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COMMUNITY PERSPECTIVES ON GREEN TRANSITION IN ALBANIA: A SOCIO-ECONOMIC SURVEY OF HOUSEHOLDS AND BUSINESSES IN PREFABRICATED BUILDINGS

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Abstract. This study aims to investigate the awareness, perceptions, and expectations of households and business communities regarding the green transition process in Albania. Although Albania is making efforts at the policy and institutional levels to transition towards a modern, climate-neutral, and resource-efficient economy, it is essential to understand the community's perspective on this process. The study examines the complex relationship between Albania's shift towards sustainability and adaptability, explicitly emphasising the overall awareness and attitudes towards this pivotal shift among households and business communities. Employing a comprehensive socio-economic survey targeting households and businesses occupying prefabricated buildings in three areas of Tirana, the research seeks to gauge the depth of awareness and readiness of these stakeholders regarding energy-efficient solutions. Central to the investigation is exploring perceptions and attitudes, including the willingness to invest in and pay for such solutions. Shedding light on these factors provides valuable insights into the socio-economic dynamics that shape Albania's path towards sustainability and resilience amid the imperatives of a green transition.

Keywords: Albania, green transition, community perceptions, energy efficiency.

Introduction

The transition to a greener and more resilient society is essential for addressing the dual challenges of climate change and socio-economic sustainability. While global efforts are centred on strategies, agendas, and action plans, the extent to which green transitions have permeated communities, shaping their understanding (or lack thereof) and willingness to act, remains limited and varied (Creutzig et al., 2018; OECD, 2023; Scheller et al., 2024). The European Green Deal targets climate neutrality by 2050 (EC, 2019), backed by a variety of fluid, interconnected and coordinated actions across different levels of governance (Armitage, 2008; Jordan et al., 2018; Hoppe & Miedema, 2020), frameworks (strategic, legal, regulatory, operational), and sectors (such as infrastructure, energy, industry, construction, transport, and others), as well as various actors for a just and inclusive transition (EC, 2019). The EU has engaged in 'green deal diplomacy' (EC, 2019, p. 20), inspiring and attracting other countries and regions to follow the green pathway, including those in the Western Balkans (WB). The WB countries – Albania, Bosnia and Herzegovina,

Kosovo, Montenegro, North Macedonia, and Serbia – joined this effort in 2020, with the signature of the Sofia Declaration on the Green Agenda for the Western Balkans (GAWB), under the auspices of the Berlin Process. The implementation of the Sofia Declaration on the GAWB is guided by the 'put words into actions' paradigm (RCC, 2021, p. 3), which includes measures outlined in the Action Plan 2021–2030. In this realm, the GAWB (and the Action Plan 2021–2030) aligns the region's efforts with EU ambitions, including Albania's commitments to the green transition.

Households and businesses have an impact on climate and environmental outcomes, through their daily decisions on how to travel to work or what to cook for dinner, as well as less frequent choices such as which heating system to adopt or which car to buy (EC, 2019; RCC, 2021; OECD, 2023). Creutzig et al. (2018), Popescu et al. (2022), and Sandor et al. (2025) argue that, despite growing public awareness of climate issues, barriers such as financial constraints, knowledge gaps, and motivational hurdles hinder the adoption of greener practices. The European Commission highlights that 'since it will bring substantial change, active public participation and confidence in the transition are paramount if policies are to work and be accepted' (EC, 2019, p. 2). Understanding the perceptions, attitudes, and support levels of households and businesses among stakeholders is crucial for designing inclusive and effective climate policies (Sandor et al., 2025). RCC (2021) recognises the role of citizens and businesses in the transformation process for the GAWB, as well as increased information and awareness on the green transition process across the WB countries, as a means to build trust and purpose. When people understand how their actions contribute to wider efforts in environmental protection and climate change, they are more likely to feel motivated to get involved and make meaningful changes in their daily lives. Households can contribute to lowering their environmental footprint by diversifying their energy sources, improving home insulation and energy efficiency, using collective transportation, and minimising waste generation through waste prevention, separation, and recycling practices. Similarly, businesses might opt for sustainable financing, engage in circular economy practices, prioritise reuse and recycling, and adopt sustainable practices.

The term 'green transition' is widely used in literature, yet there is no single, unified definition, given its multidisciplinary nature (Wang, 2015). Nacu and Jercan (2023), for example, define the green transition as a transformative process for the planet, people, and partnerships to achieve an environmentally friendly economy. The European Commission similarly frames the green transition as a shift away from fossil fuel dependence and resource-intensive practices towards a sustainable, low-carbon, and resource-efficient economy, enabled through technological innovation and systemic reforms (EC, 2019). It is a multifaceted concept that encompasses sectors such as energy, mobility, agriculture, and infrastructure, with a strong emphasis on justice and inclusivity –the 'leave no one behind' approach. The present study aligns with this broad vision, adopting it as a framework for examining Albania's path toward sustainability from the perspectives of two important categories of stakeholders: households and businesses.

Buildings account for about 40% of energy consumption in Europe, making energy efficiency a policy priority for reducing energy demand (leading to net savings and energy security), curbing GHG emissions (and lowering demand for fossil fuels), and contributing to climate change mitigation (EC, 2019; Vardopoulos et al., 2023). In EU member states, approximately 50 million consumers face challenges in keeping their homes adequately warm, while annual renovation works progress at an annual growth rate of 0.4 to 1.2% (EC, 2019). Therefore, the central role of energy efficiency in buildings (both private and public) is recognised in the EU's energy and climate strategic frameworks. The WBGA (and the Action Plan 2021–2030) prioritise energy efficiency and improvement in all sectors under the Climate, Energy, and Mobility Pillar also highlighting 'support private and public buildings renovation schemes, secure appropriate financing and full

enforcement of the Energy Performance of Building Directive (adapted under the Energy Community framework)' (RCC, 2020, p.2). The GAWB is backed by substantial EU funding, tailored to facilitate the region's EU integration process (started in the early 1990s) in tandem with environmental and economic transformation (in particular, Chapter 27 – Environment and Climate Change). Energy transitions are not merely technical processes, yet involve socio-spatial transformations, as argued by Shove and Walker (2010), Pasqualetti (2011), Bridge et al. (2013), and Caragliu and Graziano (2022). Sustainability transitions encompass not only technologies but also everyday practices and routines according to Shove and Walker (2010); energy transitions are defined by Bridge et al. (2013) and Caragliu and Graziano (2022) as geographically constituted processes that offer different pathways with often varying transformative effects; while Pasqualetti (2011) argued for the important role of social barriers and inclusiveness in planning, as a means for acceptance and softening public resistance.

Case context: Prefabricated buildings in Tirana, between legacy and challenges

The WB countries have aligned themselves with the EU Green Deal and committed to reaching climate neutrality by 2050. The WBGA (and the Action Plan 2021–2030) lay out 58 measures along five pillars (and seven roadmaps) including: 1) climate, energy and mobility; 2) circular economy; 3) de-pollution (air, water, and soil); and 5) sustainable agriculture and food systems; 5) biodiversity, and ecosystem conservation. Implementation of the commitments is progressing at varying paces in the region. Figure 1 illustrates an average progress of 43% towards a green transition in the WB (mostly, measures related to the legal and regulatory framework), with varying progress across WB economies according to Djatkov (2024). Progress in Pillar 1. Climate, energy, and mobility accounted for 49.7%, with the energy roadmap advancing at a faster pace than the others (registering 67.7%), indicating strong momentum in the energy sector. Within the region, Albania has distinguished itself for its faster pace of advancement in energy transition, including advancements in renewable energy targets and the implementation of energy-saving measures for the public sector and households (Kamberi et al., 2022; Djatkov, 2024). The fulfilment of these commitments goes hand in hand with Albania's EU integration process, a long-lasting journey that began in the early 1990s.

In Albania, as part of the push towards a green transition, energy efficiency in the building sector stands out as both a critical challenge and an opportunity (Kamberi et al., 2022). The country has enacted the National Energy Strategy 2018–2030, the National Energy Efficiency Action Plan (NEEAP), laws on energy efficiency and energy performance in buildings according the Parliament of Albania (2016) targeting a 15% reduction of the final energy demand by 2030 on the way to net-zero emissions by 2050 (WB, 2024). Achieving these goals requires addressing the existing heterogeneous building stock (Veleshnja & Rashani, 2017; Yunitsyna & Sadrija, 2023). A particular subset of the existing building stock, where the study narrows in scope, is the prefabricated multifamily apartment buildings constructed during the communist era (pre-1990) in the capital of Albania (Tirana). Prefabricated buildings (up to six storeys) were an immediate response to the increased urban housing demand faced in the country between the 1970s and early 1990s (Aliaj, 1999) and a source of employment (Veleshnja & Rashani, 2017), allowing for quick and large-scale construction. This typology of multifamily buildings posted significant cost and time advantages due to the industrialisation of construction parts (economies of scale and a limited number of pre-

fabricated elements) through pre-prepared concrete panels in a dedicated prefabrication plant in the outskirts of the city of Tirana. These blocks were transported, and the building was assembled more quickly than the conventional construction model. Prioritising quantity, the quality of these buildings was limited and deteriorated over time (Misja & Misja, 2004). The prefabricated buildings stock is estimated at 12,500 units, representing about 4.75% of the total number of housing units in Tirana (Islami & Veizaj, 2014), and accommodating about 6% of Tirana's population.

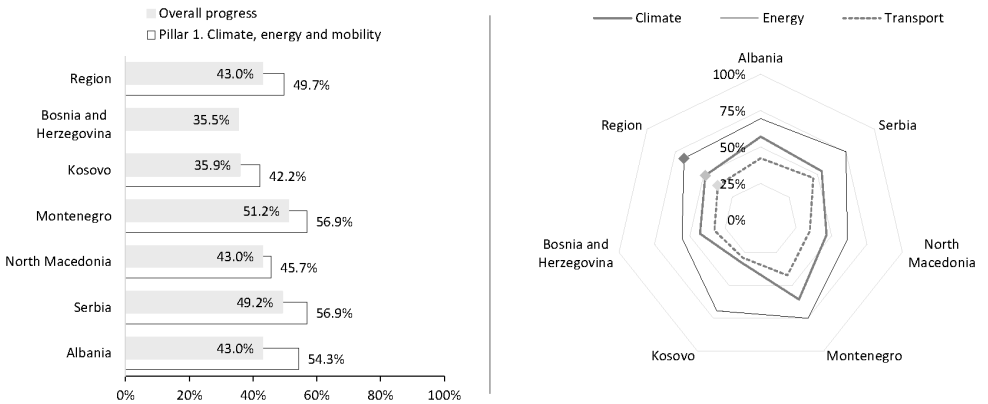

Figure 1. WB economies progress towards green transition
Source: authors' processing based on data from Djatkov (2024).

