EmpowerMed

EmpowerMed cross-pilot analysis

Exploring the situations of households affected by energy poverty

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1 Background

More than 50 million households in the European Union are struggling to attain adequate warmth, pay their utility bills on time and/or live in homes free of damp and mould. Awareness of energy poverty is rising in Europe as the issue has been identified as a policy priority by growing number of EU institutions.

Although energy poverty is found all over the EU, the countries of Southern and Eastern Europe face deeper energy poverty than elsewhere. In the Mediterranean countries, coastal areas are facing several specific challenges when it comes to energy poverty, mainly connected to thermal comfort of dwellings. During the summer season, energy poverty mostly appears because of lack of access to adequately cooled dwellings. Lack of pre-installed central heating systems and electricity-based heating, which is expensive, are another specificity of this region. Dwellings have none or low insulation and there is a high level of housing in a poor state of repair, which makes the situation more challenging. Additional key aspects of the region are arrears on bills, indebtedness and the risk of disconnection. Energy poverty and housing insecurity are also linked, with evictions as the worst consequence of housing unaffordability, which is due to tensions between locals' and tourists' demand for housing. Lastly, coastal urban areas are also affected by precarious, low-quality jobs (eg. in tourism, harbours…).

Women and women-led households are disproportionately affected by energy poverty. Generally, there is a higher share of women who are at risk of poverty and social exclusion than men. Women are also more heat and cold sensitive than men due to physiology (chronic temperature-related discomfort, heat and associated diseases). Yet, women are a crucial actor in tackling energy poverty, hence their engagement in acting against energy poverty is of utmost importance.

Research shows that energy poverty has significant impacts on people's health. Health effects associated with energy poverty include anxiety, stress and depression but also increased physical morbidity rates and greater mortality rise. More precisely, cold housing has been directly linked to respiratory pathologies and circulatory diseases and conditions such as flu, cold, arthritis and rheumatisms which can be worsened due to living in an inadequately heated home.

In order to address these challenges, the project EmpowerMed - Empowering women to take action against energy poverty in the Mediterranean – aims to contribute to energy poverty alleviation and health improvement of people affected by energy poverty in the coastal areas of Mediterranean countries, with a particular focus on women.

2 Objectives

2.1 Overall objectives

The overall objective of project EmpowerMed is to contribute to energy poverty alleviation and health improvement of people affected by energy poverty in the coastal areas of Mediterranean countries, with a focus on women:

- implementing practical solutions, tailored to empower households affected by energy poverty to manage their energy consumption and improve their access to appropriate energy resources in respective areas,
- assessing the efficiency and impacts of various practical energy poverty alleviation measures to formulate local, national and EU policy recommendations and
- promoting the policy solutions for tackling energy poverty at local, national and EU level.

2.2 Research objectives

Based on the content of the questionnaire following objectives can be defined:

- Mapping the current situation of households that participated in practical actions of EmpowerMed project
- Examine situations of households, mainly affected by energy poverty, from the different pilot regions in the Mediterranean under EmpowerMed project

3 Methodology

3.1 Data collection

Data collection of the quantitative survey was performed in all participating countries in the period between June 2021 and June 2022. The reason for the long period is that data was gathered on workshops but also on individual in-home visits by trained personnel. Adequate time was needed to organise these workshops and in-home visits, since people could react reluctantly to talk about their challenges. Apart from that, Covid-19 rules made it difficult to implement all the activities in a short period.
Data was gathered in pilot regions of EmpowerMed project, in this case (sub)urban areas in Slovenia (Obala), Croatia (Zadar), Italy (Padova), Spain (Barcelona) and France (Marseille), and both urban (Vlora) and rural (Novosela) in Albania. Data was collected during the implementation of activities such as household visits or collective assemblies.
When further in the report countries are mentioned, they refer to these pilot regions, not to entire countries. Samples are not representative, but consist of participants of EmpowerMed activities that focused on people affected by energy poverty, mainly women.

TABLE 1: Number of participants per country

	Total	Croatia	Spain	Italy	France	Slovenia	Albania
Numerous	n= 673	n= 200	n= 28	n= 61	n= 94	n= 190	n= 100

The indicated numerous are the basis for analysis. On some questions the total n can be a little lower, since not all participants answered all questions. The differences in numerous can also have some influence on the analysis; in some cases, comparisons should be interpreted with care.

