



The role of LEED certificate in house purchasing decision: Hep Istanbul Housing Project

El papel de la certificación LEED en la decisión de compra de viviendas: Proyecto de Viviendas HEP Istanbul

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ABSTRACT Purchasing a home is one of the most significant decisions in life. Research shows that consumers typically consider price, location, layout, durability, and aesthetics when buying a home. However, with the increasing impact of climate change, sustainability, energy consumption, and carbon emissions are becoming important factors. This study examines how the sustainability features of the HEP Istanbul Housing Project, which holds LEED Gold and Silver certifications, grounded in LEED criteria and informed by a thorough review of relevant literature, was administered to 70 individuals who had purchased homes from the project. Data were analyzed using IBM SPSS Statistics 22. The findings indicate that although consumers were not highly familiar with LEED certification, environmental responsibility played a role in their decisions, highlighting a growing awareness of sustainability in home purchases.

RESUMEN Comprar una vivienda es una de las decisiones más importantes en la vida. Los estudios muestran que los consumidores suelen considerar el precio, la ubicación, el diseño y la durabilidad al comprar una casa. Sin embargo, con el aumento del cambio climático, la sostenibilidad, el consumo de energía y las emisiones de carbono están ganando importancia. Este estudio analiza cómo las características sostenibles del Proyecto de Viviendas HEP Estambul, con certificaciones LEED oro y plata, influyen en las decisiones de compra de los consumidores. Se aplicó un cuestionario basado en los criterios LEED a 70 compradores de viviendas del proyecto. Los datos se analizaron utilizando IBM SPSS Statistics 22. Los resultados revelan que, aunque los consumidores no estaban muy familiarizados con la certificación LEED, la responsabilidad ambiental influyó en sus decisiones, lo que refleja una creciente conciencia sobre la sostenibilidad en la compra de viviendas.

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1. Introduction

The word “house” is mostly used to describe the physical properties of the buildings used for living. It refers to the material and tangible architectural properties of a dwelling (Coolen and Meesters, 2012; Rapoport, 1995). On the other hand the word “home” encompasses the emotional, social, and cultural meanings attached to a dwelling (Després, 1991; Blunt and Dowling, 2006). Besides this, “housing” includes designing and constructing of dwellings for people, including not only the physical structures but also the broader social, economic, and environmental contexts in which they exist (Rapoport, 2000). Housing is a critical component of urban planning and development, addressing both the functional needs of shelter and the quality of life for its users.

Increasing global attention to environmental and social challenges requires the housing sector to become more sustainable, as in all other areas. In this context, not only regulations and policy implementation, but also voluntary efforts by all stakeholders in the housing production and consumption process to design, construct, operate and manage buildings with a holistic approach to sustainability are required.

Rising environmental awareness has significantly shaped consumer preferences, as people increasingly favor environmentally sensitive products, particularly in the housing sector. In response to this trend, various green building certification systems, such as Leadership in Energy and Environmental Design (LEED), Building Research Establishment Environmental Assessment Methodology (BREEAM) and Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB) have emerged to improve the overall quality of buildings and infrastructures while promoting sustainability throughout their life cycle (USGBC, 2023; BRE, 2025; DGNB, n.d.). Consequently, green building certifications play a pivotal role in bridging consumer awareness with industry practices, driving the construction market towards more sustainable outcomes.

Studies on green buildings and green building certification systems focused a wide range of topics. The methods used within the green building certification systems (Ali and Al Nsairat, 2009; Schlueter and Thesseling, 2009), usage of technology and energy simulation within the scope of green building certifications (Sailor, 2008; Scheuer et al., 2003), genetic algorithms in green building design optimization (Wang et al., 2005), the market and economy for green buildings (Chan et al., 2009; Eichholtz et al., 2013), construction costs of green buildings (Mapp et al., 2011; Tatari and Kucukvar, 2011) are some of the topics addressed.