The decades-old prefabricated buildings category is perceived as of inferior quality, failing to meet today's energy performance standards. Guri et al. (2023) point out that, since their construction, only a few sporadic interventions have been carried out to improve thermal insulation for this category of buildings over the last few years, with poor thermal performance results (the first direct legislation on energy consumption introduced in 2005 according to the Parliament of Albania (2005)). Energy inefficiency makes them key targets for immediate retrofitting interventions to improve living and comfort conditions (Misja & Misja, 2004; Islami & Veizaj, 2014; Murataj et al., 2018).

Amid the discussion on the green transition, there is a renewed concern about the life cycle of prefabricated buildings. Policy makers and inhabiting communities face a fundamental dilemma: whether to upgrade these ageing structures or demolish and replace them. As Bertolazzi et al. (2019) argue, the upgrade approach is preferable to demolition. On the one hand, prefabricated buildings often fail to meet today's energy efficiency requirements and standards, and residents of these buildings frequently lack the financial means to invest in significant upgrades (Murataj et al., 2018). That makes these buildings highly vulnerable to neglect or demolition, a risk accentuated by the damages caused by the devastating earthquakes of September and November 2019 (Halla, 2023), as well as the intense (often investor-driven) construction activity in Tirana over the last decade (Co-PLAN, 2022). The substitution of prefabricated buildings with new multi-storey residential units is occurring relatively rapidly in Tirana's inner city and its suburbs. On the other hand, the rebuilding anew approach neglects the social dimension of the problem. Aside from technical construction issues (decay, energy performance, structural safety), which may suggest demolishing and rebuilding, there are social aspects such as place attachment (Manahasa & Özsoy, 2017; Nientied et al., 2019) and community cohesion (Bertolazzi et al., 2019), arguing for renovation over replacement. Whatever the green transition strategy for these buildings,

it must strike a balance between engineering considerations and the well-being and preferences of the occupants (residents living and working in these premises). Indeed, an effective green transition requires the engagement of communities in their dual role as both net beneficiaries and active agents of change (Moore et al., 2024). A lack of public support, however, prevents the effective implementation of climate-related policies (Drews & Den Bergh, 2015). Whereas policies and instruments perceived as fair, inclusive, and non-intrusive tend to garner higher public support (Huber et al., 2020). Therefore, the future of prefabricated buildings is not only a technical concern, but also a strong socio-economic concern: their legacy hinges on public support and the inclusion of community perspectives into decision-making.

Despite the pressure for redevelopment, prefabricated building stock remains a significant component of Tirana's housing stock, and its thermal performance will continue to influence energy consumption demand in the foreseeable future. Acknowledging their importance, local authorities, such as the Municipality of Tirana, have explored joint investment schemes with residents to retrofit the façades of buildings, thereby improving their energy performance Municipality of Tirana (2019). On the one hand, there is some public support for improving the energy and comfort performance of residential buildings, and several studies have assessed the energy performance of prefabricated buildings in Albania (Murataj et al., 2018; Guri et al., 2023; Yunitsyna & Sadrija, 2023). On the other hand, no prior study has specifically examined how households and businesses in prefabricated buildings perceive green transitions, to what extent they are informed, and whether they would be willing to support and co-finance any improvements.

This exploratory study aims to fill this gap, investigating and improving the understanding of households' and businesses' perceptions regarding the green transition in the context of prefabricated buildings in Tirana. Specifically, the study seeks to answer the following research question: 1) what shapes communities' attitudes towards the green transition in prefabricated buildings?; 2) are communities aware of and informed about green transitions? and 3) to what extent do households and businesses support the green transition, and are they willing to co-finance upgrades in their prefabricated buildings?

Methodology

This study employs a mixed-methods approach, integrating qualitative, observational, and quantitative survey techniques to investigate perceptions of households and businesses regarding the green transition in Tirana.[1] The methodological design allows for triangulation of findings, thereby enhancing the reliability of the obtained results through multiple data sources. The research focused on three post-communist urban neighbourhoods in Tirana: Ali Demi (9 buildings), 21 Dhjetori (11 buildings), and the Former Technological School (Ish-Teknologjiku, 7 buildings), comprising a total of 27 prefabricated buildings (Fig. 2). The targeted buildings in the study areas are emblematic of Albania's prefabricated housing model, constructed around the 1970s in response to Albania's housing problems. Information availability on prefabricated buildings in Tirana, accessibility, the presence of a critical mass of potential respondents, and the socio-economic profile of the neighbourhood were among the factors considered in selecting the targeted areas.

[1] The design and implementation of the survey were funded by the Horizon Europe Programme HORIZON-WIDERA-2021-ACCESS-02-01 Twinning Western Balkans 'GreenFORCE – Foster Research Excellence for Green Transition in the Western Balkans'. In this research paper, we re-use the data, which aligns with the project's and EU's data management policy (to share and disseminate the information produced). The detailed database and metadata are available in Toska (2024).

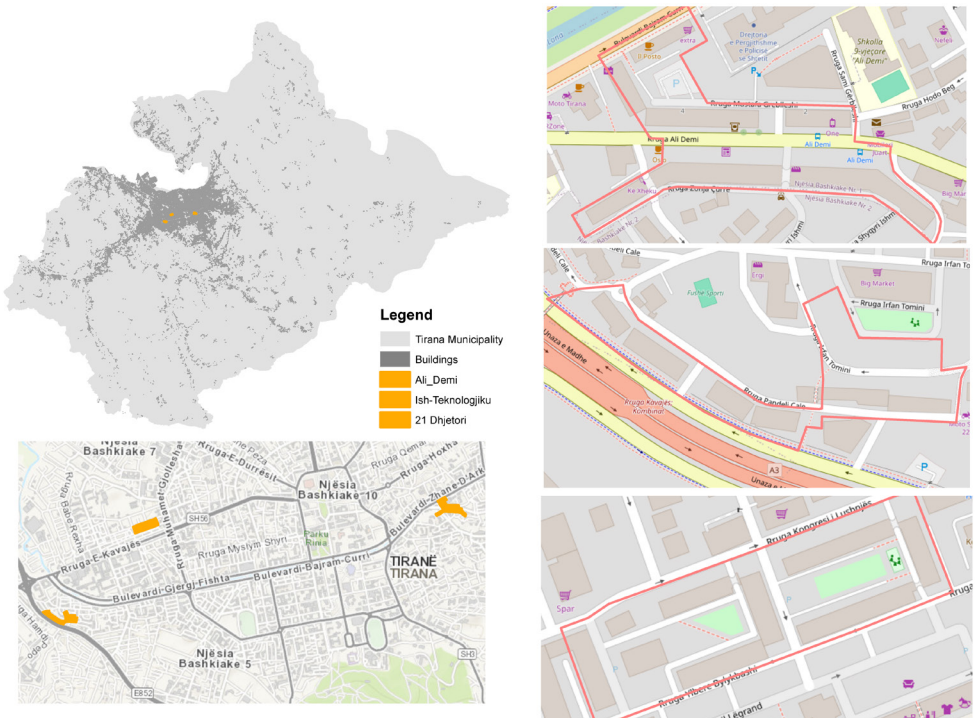

Figure 2. The city and the study area
Source: authors' processing.

The literature review provided the foundation for designing the structured questionnaire, drawing on existing theoretical and empirical insights into communities' perceptions of green transition and resilience (Islami & Veizaj, 2014; EC, 2023; Moore et al., 2024). An observational analysis was conducted in parallel to observe the social behaviour and interrelations of households and businesses with the territory and with each other in their natural settings. Findings from the literature review and observations informed the development and contextualisation of the survey instrument, ensuring its relevance to the local settings and the lived experiences of the respondents. Surveys are considered practical tools for capturing public perceptions (Kavouras et al., 2022); therefore, they are a suitable tool to address the study's research questions.

The study's targeted population consisted of all households (324 units) and businesses (56 units) residing in the targeted areas. The designated respondents were the heads of families and business representatives (18 years old and above). The structured questionnaires are the primary data collection tools, administered through direct face-to-face interviews. The household questionnaire contained 47 questions of different typologies (40 questions for businesses), including symmetrical and non-symmetrical Likert scales, as well as dichotomous and open-ended questions, organised into five thematic sections. Figure 3 illustrates the structure of the questionnaires employed in this study.

The first section of the questionnaire included twelve questions (eight for businesses) to explore the respondents' socio-demographic profiles (e.g. age, gender, income level, education, tenure status). The second section included fifteen questions (fourteen for businesses) based on the description of the premises (apartment, commercial space in use). The eight questions

in Section Three explore the different energy sources and consumption patterns in residential and commercial premises. The fourth section of the questionnaire includes five questions that aim to highlight the overall quality of the living area (the neighbourhood). Questions in the fifth section of the questionnaire aim to capture knowledge levels on green transition, as well as agreement and willingness to finance and co-finance a set of predefined interventions.

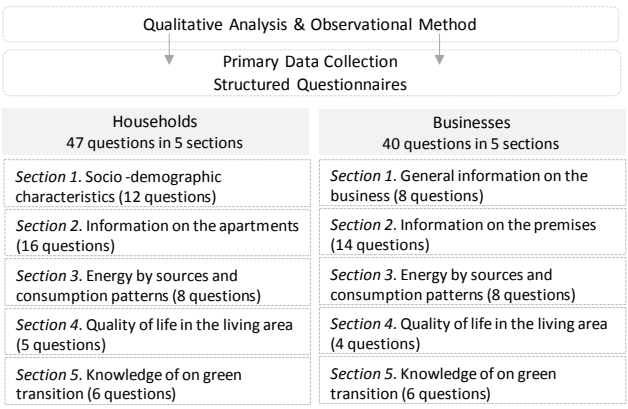

Figure 3. Research approach and questionnaire
Source: authors' processing.