3.2 Content of questionnaire

For reasons of comparability, the questionnaire needed to be similar in all participating countries. However, due to specific and locally bound circumstances some differences were implemented. This means that some data for a country can be missing or that some answers were adapted, which then were recoded to make them comparable.

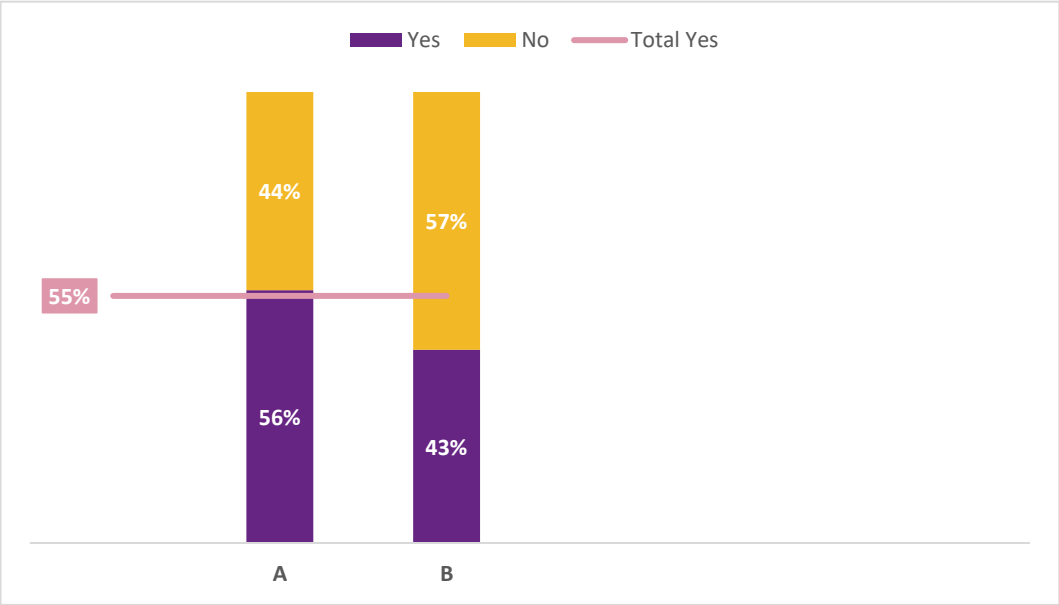
Questionnaire chapters

- General information
- Household situation
- Building participants live in
- Comfort and heating/cooling
- Energy bill
- Health
- Empowerment

The full questionnaire is available in Annex 1. It needs to be noted that not all the questions were analyzed in this analysis. The reason is that the original questionnaire (Annex 1) had to be adjusted to fit the local context in each pilot site, which resulted in some items being rephrased or removed in local language versions. Once adjusted, cross-pilot site comparison was not possible for questions 7, 16, 17, 21, 22 and 23, which are omitted from this analysis.

3.3 How to read results

In the figures percentages (or averages) are displayed for answers (here: 'Yes' and 'No') per country (here: 'A' and 'B') with a line representing an overall result (percentage or average over all countries) as a reference point (here: the total percentage of 'Yes' answers).



In tables results are displayed per country (here: 'A', 'B' and 'C') for answer categories (here: '1', '2' and '3') with a column showing the overall result (percentage over all countries). The green upwards triangle shows an over-represented result compared to the total; a red downwards triangle an under-represented result compared to the total.

	A	B	C	Total
1	▼25%	▲54%	38%	**37%**
2	▲38%	▼15%	27%	**24%**
3	▲26%	19%	▼13%	**19%**

Overall, mainly frequencies and averages were analyzed, as well as a number of correlations. To find over- or under-represented results, t-test was done with 95% confidence interval.

3.4 Break-outs analyzed

In the analysis possible differences and explanations were looked into regarding:

- gender
- rental of dwelling vs owning dwelling
- affected by energy poverty vs not affected by energy poverty

For rental vs owning dwelling question O9 (What is the tenancy status of your dwelling?) was used. For the definition of energy poverty question O25 was used. Although there is a variety of definitions of energy poverty, for the purpose of this analysis, anyone who made any cut back on any spending in favour of paying utility bills was defined as affected by energy poverty. Those who did not make any cut backs were regarded as not affected by energy poverty. This division was used to make a distinction in the analysis, as some

participants of the activities of EmpowerMed were not necessarily affected by energy poverty. This is because workshops and collective assemblies were open for access to anyone who felt invited and some of the participants might not have been affected by energy poverty.
Results of break-out analysis are only presented when a relevant difference was found.