With its economic, social, and environmental dimensions, the housing sector is an interdisciplinary subject that directly affects the quality of life of inhabitants. Housing choice, therefore, becomes a critical decision-making process influenced by factors such as demographic characteristics, economic factors, accessibility, sustainability, and cultural preferences. It offers a wide

range of research areas. Demographic characteristics such as age, gender, occupation and ethnicity are analysed as for their influence on housing choices by Jayantha and Lau (2016). Income level, interest rates and access to finance are evaluated under the topic of economic factors (Chia et al., 2016). Nik Abdul Rashid and Shaharudin (2017) have searched for the influence of awareness, attitudes, and purchase behaviors of the consumers in their study on green housing purchase intention. Patel and Chugan (2016) determined that there is a lack of awareness and knowledge about what green housing includes, and misperceptions that green housing has higher prices. Furthermore, issues such as cost premiums of green housing, factors affecting consumer behaviour and marketing of green housing have been frequently addressed in the literature (Juan et al., 2017; Liobikienė et al., 2016; Chuweni et al., 2024). Kumar et al. (2024) stated that Generation X tends to prioritise cost-effectiveness and long-term savings, while Generation Y is more inclined towards environmentally friendly homes. In another study addressing cost issues in green buildings, it was stated that although green buildings have high initial costs, they offer long-term benefits such as energy saving and reducing environmental impacts (Juan et al., 2017). Fuerst and McAllister (2011) determined that consumers are willing to pay more for environmental values and offer long-term cost savings through reduced energy consumption.

A better understanding of the determinants of consumer behaviour can help manufacturers, entrepreneurs and policy makers to encourage less environmentally damaging consumer habits (Lin and Huang, 2012; Ritter et al., 2015; Huang et al., 2014). In this context, the main determinants influencing green purchasing behaviour include environmental concern, knowledge (Newton et al., 2015; Kanchanapibul et al., 2014), attitude, values (Barber et al., 2014; Do Paço et al., 2013; Ramayah et al., 2010), consciousness (Huang et al., 2014; Boztepe, 2012) and perceived consumer effectiveness (Zhao et al., 2014). These factors are generally considered as environmental attitude and perception of environmentally friendly behaviour (Liobikienė et al., 2016). According to the results of the literature review, it has been observed that studies on consumers' perceptions and purchasing behaviours towards green housing are limited and even the effects of green building certificates on purchasing have not yet been investigated.

The key objective of this paper is to assess the role of LEED certification in shaping the housing purchase decisions of consumers, focusing on environmental motivations. The study aims to contribute to the literature by providing insights into how green building certifications influence market behavior, particularly in rapidly urbanizing regions. The Hep Istanbul Housing Project, one of the notable developments in Turkey, serves as a case study to explore how LEED certification impacts consumer behavior in an emerging market where environmental concerns are becoming more relevant. The findings from the Hep Istanbul

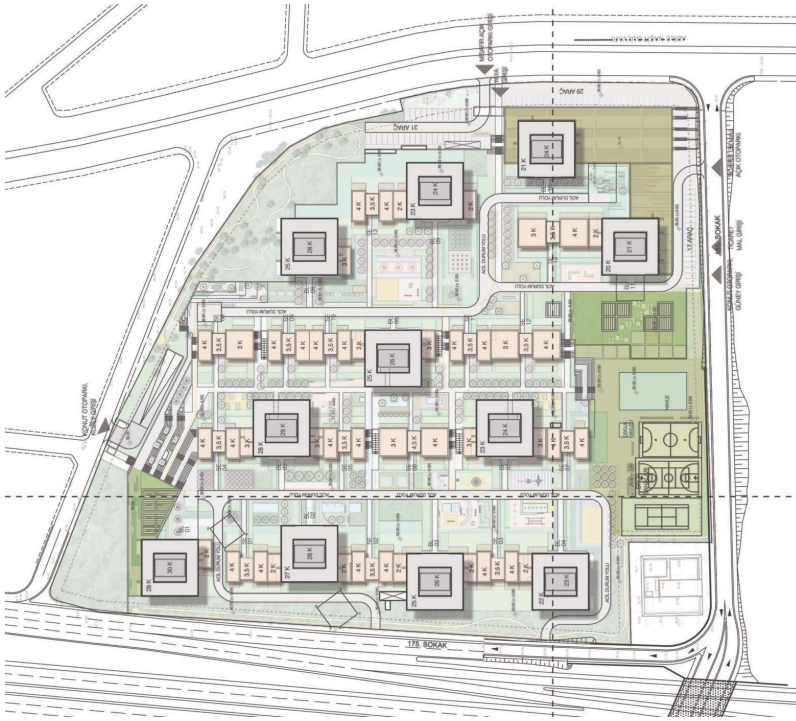


Figure 1: Site Plan of the Hep Istanbul Housing Project . CM Mimarlık (2023)

Housing Project will help to better understand the factors that drive consumer decisions in purchasing LEED certified houses, offering practical insights for developers, policymakers, and consumers alike.