Before implementation, the household and business questionnaires were tested with a limited number of observations and revised accordingly to ensure a correct understanding of the questions and statements included. The test questionnaires are not included in the analysis. The survey was fielded simultaneously in all targeted areas from May to June 2024. The interviews were conducted by a well-trained team of eight interviewers (organised in four two-person teams) using a paper-and-pencil system. The interviewers' team was adequately trained to administer the questionnaires (including clarification of concepts) and the interviewing process for consistent delivery. Three interview attempts were planned, and interviews were scheduled to ensure the maximisation of response probability. If, after three attempts, the interview was not conducted (due to the respondent not being present, no scheduled time, or no response), the household or business is classified as having no response. In cases where interviews were not fully completed (i.e., questionnaires were completed at less than 80%), they were excluded from the results and analysis. Information from the hard-copy questionnaires was digitised, cleaned, coded, and processed using IBM SPSS Statistical Software. The analysis primarily employed descriptive statistics, such as frequencies, means, and net balances (OECD, 2003)[2], based on the typology of the question.

Results

The overall findings of the household and business surveys are presented separately in the following subsections. The response rate in the household survey was 42%, with 136 valid questionnaires collected out of 324 household units preliminarily identified (Table 1). In the case of businesses,

[2] Net balances are calculated as the difference between positive and negative percentage answers, expressed in percentage points, and range from -100 to 100. The maximum value of the net balance is 100 percentage points (meaning all answers are positive) and the minimum value of the net balance is -100 (meaning all answers are negative).

the response rate was relatively low (30%), representing only businesses operating in the Ali Demi area. From the observational analysis and information received during the interviews, the relatively low response rate is primarily determined by the presence of vacant apartments in the case of households and the refusal to participate and collaborate from both categories. Nevertheless, the household survey response rate provides adequate information to address the research objectives. Due to the limited geographic scope (encompassing only one of the targeted areas), the findings from the business survey are presented in summary form only.

Table 1. Response rate, households

Respondents	Valid	Not valid, and no response	Total	Response rate
Households				
21 Dhjetori	57	84	141	40%
Ali Demi	48	114	162	30%
Shkolla Ish-Teknologjikel	31	12	43	72%
Total	136	188	324	42%
Businesses				
Total	17	39	56	30%

Source: authors' processing.

Households

The socio-demographic profile of the respondents

The socio-demographic characteristics are widely acknowledged as influential factors in shaping public attitudes, preferences, and stakeholder engagement in environmental and climate-related initiatives (EC, 2019; Thomas et al., 2022). In the present study, the majority of survey respondents were women (65%), married (74%), and had an average age of 59 years (Table 2). Age distribution of respondents is diverse, with a relatively higher representation in the 45–69 year age group (46%) and a well-educated population (53% holding a university degree). Regarding economic status, the surveyed households predominantly fall within mid-to-low household income categories. Specifically, 36% of the respondents report a monthly income of up to 75,000 ALL (approximately 750 Euros), and only 21% of respondents report a household monthly income above 100,000 ALL (approximately 1,000 Euros). The primary source of household income derives from salaries, predominantly from the private sector (including self-employed individuals and those employed in private companies). Additionally, about 30% of respondents are retired, earning a living on pension income and remittances from abroad.

Tirana is the origin city for 63% of respondents, while 38% affirm moving to the city from other parts of Albania (including Vlorë, Saranë, Përmet, Berat, etc.). More than 60% of the respondents affirm that they have been living in Tirana for more than 30 years. Nevertheless, the multifamily prefabricated building accommodates a mix of new residents (rented apartments) and long-term residents. Most households affirm ownership of the apartment (74%) and have an average family size of up to 4 members. The average duration of residence is 19 years (with a minimum of 1 and a maximum of 50 years), whereas 38% of respondents affirm a duration of stay in the apartment of up to 10 years and about 41% ranging from 21 to 40 years. The introduction questions related to the origin and duration of stay in the apartment and the city of Tirana provide information on the population composition in the area. Native and longer-term inhabitants

might develop a place attachment to the neighbourhood (Nientied et al., 2019) and an enhanced willingness to co-finance and collaborate on financing green transition interventions.

Table 2. Socio-demographic characteristics of respondents (frequencies)

Gender		Origin	
Men	35%	Tirana	63%
Woman	65%	Other	38%
Marital status		Status of tenure over apartment	
Single	15%	Owned	74%
Married	74%	Rented	26%
Divorced	4%	Legalisation process	0%
Other	7%	Other	0%
Age group		Number of persons within the household	
18-29 years old	13%	up to 2 persons	44%
30-44 years old	23%	3 persons	18%
45-69 years old	46%	4 persons	23%
+70 years old	19%	+5 persons	15%
Education attainment		Duration of stay in the apartment	
No	1%	up to 10 years	38%
Junior high	8%	11-20 years	20%
High school diploma or eq	35%	21-30 years	21%
University degree	53%	31-40 years	17%
Post	2%	+41 years	4%
Household monthly income		How long have you been living in Tirana?	
Up to 50,000 ALL	18%	up to 10 years	17%
50,001-75,000 ALL	18%	11-20 years	6%
75,001-100,000 ALL	26%	21-30 years	14%
+100,001 ALL	21%	31-40 years	22%
Refuse	18%	+41 years	40%

Source: authors' processing.

General information and apartment attributes

Alongside observational analysis of the physical buildings in the study areas, the questionnaire included a set of questions to inform about the characteristics of the apartments. The average apartment size is 71 m^2, with 46% of the 2+1 typology, 57% of the 3+1 typology, and 26% of the 1+1 typology. About 59% of respondents affirm that they have renovated their apartments over the last five years, with an average expenditure of approximately 472,053 ALL (approximately 4,700 Euros). Most of the expenses are absorbed in the renovation of the external façade of the building, hydraulic installations, terrace isolation, and other internal adjustments to the apartment. In addition, living in these apartments requires some short-term maintenance expenses amounting to about 47,890 ALL (about 470 Euros), mainly related to internal adjustments (boilers, painting, doors, electric and hydraulic glitches). Based on respondents' affirmations, apartments have good exposure to solar lighting (6.1 hours per day on average), while there are significant concerns about street noises, dust levels and thermal loss. Apartments have the most common electric appliances (TV set, heater, stove, oven, refrigerator, air conditioner, washing machine, vacuum cleaner, boiler). As expected, fewer than 20% of respondents use gas heaters and stoves in their apartments, and almost half have adopted LED lighting. Most respondents affirm that they have not equipped their apartments with radiators (90%), solar panels (99%), or central heating systems (98%).

Respondents were presented with statements about the apartment, its quality, and the possibility of exchanging it for a new one in the same location or elsewhere (Fig. 4). The results show that the majority of respondents strongly disagree on considering the apartment of an inferior quality (net balance -82 pp), on considering it not livable (net balance -64%) and on the possibility of exchanging it for a new one in another location (net balance -61 pp) and would not move to another apartment (net balance -36 pp). These results may suggest a strong attachment to the place they live, particularly those of a longer duration. Therefore, most respondents find the apartment livable (net balance +66 pp) and recognise the need for investment to improve its quality (net balance +76 pp).

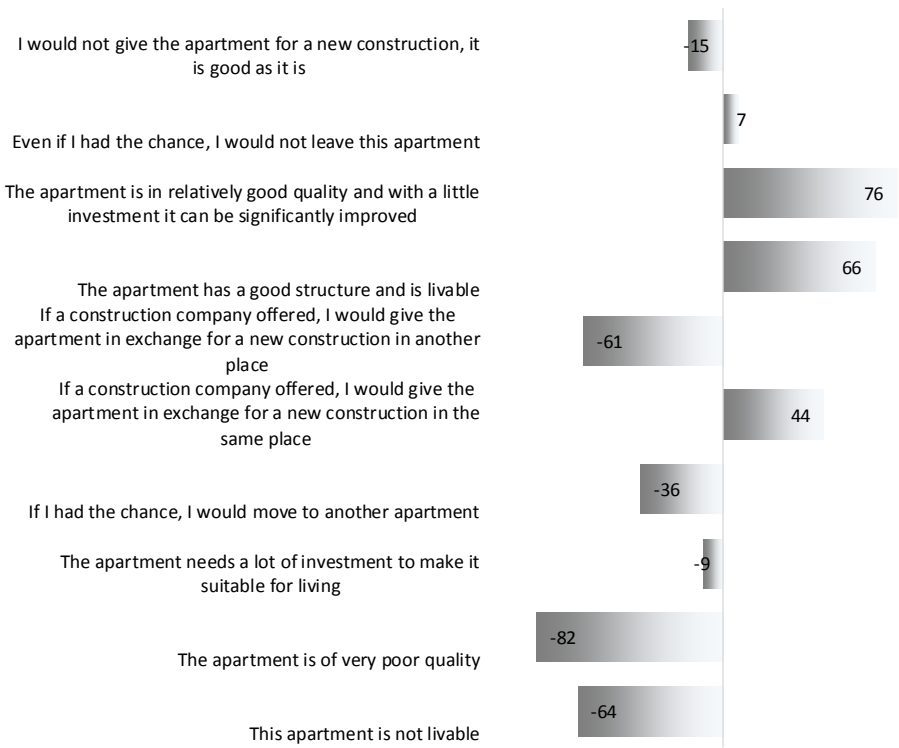

Figure 4. Agreement on statements for the apartment (net balances in pp)
Source: authors' processing.

Table 3. Assessment of selling and renting prices of apartment and in general in the are

Indicator		Area in general	Your apartment
Selling prices (ALL per m^2)	Minimum	70,000	70,000
	Maximum	200,000	170,000
	Average	121,859	107,254
Renting prices (ALL per unit)	Minimum	20,000	20,000
	Maximum	70,000	70,000
	Average	46,618	42,809

Source: authors' processing.