4 Analysis of results

4.1 Socio-demographic information

Logically, as they were the target group of the project, a little over two thirds of the sample consists of women. Only in Albania, still a more male dominated society, half of participants were male. The majority of the sample has education up to secondary level, but not higher. Only in France a bigger number have a bachelor degree. There might be some of them that have a higher university degree but there will a lot of respondents that have the 'baccalauréat', often known in France colloquially as the bac, which is a French national academic qualification that students can obtain at the completion of their secondary education (at the end of the lycée) by meeting certain requirements. So, it is not necessarily a finished higher education.

TABLE 2: Socio-demographics

		Albania	Croatia	France	Italy	Slovenia	Spain	Total
Gender	Female	49%	71%	84%	60%	71%	76%	**69%**
	Male	51%	29%	16%	39%	29%	21%	**31%**
	Non Binary	0%	0%	0%	2%	0%	3%	**0%**
Education	Less than primary	7%	23%	2%	0%	1%		**10%**
	Primary education	51%	30%	11%	36%	37%		**35%**
	Secondary education	35%	40%	41%	36%	50%		**41%**
	Bachelor or equivalent	6%	2%	32%	12%	12%		**9%**
	Master or equivalent	1%	6%	14%	17%	1%		**5%**

4.2 Household and socio-economic situation

The majority of the sample consists of single-person households, followed by couples with children. In Croatia, there are more single-person households taken in the sample than elsewhere. France and Italy over represented when it comes to single-parent families.

TABLE 3: Type of household

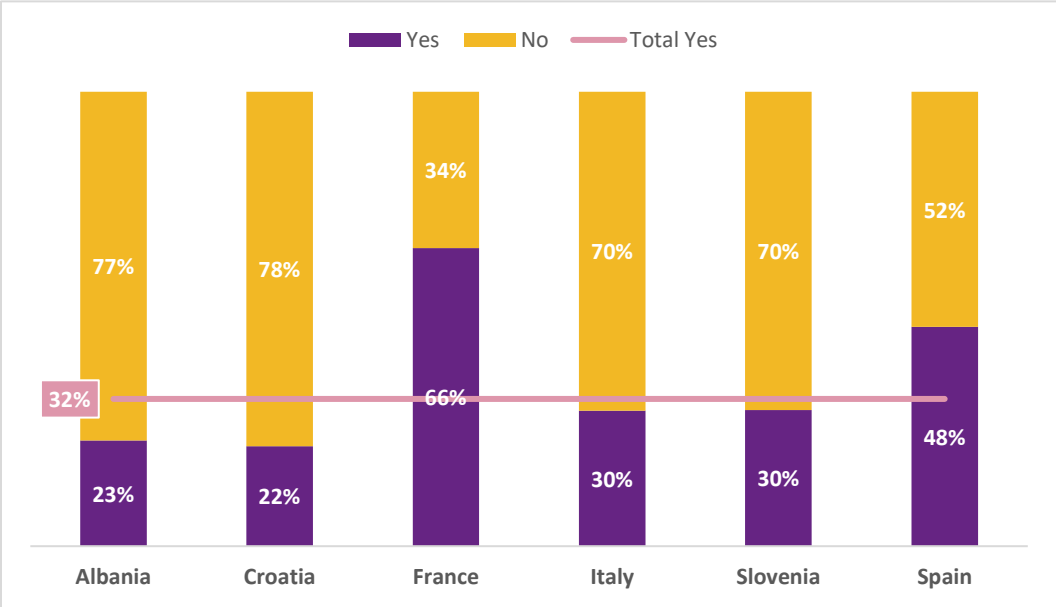
	Albania	Croatia	France	Italy	Slovenia	Spain	Total
Single-person household	▼25%	▲54%	38%	▼26%	▼30 %	▼31%	**37%**
Couple with children	▲38%	▼15%	27%	▲40 %	▼22%	▼14%	**24%**
Couple without children	▲26%	19%	▼13%	▼10 %	19%	21%	**19%**
Single-parent family	▼11%	▼ 9%	▲18%	▲16%	▼10 %	14%	**11%**
Other	▼ 0 %	▼ 5%	▼ 0 %	▼ 5%	▲17%	▲21%	**8%**
Two or more non familiar persons	▼ 0 %	▼ 0 %	▲ 4%	▲ 3%	2%	▼ 0 %	**1%**

BREAK-OUT GENDER: In the total sample (across all countries), there are more single-parent families among the women than among the men (total: 15% vs 4%); and this is also the case in every country.