While this study evaluates the sustainability features of the HEP Istanbul Housing Project according to LEED criteria, it should be noted that the evaluation systems used in green certification systems such as LEED and BREEAM have been criticised by various researchers. These assessment systems have been criticised for the use of rigid scoring systems and the use of predefined credits that do not fully align with broader and evolving sustainability criteria (Sanei et al., 2022). Sanei et al. (2022) evaluated the extent to which the scoring system of LEED v4 for Homes is compatible with the criteria in the existing literature on urban housing sustainability and revealed that there are significant differences from the evaluations of LEED's indicators. Ferreira et al. (2023) stated that the focal points of the evaluation systems are different. LEED and BREEAM certification systems focus on environmental sustainability, whereas DGNB certification system addresses environmental, social and economic dimensions equally. In line with these criticisms, it is also necessary to consider the limitation that since the evaluation in this study is based on LEED criteria, the findings may not fully reflect the complexity and multidimensionality of sustainability in different contexts.

2. Methods

In this study, data were collected using a questionnaire. A pilot study was conducted with five participants between February 23, 2023, and March 15, 2023, to assess the comprehensibility of the data collection tool and address any deficiencies. After identifying unclear statements, necessary adjustments were made, and the questionnaire was finalized. The survey was conducted between March 15, 2023, and May 1, 2023. A digital questionnaire prepared via Google Forms was administered face-to-face with participants using a tablet. A total of 70 people, who met the specified conditions, were selected by simple random sampling at the information office of the housing complex. The questionnaire is divided into two main

sections. The first section covers the demographic characteristics of respondents, such as gender, marital status, education level, and monthly income. The second section focuses on understanding what the LEED certificate of the HEP Istanbul Housing Project means to consumers, the factors they consider when purchasing a home, and how the features provided under the LEED certification influence their purchase decisions.

The study population consists of all homeowners who purchased a house in the HEP Istanbul Housing Project. Data were analyzed using IBM SPSS Statistics 22, focusing on the correlation between participants' demographic characteristics (gender, education level, income) and their familiarity with LEED certification, as well as the relationship between feeling environmentally responsible and the impact of LEED certification on purchasing decisions.

In developing the survey scale, the categories from the United States Green Building Council's (USGBC) LEED rating system were used. The LEED certification level varies according to the points achieved in different categories, with points divided into nine categories based on their impact and relevance (USGBC, 2023). Survey questions were based on the subcategories of five of these nine categories. The remaining four categories were excluded for the following reasons:

- The topics involve complex technical information that may be difficult for participants to grasp.
- The relevant categories apply to project phases prior to occupancy and are not relevant to participants.
- Information on these project aspects was not accessible.

Questions related to the 'Location and Transportation' category and their reflection on purchasing behavior included:

1. Did the availability of electric vehicle charging infrastructure in the HEP Istanbul Housing Project influence your decision to purchase a house?
2. Did the ease of access to public transportation (e.g., bus, metrobus) from the HEP Istanbul Housing Project influence your decision to purchase a house?
3. Did the presence of bicycle paths in the HEP Istanbul Housing Project influence your decision to purchase a house?
4. Did the environmental density of the site in the HEP Istanbul Housing Project influence your decision to purchase a house?

Questions related to the 'Sustainable Sites' category included:

1. Did the amount and design of children's playgrounds in the HEP Istanbul Housing Project influence your decision to purchase a house?
2. Did the landscape design to reduce the urban heat island effect influence your decision to purchase a house?

3. Did the presence of a green roof in the HEP Istanbul Housing Project influence your decision to purchase a house?
4. Did the amount and design of walking areas in the HEP Istanbul Housing Project influence your decision to purchase a house?
5. Did the high proportion of open spaces in the HEP Istanbul Housing Project influence your decision to purchase a house?
6. Did the rainwater recycling system in the HEP Istanbul Housing Project influence your decision to purchase a house?
7. Did the efforts to protect or create new habitats in the HEP Istanbul Housing Project influence your decision to purchase a house?