Reluctance to move to another location or exchange the existing apartment is assessed to be driven by an additional factor, alongside place attachment, the real estate price developments in Tirana. Rapid urbanisation of Tirana (formal and informal) has increased housing demand, pushing up sale and rent prices (Koprencka et al., 2018; Lubonja & Shehu, 2022; Kraja, 2024) and causing affordability (Kraja, 2024) and gentrification problems (Morea et al., 2025). Based on respondents' assessments, the average selling price of their apartment is about 12% lower than the average selling price in the area, and the maximum selling price of the apartment is about 15% lower than the average selling price in the area (Table 3). Differences in renting apartment prices are lower, which, on average, stand about 8% below the area's. Price differences may reflect the need for investments in these prefabricated apartments and their adaptation to today's standards, particularly in the case of selling prices.

While being considered essential to improve living standards in the prefabricated building blocks, investments are limited for several reasons. Most low- to mid-income households report a lack of collaboration in maintenance work and the allocation of resources for building rehabilitation (Fig. 5). The most common collaborations and co-financings of maintenance works involve painting shared areas and maintaining water tanks and terraces. However, such collaboration and co-financing are mostly informal since the residents have not appointed a condominium administrator. Collaboration and co-financing of basement reuse, maintenance of surrounding spaces, and façade insulation works are aspects at the lowest levels, based on respondents' assessment.

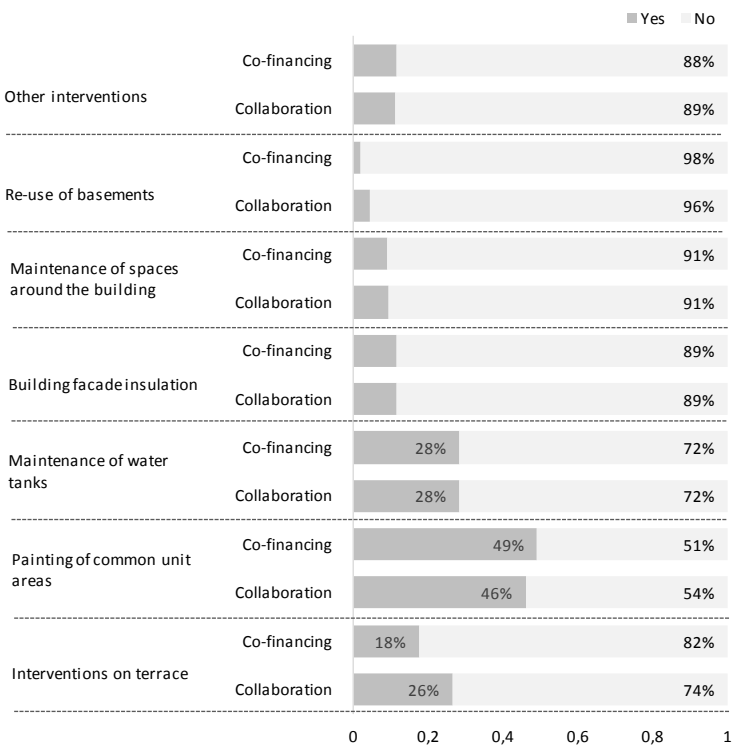

Figure 5. Collaboration and co-financing of interventions with other neighbours
Source: authors' processing.

Perceived quality of the targeted areas

Perceived as a metropolitan city with rapid urbanisation and a vast supply of job opportunities, Tirana attracts people from all other cities and regions of Albania. Tirana has a population of about 598,176 (INSTAT, 2025), which is considered a primary driver of development in the real estate market, among other factors. While thousands of square meters are added to the current stock of housing (Goler & Doka, 2020; Co-PLAN, 2022), public services provision, environmental performance, and the quality of neighbourhoods do not follow the same trend (Morea et al., 2025).

Most respondents assess the quality of life in the targeted areas as good (49%), 21% consider it average, while 19% consider it poor (Fig.6). The presence of educational infrastructure (nurseries, kindergartens and schools), perceived safety, access to roads, road infrastructure, and public transport are the most effective public services in the targeted areas. On the positive side, but to a lesser extent, respondents have positive perceptions of public lighting, street cleaning and waste management. The neighbourhood's quality and performance present accentuated deficiencies in green areas, air quality, cultural activities, and other aspects, such as parks, parking, and sports facilities.

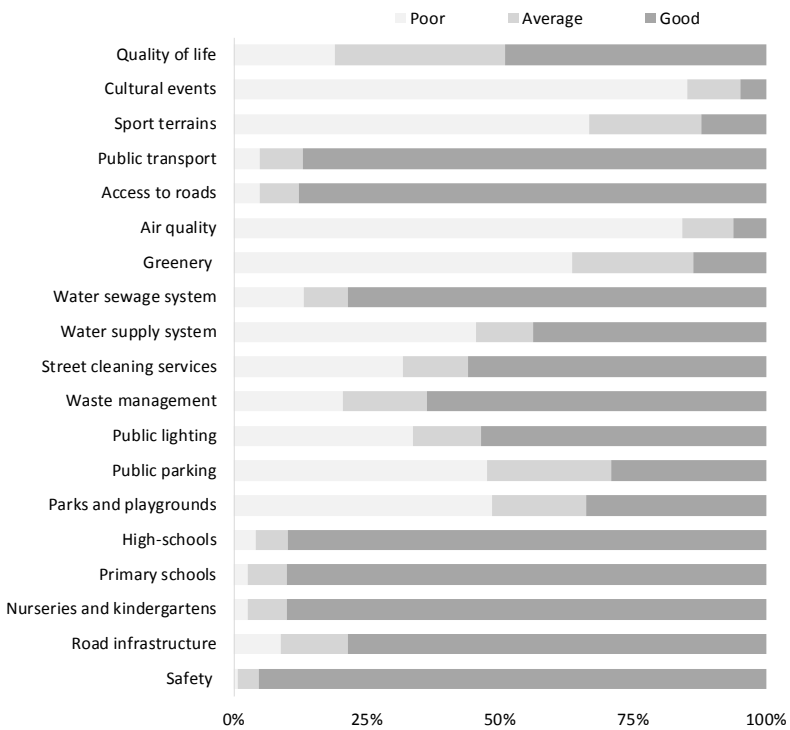

Figure 6. Services in the area and quality of life
Source: authors' processing.

There are mixed perceptions about the neighbourhood's environmental performance (Fig. 7). Respondents broadly agree regarding sunlight exposure in public spaces (net balance +40 pp) and the shape of the building blocks, which are protected from weather conditions (net balance +14 pp). However, significant concerns exist regarding greenery, air quality, noise pollution, biodiversity, thermal comfort, and natural ambience.

Based on the quality of life and environmental performance of the neighbourhoods, 12% of the respondents affirm that they would intend to move to another neighbourhood if the opportunity were presented, while 24% would not leave. Many respondents are uncertain about whether to leave or stay if opportunities arise. Financial constraints, emotional ties and neighbour relations might be at the basis of the uncertainty surrounding such a decision.

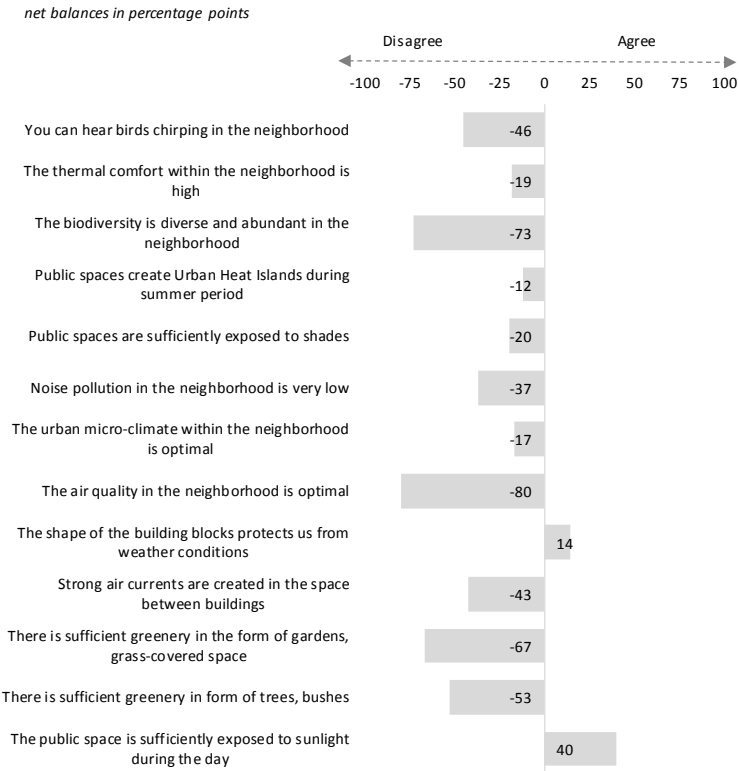

Figure 7. Environmental performance of the neighbourhood (net balances in pp)
Source: authors' processing.

Energy sources and consumption patterns

Albania's primary energy source is hydroelectric power, which accounts for about 95% of total electricity production (Fig. 8). The country's gas supply is limited and not integrated into regional or EU networks.[3] Based on this country's energy mix, respondents affirm that electric energy is the primary energy source in their households for lighting, cooking, heating, cooling, and hot water. To a lesser extent, households use gas for cooking (20%) and heating (7%). The use of gas for heating and cooking purposes has decreased over the years compared to the level highlighted in Islami and Veizaj (2014) due to safety concerns and rising gas prices. The limited use of gas as an energy source is fundamentally related to safety concerns (it is sold in containers and lacks a comprehensive supply network).

[3] Nevertheless, the strategic policy is to diversify the energy mix and reduce dependence on hydropower (especially in dry seasons). An initiative worth mentioning is related to the Gas Master Plan and the Trans-Adriatic Pipeline (TAP).

