## 6.2 Limitations

This thesis has limitations. The results obtained cannot be generalized to all homebuyers in Sweden. The individuals selected for interviews are not representative of the diversity of people accessing the housing market in the country. Due to money and time restrictions, the sampling was limited and only show houses in peri-urban areas.

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## Popular science summary

Over the last few decades, millions of people have been migrating from rural areas to cities. The growth of cities has resulted in the reduction of urban green spaces since the construction of buildings has been increasing because of the higher demand. Cities account for over 50% of the global population, two-thirds of global energy consumption, and over 70% of annual global carbon emissions, which is expected to grow more. Reducing the environmental impact of cities is crucial to stopping climate change, and there are a few ways to help build more sustainable cities.

Urban design, sustainable transportation choices like cycling or using public transport instead of private, and building green can significantly reduce environmental damage. The term green building is used to refer to any construction that is built to cause as little environmental impact as possible. A residential building, a house, or an apartment, can also be a green or sustainable building. When someone buys a house, there are many factors that influence the decision-making process, and in this thesis, the author explores these factors and if sustainable features were also influencing the decision.

The aim of the thesis was to understand the factors influencing homebuyers, and the research questions were: what are the factors that affect home buyers' decision-making? And how are those factors relevant to the buyers? The theoretical framework was the Theory of planned behavior, which states how attitudes, subjective norms, and perceived behavioral control influence the intention to perform a behavior and the behavior itself.

Attitudes are the individual's perception, which can be positive or negative, of a specific behavior. Subjective norms are the personal beliefs someone has about what society, close friends, or family think about the behavior. The assumption about whether family, friends, or society approves or rejects a behavior. Perceived behavioral control refers to an individual's perception of their ability to perform the behavior, which can refer to having enough money or the knowledge and skills needed, referring to the resources and opportunities the individual believes they have to perform the behavior successfully.

The study participants were three homeowners with different preferences about the houses they bought. The first person bought a place that was ready to live in with no renovation. The second interviewee chose an old house that needed

renovation. The third interviewee purchased a parcel of land and hired a construction company to build the house from scratch.

The data analysis was divided into three categories per each of the personal beliefs forming the TPB. The three interviewees show a positive attitude toward sustainable houses, with longer life cycles compared to traditional homes and cheaper maintenance in the long term. Also, even though the three have positive attitudes, only one respondent included materials and characteristics to her house that made it more sustainable.

Regarding the subjective norms, the analysis showed that family and friends had a minor influence on the decision. One interviewee confirmed choosing a house that looked similar to her childhood home but did not actively ask her relatives' opinions regarding which house to buy. The other interviewees answered similarly; none of them actively asked for the opinion of their close friends and family when deciding which house to buy, even though all of them thought the people close to them were happy with the choice.

One interviewee showed a high level of behavioral control for the perceived behavioral control. She commented on her technical knowledge and involvement in choosing the materials and the technical parts of the house. Therefore, her confidence in her ability and her economic resources were decisive in choosing a sustainable house. The other interviewees had a low perceived behavioral control, commenting that sustainable homes were too expensive and adding fewer sustainable houses in the market as another reason not to choose them.

The results obtained are consistent with other authors. Perceived behavioral control has the most significant influence when choosing dwellings. Also, all three respondents agreed that nature, aesthetics, and price were crucial factors in the choice.

The TPB theory is a good predictor of human behavior when the necessary resources and support systems exist. Pro-environmental behavior is not enough when purchasing something as big as a house. Other factors like economic resources, having enough options to choose from and knowing the market are also determining human behavior.

This thesis has contributed to the body of literature about the Theory of Planned Behavior and its application to pro-environmental behavior. Hopefully, in the future, we will see and enjoy more sustainable cities where nature and urban space are balanced and provide a healthy habitat for all living beings.

## Acknowledgements

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# Appendix 1

## Interview guide

Hi! Thank you **name** for taking the time to participate in my study and have an interview with me. My name is Claudia Muñoz and I am a master student at SLU. I am writing my master's thesis as part of my program Environmental Economics and Management. The topic of my thesis is the factors influencing the decision-making process when buying a house or apartment. The purpose of my thesis is to investigate which factors influence the choice of dwelling and how those factors affect the decision.

The reason why I've contacted you is because you own a house/apartment, and I would like to know about the process of searching and choosing your current home.

Before we start, if any of the questions make you uncomfortable, please let me know and we will skip to the next question.

Can you tell me your age?

Gender:

### **Introducing questions**

Please tell me about the location/area and when did you buy your house/apartment. (Is it located in the outskirts of a city, close to the center, in the countryside?)

- Around how many houses/apartments did you check before choosing one?
- Did you buy alone or with your partner?
- What was the budget you had for the purchase of the house? An approximation is enough.

### **Part 1 – Questions about Attitudes**

In general, which qualities do you value positively when buying a property?

And which ones can have a negative effect?

- Did you pay attention to houses with a sustainable certification, the materials used or the use of renewable energy?

If yes, why is it important for you?

If not, why did you decide not to pay attention to it?

- If you could choose between a conventional house or one with a sustainable certification, which one would you choose? Why?

### **Part 2 – Questions about Subjective norms**

Can you tell what your family and friends think about the house that you chose?

What do they think about sustainable houses? Do any of them live or have lived in one?

If yes, why do you think any of them chose them?

What about your coworkers?

### **Part 3 – Questions about Perceived behavioral control**

What are your thoughts about sustainable housing?

Do you think it is more expensive than a conventional one?

When you were looking for a house/apartment, did you find any options with sustainable materials or renewable energy?

Do you think one type of housing is better built and more durable than the other?

What about the maintenance of the house? Do you think one requires more work than the other one?

### **Part 4 – Questions about Intentions**

Would you be willing to pay more for a sustainable home instead of a conventional one?

Do you prefer a neighborhood with access to parks, green areas, even if it's a little farther from the city center?

What about schools, and medical centers? What is a priority when you were choosing a house?

### **End of interview**

These were all my questions; do you have anything to add or to ask?

Thank you so much for your time!

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