For the 'Water Efficiency' category, the following question was asked:

1. Did the use of water-saving products (e.g., faucets, shower systems, WC reservoir, siphon systems) in the HEP Istanbul Housing Project influence your decision to purchase a house?

Regarding the 'Materials and Resources' category, the following question was posed:

1. Did the use of local materials in the HEP Istanbul Housing Project influence your decision to purchase a house?

For the 'Indoor Environmental Quality' category, the following questions were asked:

1. Did the daylight and view capacity of the house you purchased in the HEP Istanbul Housing Project influence your decision to buy?
2. Did the window sizes and natural light capacity of the houses influence your decision to purchase?
3. Did the natural ventilation and air conditioning capacity of your residence influence your decision to purchase?

2.1. The HEP Istanbul housing project

The HEP Istanbul Housing Project was constructed in Esenyurt district of Istanbul between 2013-2017 and became one of the first LEED certified housing projects in Turkey. The reasons for choosing the HEP Istanbul as the sample are that it is a pioneering project in terms of LEED certification in Istanbul and that different LEED assessment certificates were used depending on the diversity of buildings in the project (Figures 1 – 3). The project offers a sustainable living space to its users with 1422 residences and various social facilities on an area of 56,000 m². The project received Gold certification in the LEED BD+C: Homesv3 - LEED 2008 category for 14 row houses and Silver certification for 11 high-rise blocks (LEED BD+C: New Constructionv3 - LEED 2009). These certificates are based on sustainability criteria such as energy efficiency, water saving, material utilisation and indoor quality.

The project has been designed in line with environmental and social sustainability goals. The layout of the blocks is designed to optimise natural light, wind and views. The low-rise residential buildings are equipped with green roofs and other amenities such as indoor and outdoor social areas, walking trails, sports facilities and children's playgrounds. In addition, the courtyards designed in the north-south direction aim to create air circulation and semi-private spaces.

The architectural design of the project was carried out by CM Architecture and Tekfen Real Estate acted as the main contractor (CM MİMARLIK, 2023). With its sustainability-oriented design and LEED certificates, HEP Istanbul is pioneering environmentally friendly housing projects.

3. Results

3.1. Demographic characteristics and income levels of participants

When analyzing the demographic characteristics of the consumers who participated in the survey, 24 participants (34,3%) were female, and 46 participants (65,7%) were male. In terms of marital status, 32 participants (45,7%) were single, divorced, or widowed, while 38 participants (54,3%) were married. Regarding education levels, 2 participants (2,9%) had completed secondary education, 18 (21,4%) had a high school education, 6 (8,6%) held an associate degree, 30 (42,9%) held a bachelor's degree, and 14 (20%) had a master's or doctorate degree. When analyzing income levels, it was found that two participants (2,9%) earned 10,000 TL or less, 24 participants (34,3%) earned between 10,000-20,000 TL, 22 participants (31,4%) earned between 20,000-40,000 TL, 11 participants (15,7%) earned between 40,000-50,000 TL, and 11 participants (15,7%) earned 50,000 TL or more. The results of the question 'How much do you agree with this statement? 'When I bought a house from the Hep Istanbul Housing Project, I paid attention to the fact that it was LEED certified' provide insightful data regarding the significance of LEED certification in consumer decision-making. Of the 68 respondents, a total of 41 people (60,3%) either strongly agreed or agreed with the statement, indicating that more than half of the buyers considered the LEED certification an important factor in their purchase decision. On the other hand, 27 respondents (39,7%) either disagreed or strongly disagreed, suggesting that for a substantial portion of the buyers, LEED certification was not a decisive factor (Figure 4). The data highlights a divided perception among buyers regarding the importance of LEED certification. While a majority of respondents valued the certification to some degree, a significant portion did not consider it a priority in their purchase decision. This could be attributed to several factors, such as a lack of awareness about LEED certification, the emphasis on other housing features (e.g., location, price, amenities), or insufficient promotion of the benefits of sustainable building practices.