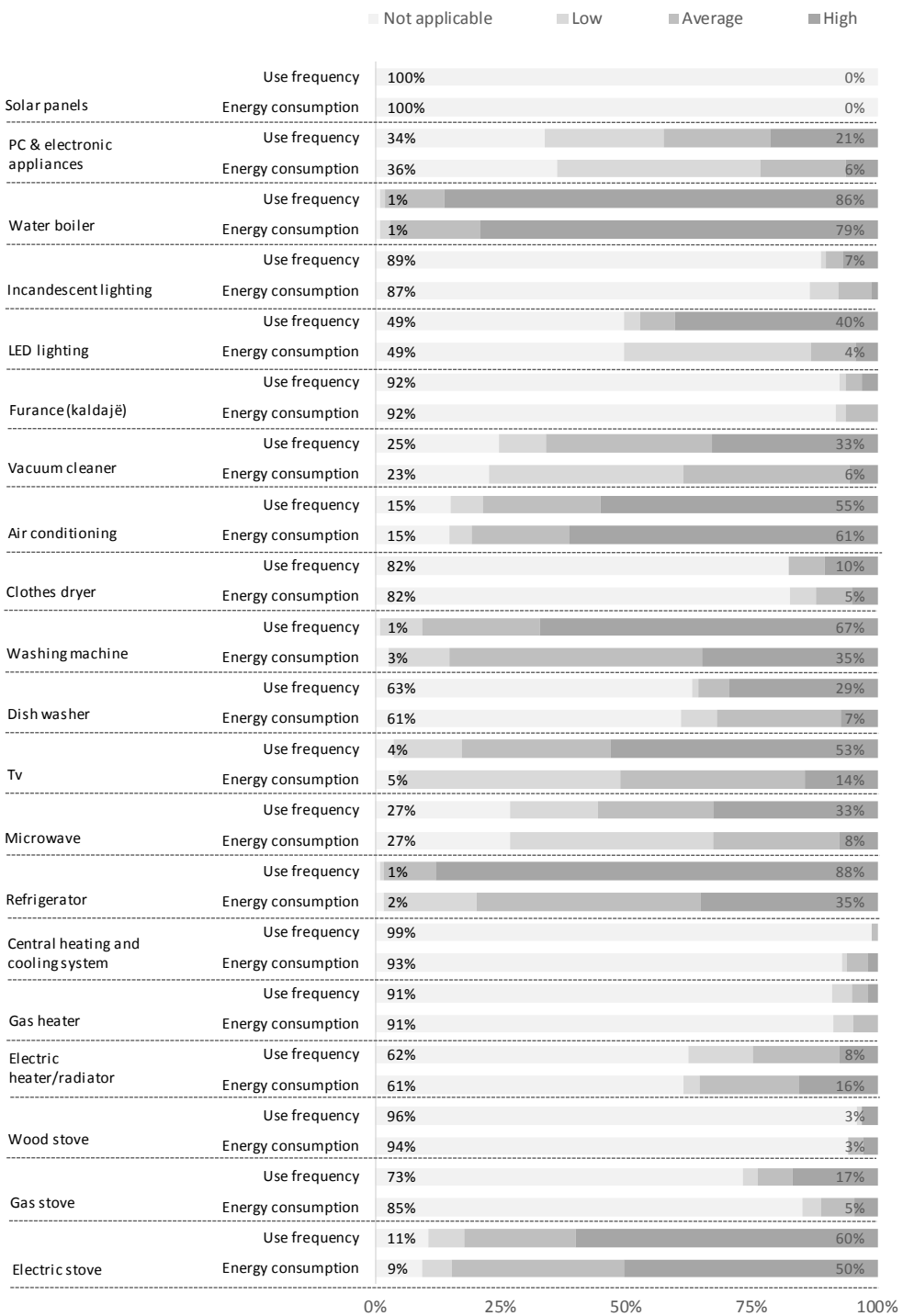

Figure 8. Use frequency and energy consumption of appliances
Source: authors' processing.

Higher energy consumption is primarily associated with appliances used frequently, such as washing machines, water boilers, electric stoves, and air conditioning units. Households in the survey do not have solar panels installed, wood stoves, central heating and cooling systems, or gas heaters, which are almost rarely used (less frequent use and low energy consumption). In particular, the frequency of use of electrical energy-based appliances and their consumption patterns directly affect the monthly energy bill (Table 4). On average, the monthly energy bill accounts for about 4,484 ALL (about 44 Euros) in warm seasons and about 7,198 ALL (about 71 Euros) in the colder seasons.

Table 4. Household electricity bill

Warm season (spring, summer)	No of observations	113
	Minimum	2,000 ALL/month
	Maximum	23,000 ALL/month
	Average	4,484 ALL/month
Cold season (winter, autumn)	No of observations	112
	Minimum	2,500 ALL/month
	Maximum	65,000 ALL/month
	Average	7,198 ALL/month

Source: authors' processing.

Between the warm and cold seasons, there is a 61% increase in electricity consumption, likely due to increased heating needs. The deviation from the average of the minimum and maximum values of the energy bill is higher in the colder seasons, indicating greater variability in the energy bill during these periods and differing consumption patterns. Based on respondents' affirmations, the increased value of the energy bill is a combination of higher electricity consumption (due to more appliances relying on electric energy) and increased prices.[4]

Energy costs increasingly burden households' budgets, and respondents affirm that they seek energy-saving solutions to fulfil their needs. Respondents are knowledgeable about energy-efficient appliances and solutions (about 82% of respondents) and are largely confident in the effectiveness of their energy-saving measures (Fig. 9). However, respondents are less aware of specific solutions, such as internal insulation, energy-efficient electronic appliances, and, notably, green roofs (only 54% of respondents are aware of or have knowledge about this solution). While being broadly aware, there is a significant difference in the actual use or adoption of these energy-efficient appliances and solutions. About 62% of respondents affirm adopting energy-efficient air conditioning, lighting, and cooking appliances (those assessed with the highest use frequency and energy consumption patterns). Solar panels, green roofs, façade insulation, and internal and terrace insu

[4] In 2015, the energy price increased from 8.9 ALL + VAT to 9.5 ALL + VAT (ERE, 2024). Based on the international market dynamics, the most recent increase in energy prices occurred in October 2022. A new two-level tariff plan was introduced: for consumption up to 800 kWh per month, the energy price remained at 11.4 ALL (9.5 ALL + VAT), and consumption above the threshold of 800 kWh is charged at a higher rate of 50.4 ALL (42.0 ALL + VAT). Nevertheless, such an increase was effectively suspended in November 2022, and the energy price for households remained at 9.5 ALL + VAT (same since 2015).

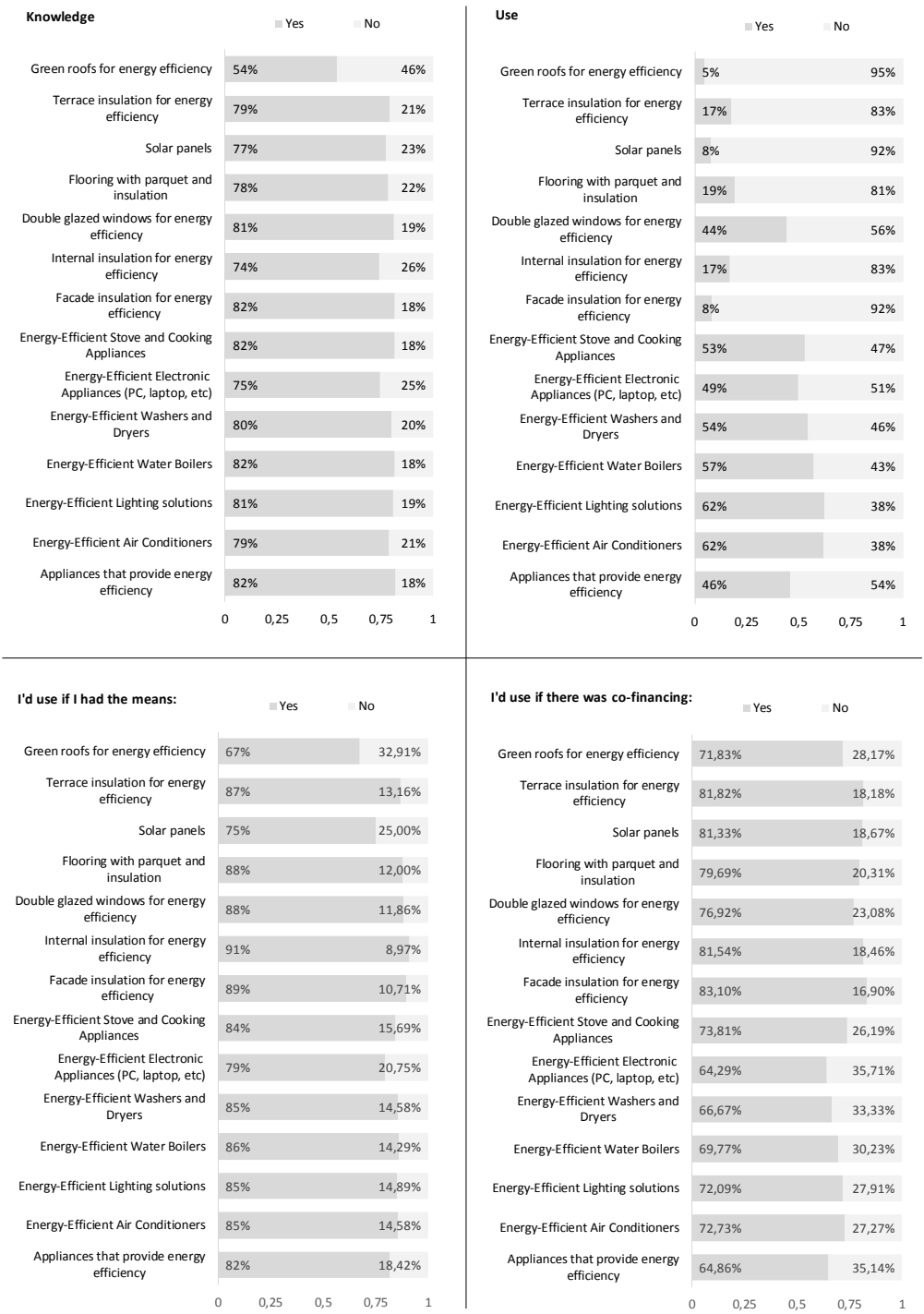

Figure 9. Energy efficient appliances and solutions: (a) knowledge and use; (b) means and co-financing
Source: authors' processing.

Knowledge of green transition and willingness to pay

The green transition is a key term in most strategies and policies worldwide. Translating strategies and policies into action and communicating them to citizens is inherently complex. Approximately 34% of respondents in the survey stated that they had never heard of the concept of the green transition (Fig. 10). Approximately 61% of respondents who have heard about the green transition consider the available information to be insufficient. Approximately 30% affirm that information is abundant, while another 13% suggest that it is not understandable.