3.2. LEED certificate related question answers

'The Location and Transportation category' of the LEED certification system aims to minimize environmental pollution resulting from the location of the project and reduce carbon emissions from transportation to this site. The following sub-criteria were evaluated to determine their impact on consumers' housing purchase decisions:

1. Availability of charging infrastructure for electric vehicles
2. Ease of access to public transportation (bus, metrobus, etc.)
3. Presence of bicycle usage areas
4. Environmental density of the site

Table 1 summarizes the responses for each criterion:

Table 1 reveals that ease of access to public transportation had the greatest impact on purchasing decisions, while charging infrastructure for electric vehicles had the least influence. The presence of bicycle facilities and the environmental density of the site were moderately impactful for most participants.

The provided Table 2 summarizes how various 'Sustainable Site Strategies' influenced the purchasing decisions of residents in the Hep Istanbul Housing Project. The survey responses were grouped based on how much impact each factor had, offering insight into the elements of sustainable site development that were most important to buyers.

While 24,3% of respondents felt that the playgrounds had no effect on their decision, a combined 75,7% found them either partially or highly impactful, indicating that recreational spaces for children are a key consideration for many buyers. Urban Heat Island Effect (Landscape Design) category saw a significant response, with 60% of respondents stating that landscape design aimed at reducing the urban heat island effect had a great impact on their decision. Only 8,6% indicated no effect, reflecting strong awareness and appreciation for this environmental measure. Despite their environmental benefits, green roofs had a limited impact on purchase decisions, with 28,6% of respondents stating no effect and only 11,4% indicating a great impact. This suggests that green roofs might not be widely understood or appreciated by the general public. A strong 57,2% of respondents stated that the design of walking areas had a great impact on their decision, highlighting the importance of accessible, well-designed open spaces in residential environments. Almost no respondents (1,4%) indicated no effect, underscoring the appeal of these spaces. The high proportion of open spaces within the project was influential, with 61,4% of respondents stating that this feature had a great impact on their decision. The positive response reflects the importance of having ample, accessible outdoor areas.

Criteria	No Effect at All (%)	Partially Impacted (%)	Had a Great Impact (%)	Total (%)
Availability of charging infrastructure for electric vehicles	44,2	42,9	12,9	100
Ease of access to public transportation (bus, metrobus, etc.)	71	20	72,9	100
Presence of bicycle usage areas	27,2	51,4	21,4	100
Environmental density of the site	14,3	571	28,6	100

Table 1: Distribution of the impact of location and transportation on purchase decision. (2023)

Criteria	No Effect at All (%)	Partially Impacted (%)	Had a Great Impact (%)	Total (%)
Amount and design of children's playgrounds in the Hep Istanbul Housing Project	24,3	41,4	34,3	100
Landscape design that reduces the urban heat island effect	8,6	40	51,4	100
Presence of a green roof in the HEP Istanbul Housing Project	28,6	60	11,4	100
Amount and design of the walking areas in the Hep Istanbul Housing Project	1,4	40	57,2	98,6 (1 unan-swered)
High proportion of open spaces in the HEP Istanbul Housing Project	71	31,4	61,4	100
Recycling of rainwater in the HEP Istanbul Housing Project	42,9	48,5	8,5	100
Efforts to protect existing habitat/create new habitat in the HEP Istanbul Housing Project	61,4	24,3	14,3	100

Table 2: Distribution of the impact of Sustainable Site Strategies on purchase decision. (2023)

Criteria	No Effect at All (%)	Partially Impacted (%)	Had a Great Impact (%)	Total (%)
Use of water-saving products (water-saving faucets, shower systems, WC reservoir, siphon systems, etc.) in Hep Istanbul Housing Project	15,7	58,6	25,7	100

Table 3: Distribution of the impact of Water Efficiency related works on purchase decision. (2023)

Rainwater recycling had less influence, with 42,9% stating no effect and only 8,5% considering it a key factor. This suggests that environmental practices like water recycling are not yet top priorities for many consumers, perhaps due to a lack of awareness. Efforts to protect or create habitats had the least impact on buyers' decisions, with 61,4% reporting no effect. This suggests that, while important from an environmental perspective, habitat protection is not yet a decisive factor for most homebuyers.