Generally, respondents have a relative knowledge of green transition and sustainability topics (all net balances are positive). Knowledge is limited to protecting biodiversity, ecosystems, resources, production, innovation, and clean and renewable energy. Despite the different levels of knowledge, respondents affirm the importance of all listed topics. The latter might be driven more by the internationalisation of the topics rather than the understanding of the topics.

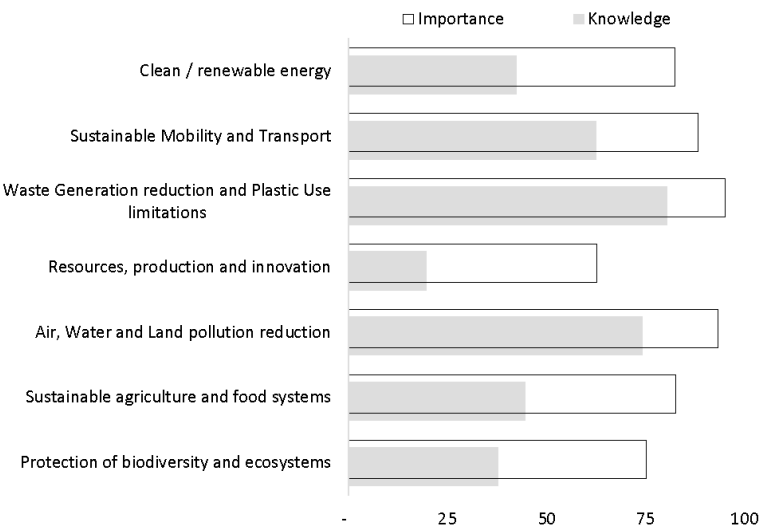

Figure 10. Knowledge and importance of green transition pillars (net balances in pp)
Source: authors' processing.

The role of the household and its impact on the environment is poorly understood based on respondents' affirmations (net balance +3 pp) (Fig. 11). Savings on energy consumption are broadly guided by financial reasons (net balance +81 pp) rather than environmental awareness (net balance +11 pp). There is a strong consensus among respondents on the net environmental benefits of public transport compared to private vehicles, as well as the presence of greenery (all net balances are positive and close to maximum). While the typology of appliances is acknowledged to impact the level of energy consumption (net balance +54%), respondents suggest that labels informing them of their energy-related features are not understandable (net balance -12 pp).

Acknowledging the role and impact of household practices on the environment is the first step towards intervening. In this direction, respondents affirm prioritising energy-saving appliances, biking, and using public transport to reduce their carbon footprints. In addition, they apply recycling practices and minimise the use of single-use plastics to reduce waste generation and promote resource conservation. At the same time, some households are unsure about the environmentally friendly measures they can implement on a daily basis.

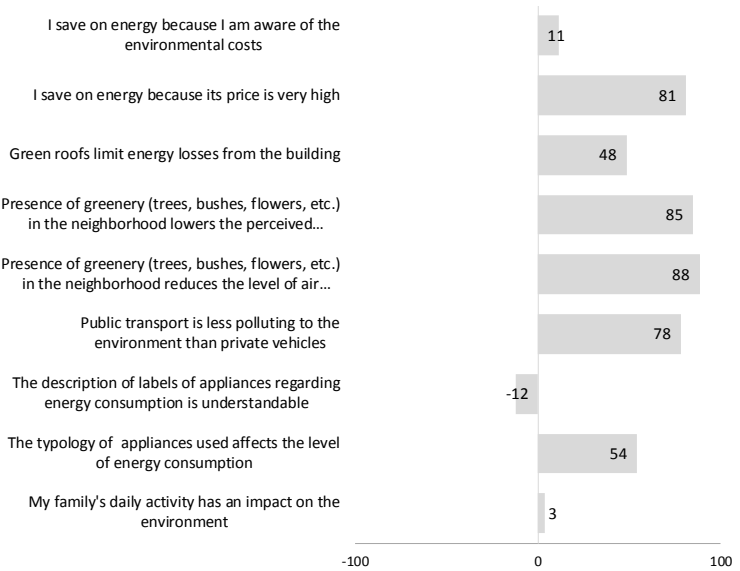

Figure 11. Household impact on the environment (net balances in pp)
Source: authors' processing.

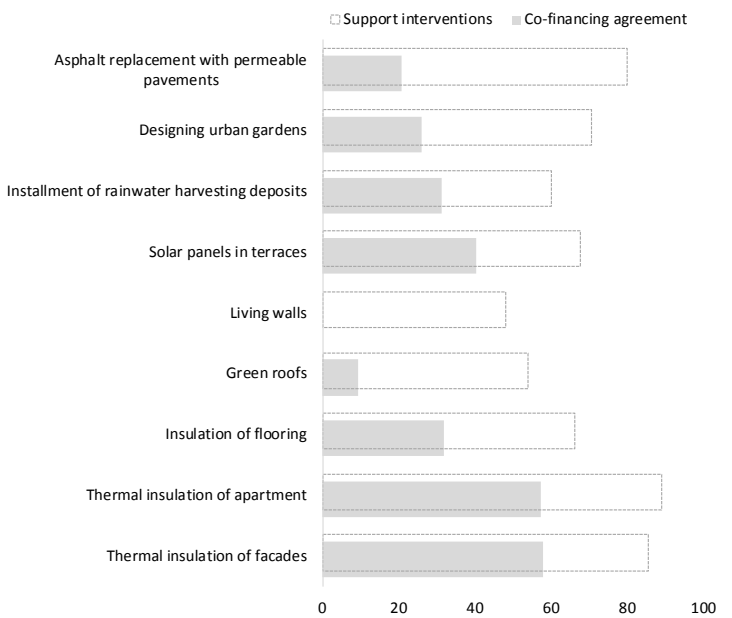

Figure 12. Support and willingness to pay for ameliorative interventions (net balances in pp)
Source: authors' processing based on survey data.

To improve the energy performance of the apartments and buildings, as well as the quality of life in the area, respondents affirm their support for interventions related to thermal insulation

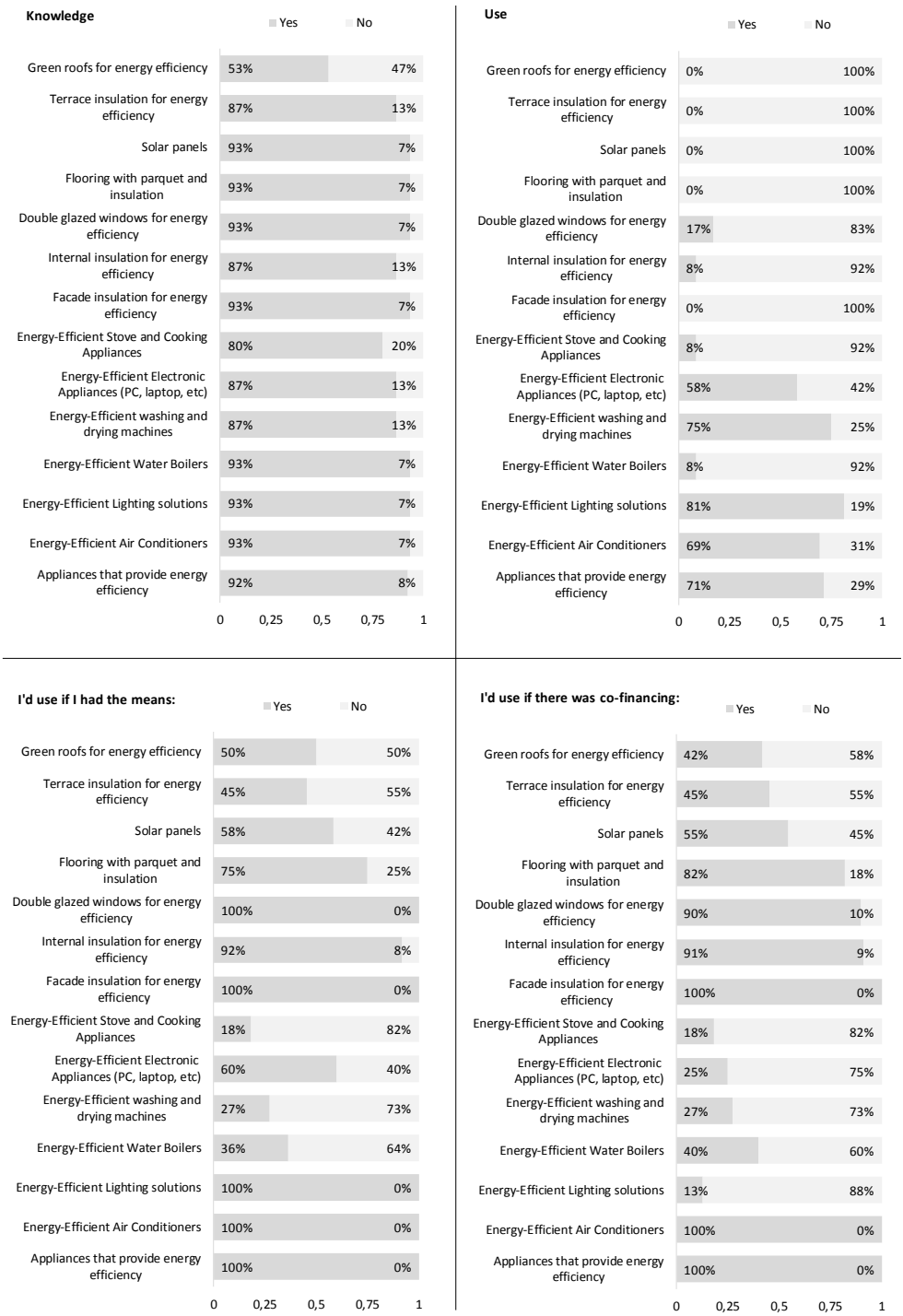

Figure 13. Energy-efficient appliances and solutions for businesses
Source: authors' processing based on survey data.

of the apartments, façades, flooring, and solar panels (all balances are positive) (Fig. 12). The same is true for interventions related to increasing permeability in the area, such as replacing asphalt, designing urban gardens, and installing rainwater harvesting systems. Again, green roofs and living walls are the least supported interventions. While supportive, willingness to co-finance this intervention is consistently lower, mainly related to green roofs, living walls, asphalt replacement, and rainwater harvesting deposits. Interventions related to thermal insulation and renewable energy receive greater co-financing support, recognising their long-term benefits and cost savings. On average, co-financing for the interventions amounts to about 18% of the total cost, with a minimum of 0 and a maximum of 50% of total costs.