The table reveals that factors directly related to personal comfort and recreational opportunities, such as children's playgrounds, walking areas, and open spaces, had a stronger influence on purchase decisions than ecological measures like rainwater recycling or habitat protection. However, certain environmental strategies, like reducing the urban heat island effect through landscape design, also resonated with a significant portion of respondents. It is aimed to support efforts to reduce water consumption inside and outside the building, to use alternative water sources and to protect natural water resources. Once the prerequisites for the category are met, the practices that provide credit points for this category are: reduction of outdoor water use, reduction of indoor water use, use of cooling towers and water metering. The impact of 'Water Efficiency' on purchasing was tried to be measured. Table 3 shows the results of this category.

The majority of respondents (58,6%) indicate that the presence of water-saving products had a partial impact on their decision. This suggests that while these

features are important, they are not the sole deciding factor in purchasing decisions. A notable portion of respondents (25,7%) felt that water-saving products significantly influenced their decision. This indicates a strong preference for environmentally friendly features, reflecting a growing awareness and value placed on sustainability. A smaller percentage (15,7%) reported that these products had no effect on their decision. This group might prioritize other factors over water-saving technologies when making a purchase decision. Overall, the results show that while water-saving products are valued and do impact purchasing decisions, they are often considered alongside other factors. The significant proportion of respondents who view these products as having a great impact underscores their importance in meeting the growing demand for sustainable living options.

The 'Energy and Atmosphere category' aims to save energy, measure energy consumption and avoid negative impacts on global warming. Since this category includes technical information (renewable energy generation, green power and carbon balance, advanced testing and commissioning, optimization of energy performance, advanced energy metering, etc.), no questions related to this category were included in the questionnaire.

Regarding the 'Materials and Resources' category, the responses indicate that local materials used in the Hep Istanbul Housing Project have a moderate influence on purchasing decisions (Table 4).





Figure 2: View photo of the Hep Istanbul Housing Project (1). CM Mimarlık (2023)



Figure 3: View photo of the Hep Istanbul Housing Project (2). CM Mimarlik (2023)

Half of the respondents felt that the use of local materials had a partial impact on their decision, suggesting that while these materials are valued, they are not the primary factor for most buyers. A smaller portion of respondents (18,6%) found the use of local materials to be a significant factor in their purchase decision, highlighting a strong preference for locally sourced materials among some buyers. A substantial percentage (31,4%) reported that the use of local materials did not influence their decision, indicating that other factors may be more important to them. Overall, while local materials are appreciated, their impact on purchasing decisions is mixed, with many buyers considering them as just one of several factors.

'Indoor Air Quality category' aims to provide users with thermal, visual, acoustic, and lighting comfort, along with access to daylight and views. The criteria include improved indoor air quality, low-emission materials, air quality management during construction, thermal comfort, daylight access, quality landscape, and acoustic performance. To determine the impact of these factors on purchasing decisions, the following questions listed in Table 5 were asked:

Half of the respondents felt that the daylight and view capacity of the house had a significant impact on their decision to purchase, showing the importance of natural light and views in enhancing living conditions. Only a small percentage (5,7%) said it had no effect at all. Window Sizes/Natural Light Capacity factor had the strongest influence, with 58,6% of respondents stating that the window size and natural light capacity had a great impact on their decision. It underscores how critical natural light is for homebuyers, contributing significantly to comfort and well-being. Although important, natural ventilation and air conditioning had less of an impact compared to the other factors. While 31,5% found it crucial, a notable portion (25,9%) said it had no effect, indicating that some buyers may rely more on mechanical systems or consider other comfort aspects more important. Overall, the results show that natural light and views are significant factors in purchasing decisions, while ventilation and air conditioning play a somewhat lesser role for many buyers.

'The Innovation category' aims to encourage projects to achieve exceptional or innovative performance to benefit human and environmental health and equity.

Since no information on practices that incentivize innovative performance could be found within the scope of the project, no question on this criterion was included in the survey.

'The Regional Priority category' is intended to provide an incentive to obtain loans that address geographically specific environmental, social equity and public health priorities. The question on this criterion was not included in the questionnaire as it involves assessments at a higher scale.