Businesses

Business survey results represent perceptions of those in the Ali Demi area. Given the low response rate and limited coverage, this section presents the main findings for this category in brief.

The socio-demographic profile of the respondents

The prefabricated blocks in the area did not initially foresee any commercial spaces. Therefore, all economic activity is conducted in former apartments and basements, which have been adapted for commercial purposes (often informally).

Table 5. Socio-demographic characteristics of businesses in the Ali Demi area

Gender		Origin	
Men	31%	Yes, I live in the area	54%
Woman	69%	No do not live in the area	46%
Age Group		You chose this location for your business because	
18-29 years old	38%	Large number of population	7%
30-44 years old	31%	Near where I live	86%
45-69 years old	31%	Being the only clinc in the neighbourhood	7%
+70 years old	0%		
Education attainment		The premises you exercise the activity are:	
No education	6%	Rented	82%
Junior high	13%	In proprietorship	18%
High school diploma or equivalent	31%	Other	0%
University degree	50%		
Business size		No of years of the business in the area:	
Micro	0%	Less than 3 years	38%
Small	94%	4-6 years	31%
Medium	6%	7-9 years	13%
Large	0%	+10 years	19%

Source: authors' processing based on survey data.

Direct observation suggests that most businesses in the Ali Demi study area operate as bars, restaurants, financial institutions, dental clinics, flower shops, travel agencies, hairdressers, and pharmacies, among others (Table 5). Therefore, approximately 94% of businesses are micro to small-sized, with a maximum of 2 employees and an average age of 35. Respondents have diverse educational backgrounds: 31% hold a high school diploma, 50% possess a university degree, and a small portion have no formal education. These businesses are primarily owned by residents in the area (about 54%) who choose the location because it is close to where they live (86%), and they operate predominantly in rented premises (82%). The duration of stay on the business's premises is variable, which may be related to the nature of the business's activities.

General information and attributes of business premises

Business premises are about 21 m^2 (with a minimum of 10 m^2 and a maximum of 35 m^2), ready for use, and have been recently invested in by the owner (in both cases). Investments in business premises were primarily made after 2019, with an average cost of 462,500 ALL (about 4,600 EUR), including internal works and hydraulic installations. The maintenance of the premises averages at about 23,752 ALL per year (about 237 Euro per year). Almost all business premises are equipped with refrigerators and other specialised appliances, as well as large kitchen appliances, electric heaters, and, to a lesser extent, gas stoves and heaters.

Similarly, as in the case of households, the businesses participating in the survey assess the premises' structure as good and usable and recognise that small investments improve it significantly. Therefore, even if offered, they would not relinquish the premises, even if a new construction were presented. According to observations on the ground and affirmations from respondents, the business premises are well-exposed to natural lighting and harvest solar warmth, while thermal loss is a problem. Additionally, street noise and air pollution are of greater concern. Based on respondents' assessment, the average sale price per square meter of the business premises is 30% higher than that of the general area. The average rent is about 12% lower compared to the area in general (which might be justified by the rehabilitation works to be done in prefabricated buildings). Despite inevitable volatility in the tenure of business premises, neighbour relationships are assessed above the average (slightly higher within the building) at all three levels: units, buildings, and urban blocks. Similarly to household respondents, most business respondents affirm that they do not have a building administrator and do not regularly pay any administration fees. Collaboration and co-financing are limited to common area maintenance and do not occur for other aspects.

The perceived quality of the targeted areas

Business representatives perceive the Ali Demi neighbourhood's quality and environmental performance as relatively good. Respondents agree on the importance of good access to roads, safety, connection to the sewerage system, public transportation, and pedestrian infrastructure. Nevertheless, concerns have been raised about the greenery in the area, air quality, cultural activities, parks and sports facilities, water supply, waste management, and parking spaces. If a chance is presented, only one of the businesses participating in the survey would relocate; two are not willing to relocate, and nine businesses are unsure about relocation.

Energy sources and consumption patterns

Electricity is the primary energy source for all essential functions, including lighting, cooking, heating, cooling, and hot water. The business respondents do not use gas, solar panels, or wood as their energy sources. LED lighting is used most frequently, followed by specific electronic devices, air conditioning, and alarm systems. Most of the listed appliances are not available on the business premises. Since these appliances are closely related to business activity, the energy bill is almost the same during the warm and cold seasons (the average bill increases by 2% in the cold season). Over the past five years, respondents have reported an increase in their energy consumption, leading to higher energy bills. Saving on the energy bill is important; therefore, when new investments are made on the business premises or new appliances are acquired, respondents affirm that they consider energy-efficient aspects (of which they are aware and confident). The self-reported knowledge about energy-efficient appliances and solutions is confirmed by respondents (excluding green roofs).

The effective use and adoption of these appliances and solutions are affirmed for air conditioners, lighting solutions, washing and drying machines and, to some extent, electronic devices (Fig. 13). If means and co-financing are available, business representatives participating in the survey would be willing to adopt energy-efficient solutions. In particular, the highest willingness is registered for energy-efficient air conditioning, lighting, façade, internal insulation and double-glazed windows. Respondents' willingness to engage in green roofs, solar panels, and terrace insulation decreases somewhat, likely because these activities are not closely related to the activities they conduct on their premises. Unlike households, in the presence of co-financing, the willingness to adopt energy-efficient solutions is almost the same as when one's means are available.

Knowledge of green transition and willingness to pay

Approximately 56% of respondents in the Ali Demi area are aware of the green transition, while 44% claim not to have heard about it (Fig. 14). Approximately 75% of respondents indicate that they lack information about the green transition or are unaware of it, while 25% suggest that information is available but somehow difficult to understand. In addition, the knowledge and importance of green transition pillars are higher regarding sustainable mobility and transport, waste generation reduction, and plastic use reduction, as well as air, water, and land pollution. Little knowledge is needed to protect biodiversity and ecosystems, as well as sustainable agriculture and food systems, resource production and innovation, and, to some extent, clean and renewable energy.

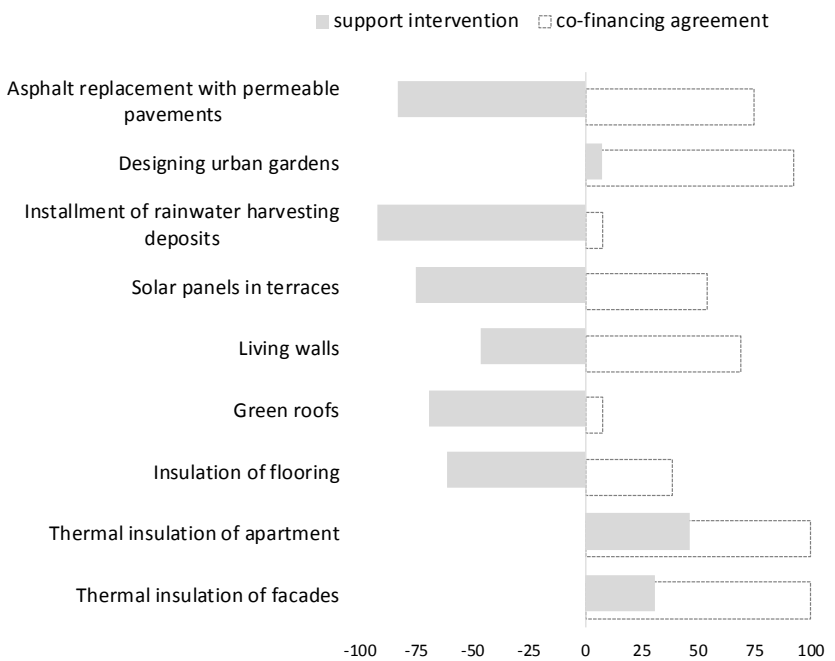

Figure 14. Businesses' support and willingness to pay for ameliorative interventions
Source: authors' processing based on survey data.

Similarly to households, the business community agrees that public transport is less polluting than private vehicles and that greenery plays a role in reducing air pollution and lowering temperatures. They also agree with the statement that their activity might impact the environment and that the appliances they use affect energy consumption levels. Nevertheless, energy-saving behaviour is driven by potential savings resulting from high energy costs. Businesses support sustainable interventions for thermal internal and façade insulation, urban garden design, and replacing asphalted areas with permeable pavement. Co-financing is agreed on interventions related to thermal insulation (internal and façade) and, to a lesser extent, urban garden design. On average, co-financing for the interventions amounts to about 22% of the total cost, with a minimum of 10% and a maximum of 35% of total costs.

Discussion on findings

Socio-economic demographics and energy behaviour

Households and businesses in Tirana's prefabricated buildings show different energy consumption patterns. Electricity is the primary energy source for heating and daily needs, with traditional fuels like wood and gas playing a minor role. This shift from the 2000s is likely due to safety concerns, a lack of distribution infrastructure, and rising fuel prices, as outlined in the findings of Islami and Veizaj (2014). Consequently, we obtained similar results to those reported in Murataj et al. (2018), where electricity usage peaks in winter for heating households, while businesses maintain a steady level of consumption throughout the year. Both categories reported increased energy use and higher monthly bills over the past five years, indicating a growing energy demand and potential energy efficiency gaps in these ageing buildings. These trends emphasise a pressing need for retrofitting to improve insulation and overall efficiency. Without intervention, energy inefficient prefabricated apartments are likely to perpetuate high levels of energy demand. Socio-economic factors have a role in shaping energy behaviour. Socio-economic factors play a role in shaping energy behaviour, with higher-income and more educated individuals being more likely to adopt energy-saving measures. In contrast, mid-to-low-income households often reduce their energy use out of necessity (due to financial constraints) and are less willing to invest in energy efficiency upgrades. These patterns align with findings from Horbach (2022), which suggest that in Europe, gender, income, and education are correlated with greener energy behaviour, while households struggling with bills exhibit a lower willingness to pay for efficiency improvements. Therefore, a better understanding of the socio-economic profiles of tenants is essential when designing interventions that involve changing behaviours related to energy use. For instance, older residents on fixed incomes may be mindful of energy savings but may not be able to afford retrofits; wealthier households, on the other hand, might be more willing to adopt solar panels or heat pumps. The energy behaviours observed are influenced by both the nature of prefabricated housing and the adaptive habits of residents, highlighting the need for targeted support to promote sustainable consumption patterns.