4. Discussion and Conclusions

The findings from the Hep Istanbul Housing Project provide several important insights into consumer attitudes and decision-making factors related to sustainable building features and broader urban living considerations. According to the findings obtained within the scope of the study, the following conclusions were reached:

- It has been observed that there is a general lack of understanding of LEED certification among the consumers who purchased a house from the Hep Istanbul Housing Project. While 44,3% of the respondents had knowledge about LEED certification, 55,7% of them gave answers indicating that they did not know LEED certification. Although LEED certification is a well-recognized standard for buildings in various countries around the world, it has been observed that this level of recognition is still not reached in Turkey (Matisoff et al., 2014; Katcher-Dunne, 2016). The reason for this is estimated to be that the ratio of the number of certified buildings to the total number of buildings is still at very low levels.
- It has been observed that the respondents feel responsible for the environment. 82,8% of the participants stated that they take into account the environmental responsibility of the house they purchased. The averages of taking into account the environmental responsibility of the house they purchased do not differ according to gender, education level, and income. The rise in living standards has caused people to demand conditions suitable for a universal understanding of life.

Criteria	No Effect at All (%)	Partially Impacted (%)	Had a Great Impact (%)	Total (%)
The fact that the materials used in the Hep Istanbul Housing Project are local	31,4	50	18,6	100

Table 4: Distribution of the impact of Materials and Resources used in the Project on purchase decision. (2023)

Criteria	No Effect at All (%)	Partially Impacted (%)	Had a Great Impact (%)	Total (%)
Daylight and view capacity of the house you purchased from Hep Istanbul Housing Project	5,7	44,3	50	100
Window sizes/natural light capacity of the houses in Hep Istanbul Housing Project	5,7	35,7	58,6	100
Natural ventilation and air conditioning capacity of your residence in Hep Istanbul Housing Project	25,9	42,6	31,5	100

Table 5: Distribution of the impact of Indoor Air Quality works on purchase decision. (2023)

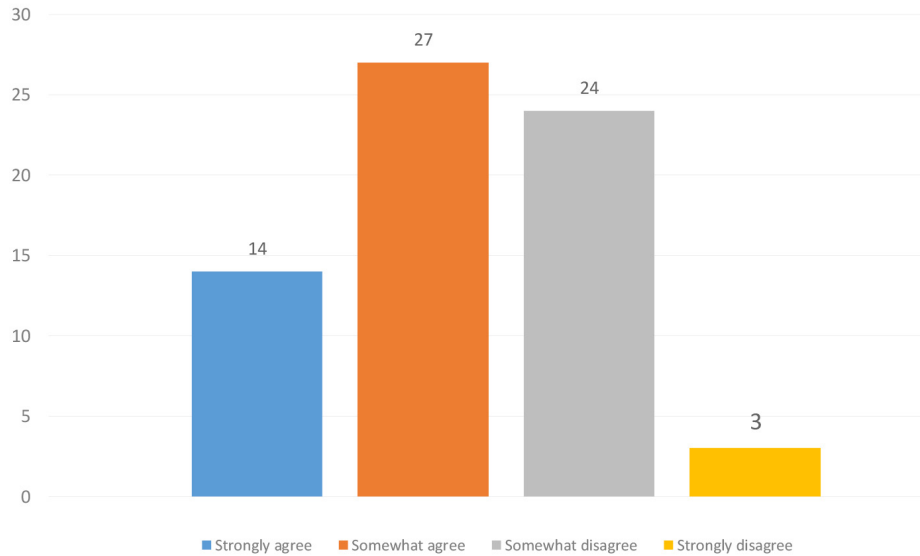


Figure 4: Evaluation of LEED certified status when purchasing a house from the Hep Istanbul Housing Project. CM Mimarlık (2023)

The production and use of consumption products in a way that does not cause environmental pollution has become a fundamental value. All elements affecting life have started to be considered in a universal dimension. Frequent expression of these in various environments has started to create environmental awareness in consumers.

- The respondents stated that they would pay attention to the environmental friendliness of the next house they will buy (with a high rate of 94,3%). In addition to the respondents who stated that they attach importance to environmental issues, a certain number of respondents stated that they would consider environmentalism for the next house they will buy. The averages of the answers given by the participants regarding the environmental responsibility of the next house they will buy do not differ according to gender, education level, and income. This answer increases the likelihood that people will behave in a way that focuses on environmental protection in the future. This shows that people should take their own consumption into consideration; otherwise, it has started to be understood that being aware of the problems experienced on the planet will not be enough to protect the planet.
- The rate of respondents who pay attention to the fact that the HEP Istanbul Housing Project has LEED certification (60,3%) is higher than the rate of those who do not pay attention (39,7%). When the answer to this question is compared with the question in which the respondents indicate their familiarity with LEED certification, it is seen that there is an inconsistency. Approximately 15% of

the respondents who stated that they were not familiar with LEED certification stated that they paid attention to this issue while purchasing a house from the Hep Istanbul Project.

Table 6 summarizes key findings of LEED-related factors influencing housing purchase decisions, highlighting their importance and implications for sustainable living and urban development.

This study has limitations that need to be addressed. First, this study focussed only on environmental motivations and did not address other potentially influential factors (e.g. aesthetic, social, economic or psychological factors). Another limitation of this study is that our survey did not include a direct question on energy efficiency at the building scale. Future research should aim to better understand the perceptions and preferences of consumers by addressing the issue of energy efficiency in more detail. Although sustainability practices such as the use of local materials and waste recycling are clearly stated in the Hep Istanbul Housing Project through the information board on the housing site entrance, it could not be determined to what extent the buyers recognise this information and base their purchase decisions on this information. This situation should be considered as a limitation in our study. Whilst research shows that access to daylight has a significant impact on well-being and energy efficiency, it should be recognised that this impact can vary depending on design elements such as window size. The fact that respondents place a high value on daylight does not necessarily mean that they prioritise sustainable features; this preference may be driven by other factors such as aesthetics, comfort or quality of life.

Factor	Key Findings	Implications
Natural Light and Views	Over 90% of respondents cited natural light and views as critical factors in purchasing decisions.	Reflects the prioritization of well-being and energy efficiency, aligning with sustainable living.
Landscape Design and Open Spaces	Nearly 93% of respondents valued open spaces and landscape design.	Highlights the demand for urban designs that improve quality of life and mitigate urban heat islands.
Habitat Protection and Rainwater Recycling	Low influence on purchasing decisions despite growing environmental consciousness.	Indicates a gap in public knowledge about the long-term benefits of these sustainability measures.
Walking Areas and Code playgrounds	Positive response to walking areas and children's Code Playgrounds.	Reflects increasing demand for community-centric and livable environments.
Access to Public Transportation	92.9% of respondents prioritized access to public transportation.	Underscores the need for well-integrated public transport systems to address urban sprawl and congestion.
Electric Vehicle (EV) Charging Infrastructure	Modest influence on purchasing decisions.	Reflects the early stage of EV adoption in Turkey; importance may grow with increased EV ownership.
Natural Ventilation	Preference for natural light over natural ventilation.	Suggests consumers prioritize immediate, perceptible benefits over less visible sustainability measures.
Use of Local Materials	Moderate importance placed on the use of local materials.	Indicates sustainability is a growing concern but not yet a primary decision-making factor.

Table 6: Key findings of LEED related factors influencing housing purchase decisions, their importance and implications. (2023)

5. Recommendations

Based on the study's findings, several recommendations are made for housing consumers and production companies. Consumers should be informed about sustainable housing practices, energy-efficient technologies, and eco-friendly materials to make better purchasing decisions. Investing in energy-efficient homes can lead to significant long-term cost savings by reducing utility bills, particularly in projects that incorporate solar panels and water-saving fixtures. Proximity to public transportation and amenities should be considered to minimize dependence on personal vehicles and reduce carbon footprints. Sustainable building materials not only provide cost benefits but also promote healthier, more durable living environments. Industry stakeholders should invest in research and development (R&D) to innovate and collaborate, addressing the evolving housing demands and seizing new opportunities. Additionally, further research is needed to understand the demographic, psychological, cultural, and economic factors that influence homebuyers' attitudes toward sustainability certifications and their willingness to invest in such homes. These steps will help build a more sustainable housing sector that benefits both the environment and the economy.

Conflict of Interest. The authors declare no conflict of interest.

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