Upgrade vs. demolition – community preferences

The findings from this study highlight a preference for upgrading existing prefabricated buildings rather than demolishing and replacing them with new constructions. Additionally, our findings confirm that emotional bonds to one's residence and community deter relocation even when newer housing options are available. Respondents rated their premises as satisfactory and their

neighbourhood as reasonably well-located and serviced, despite subpar conditions, indicating resistance to relocation (only 12% indicated that they would leave their neighbourhood if given the opportunity to relocate to a 'better' area). Place attachment, despite acknowledging environmental and livability issues, as well as trust issues, plays a role. Several factors might explain this rootedness: emotional attachment to one's home (many respondents have an average residency of 19 years), social ties, and sense of belonging. Nientied et al. (2019) argue that residents often identify with their local community and derive security and pride from it. At a more pragmatic level, aside from environmental drawbacks, the neighbourhoods are well served by public facilities. Residents express mistrust toward private developers and city redevelopment plans, fearing displacement or higher costs if buildings are rebuilt. This concern is reinforced by soaring real estate prices in Tirana's new developments, making it clear to homeowners that selling and relocating would be financially challenging. As a result, they prefer in-situ upgrades, combined with public support to preserve both their investment and community ties. Respondents' preference for renovation over demolition and reconstruction is influenced by social cohesion and place attachment (Manahasa & Özsoy, 2017; Bertolazzi et al., 2019; Nientied et al., 2019). The respondents' preference for renovation aligns with broader discussions on the green transition of the housing sector, where a top-down redevelopment approach can yield limited results in the presence of non-supportive stakeholders. According to Drews & Den Bergh (2015), insufficient public support can hinder the implementation of climate policies, regardless of how technically sound they may be. On the contrary, a higher acceptance can be achieved through an inclusive approach that involves residents in the decision-making process. Environmental policies perceived as fair, non-intrusive, and considerate of local welfare are more likely to be supported (Huber et al., 2020). For Tirana's prefabricated blocks, any path forward – whether through deep energy retrofits or selective rebuilding – must strike a balance between engineering solutions and the well-being and preferences of occupants. Residents should be treated as partners and beneficiaries in the process of upgrading their homes (Moore et al., 2024).

Willingness to pay and co-financing affordability

Financial considerations (upfront, sunk and affordability) emerged as a significant determinant of green action among the surveyed households and businesses. Although respondents recognised the importance of energy-efficient upgrades (such as improved insulation, efficient appliances, and solar installations), they are unwilling to bear the full costs of these green transition measures on their own. Both households and businesses expressed a clear preference for cost-sharing arrangements. In fact, on average, households stated that they would contribute at most about 50% of the investment cost, and businesses around 35%, towards energy-saving retrofits in their buildings, expecting the remainder to be covered by government programs or other sources. Co-financing appears to be a viable option primarily for interventions that offer direct cost savings, such as thermal insulation (reducing heating bills) or efficient lighting. By contrast, more altruistic or longer-term payback investments (e.g., green roofs, rainwater harvesting, living walls) elicited little interest, as their financial benefits are not immediately evident. The pragmatic cost–benefit approach of respondents is consistent with prior studies on pro-environmental investments. Fatoki (2020) argued that perceived financial benefits had a more substantial influence on purchasing energy-efficient appliances than environmental concerns. Similarly, Scheller et al. (2024) concluded that personal and financial benefits ('green for me') motivate homeowners far more than collective environmental benefits ('green for all') in adopting low-carbon technologies. Here

respondents echo this 'green but only if it pays' attitude: they are willing to act for the environment when it aligns with self-interest, but less so out of abstract duty. Notably, the inclination to co-finance up to a point also reflects perceptions of fairness and affordability. Many households in our study are from middle- or low-income backgrounds, and businesses are often small enterprises; they feel it is unfair and unrealistic to shoulder the costs of the green transition alone. This aligns with the findings of Sándor et al. (2025), who argue that both ability and willingness to engage financially (where assistance is provided to those less able to pay) shape public support for green initiatives. In the context of the present study, the clear message is that co-funding schemes and incentives (grants, subsidies, low-interest loans) are critical to unlock private investment in energy efficiency. Willingness to pay exists, but it is conditional on external support and perceived fairness in cost-sharing, which underlines the need for policy mechanisms that reduce financial hurdles for households and businesses in the green transition.

Green transition awareness and behaviour gap

The survey results reveal a significant gap in respondents' awareness and action in the green transition. On the one hand, respondents have a relatively high awareness of environmental issues and familiarity with energy-efficient solutions. Most participants are familiar with or understand concepts such as energy-saving appliances, solar energy, insulation, recycling, and the broader concept of a green transition. This encouraging level of awareness can be partly attributed to a well-educated sample (over half of household heads have a university degree) and the general rise in public discourse on climate change in Albania.

On the other hand, awareness has not fully translated into concrete pro-environment behaviours, exposing an attitude-behaviour gap. Many households and businesses report only modest changes in their practices despite knowing what should be done. For example, many respondents have not yet installed solar water heaters or improved their buildings' insulation, despite acknowledging that these measures are energy-saving. The gap between environmental awareness and actual behaviour is a well-documented phenomenon (Kollmuss & Agyeman, 2002; Sándor et al., 2025). Several factors help explain this gap in our case. First, cultural and social norms change slowly: long-standing habits (e.g., reliance on electrical resistive heaters or using cars for short trips) are hard to break, especially among older residents, even if they intellectually accept the need for change. Family traditions and peer behaviours in the community also influence personal choices – if neighbours are not adopting solar panels, an individual may hesitate to be the first. Second, there are significant external barriers. Financial constraints top the list: as discussed, many cannot afford the upfront costs of green solutions, creating an intention-action gap despite good intentions. Moreover, informational gaps and uncertainty about how to act effectively often hold people back – respondents often feel unsure what needs to be done or how actions might affect climate change. This suggests a need for explicit guidance and demonstrations of impact, as people may question whether their efforts, such as recycling or energy savings, really matter in the broader context. The benefits of many green actions (such as insulating one's apartment) accrue in the long term, whereas the costs or efforts are immediate. This temporal mismatch can lead to procrastination (Kollmuss & Agyeman, 2002; Horbach, 2022). Indeed, Horbach's (2022) research suggests that even when people are willing in principle, they may delay adopting measures due to the upfront effort required or conflicting short-term priorities. Our study reveals that respondents tend to prioritise actions with immediate personal payoff (cost savings) and hesitate about those with distant or diffuse benefits. To bridge the awareness-

behaviour gap, merely informing people is insufficient – targeted interventions are necessary to minimise barriers. In a nutshell, the community is receptive but cautious; they conceptually support the green transition, yet require supportive conditions to turn that support into sustained behavioural change.

Conclusions

This study offers an on-the-ground perspective on how communities living and working in Albania's prefabricated building stocks perceive the green transition. Surveying households and businesses in three Tirana neighbourhoods, we unearthed several salient patterns in awareness, attitudes, and willingness to act. Key findings from the survey reveal that both the ability and willingness of individuals to endorse climate action are crucial and significantly influence the degree of support for environmental policies and initiatives. While willingness is present (in principle), ability (in terms of financial capacity or viable options) often restrains action. Socio-demographic factors and perception of fairness further affect engagement, reinforcing the importance of equity and inclusion in effective climate policies. In Albania and similar contexts, a just green transition requires incorporating social equity – policies must 'leave no one behind' by accounting for the varying means and needs of the public.

The study's findings have potential implications for policymakers. The clear preference for renovation over demolition suggests that urban renewal strategies should prioritise retrofitting prefabricated buildings with energy-efficient technologies, rather than the demolish-and-reconstruct approach. Any plans or programmes related to prefabricated buildings should be approached cautiously and with extensive community consultation to avoid public resistance. The pronounced financial barriers for households and small businesses highlight the need for innovative co-funding schemes. Therefore, public authorities should develop programmes that subsidise or co-finance energy efficiency investments, a measure that could unlock dormant private capital and spur building improvements. Likewise, targeted subsidies for low-income families or tax incentives for businesses to upgrade their premises would address equality concerns and increase participation. To narrow the awareness-action gap, enhanced public awareness campaigns and facilitation are needed. Rather than generic messages, campaigns should provide tailored guidance – for instance, local workshops on how to form homeowners' associations to apply for retrofit grants, or demonstrations of cost savings from LED lighting and efficient appliances. Ultimately, our findings emphasise the importance of fairness and transparency in policy design, as they are essential for building trust and securing buy-in.

The research advances the literature by incorporating the community's perspective in a green transition context, particularly in a lower-middle-income, post-socialist environment like Tirana (Albania). While numerous studies have explored energy efficiency in buildings from a technical standpoint, there is limited evidence about how intended beneficiaries – households and businesses – perceive and respond to green transition efforts in Tirana. The study addresses this gap with specific nuances within a fully replicable setting, offering a model for integrating stakeholder views into sustainability research. Furthermore, it strengthens the academic debate by emphasising that the success of environmental policies relies not only on technology and economics but also on behavioural attitudes, social dynamics, and communication. A deeper understanding of the human dimensions improves theoretical models of the green transition, making them more reflective of real-world conditions.

The study has several limitations. Specifically, it focuses only on prefabricated buildings in three neighbourhoods, which does not represent the entire stock of prefabricated buildings and fails to capture the full diversity of the housing stock in Tirana and Albania. Therefore, results should be interpreted cautiously, without generalisations. Future research could increase the sample size, introduce additional explanatory variables, and consider a broader range of building typologies. The small sample of businesses and the low response rate also restrict understanding of their perspective on the green transition. The study is exploratory, providing a snapshot of the current situation. As Albania advances in implementing the WBGA through policies and projects, longitudinal research may help capture the behavioural change of communities over time. Despite these limitations, this exploratory study offers a valuable starting point for both policymakers and scholars.

Acknowledgement

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