BREAK-OUT ENERGY POVERTY: When looking at energy poverty: people affected by energy poverty live more often alone than the ones not affected by energy poverty (total: 43% vs 29%) which is the case mainly in Albania (31% vs 4%) and Slovenia (41% vs 21%). People affected by energy poverty also are more often in a single-parent situation (total: 14% vs 8%). This difference is the biggest in France (26% vs 0%).

About one third of the participants receives aid in the form of social welfare. Especially in France the participants were often the recipients of social welfare who are accommodated in social housing. In Spain half of the participants receive social support, often in the form of a social discount rate for electricity bills, but they don't live as often in social housing. In Albania and Croatia, a minority of respondents receive social welfare.

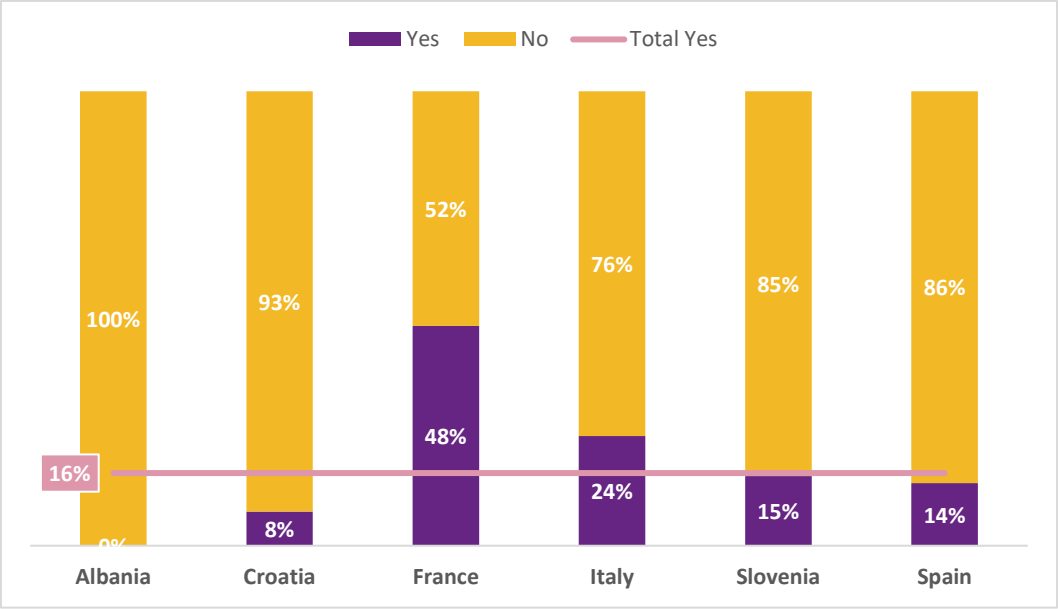
FIGURE 1: Recipient of public social welfare



BREAK-OUT GENDER: Women are more often the recipients of social welfare than men (total: 38% vs 20%); the difference is the biggest in Albania (41% vs 6%).
BREAK-OUT ENERGY POVERTY: Logically people affected by energy poverty are more often on social welfare than the ones not affected by energy poverty (total: 36% vs 22%).
BREAK-OUT TENANCY STATUS: Also people that rent are more often on social welfare than people that own a dwelling (total: 45% vs 20%).

Overall, 16% of the participants live in social housing, a construct that seems less developed in countries like Croatia or Albania, where none of the respondents live in social housing. Of course, a lot depends on where the participants come from: in Albania the sample was more rural with people living in theirs of their families' houses, so they are less prone to live in social housing. Furthermore, the first social housing in Vlora municipality was made available in 2021 (75 apartments). Prior social housing program supported less than 70 household with rent of the house or improving its conditions.

FIGURE 2: Accommodation in social housing



BREAK-OUT GENDER: Overall, women also are more accommodated in social housing (total: 19% vs 9%) mainly on the account of France (51% vs 33%) and Slovenia (18% vs 8%).

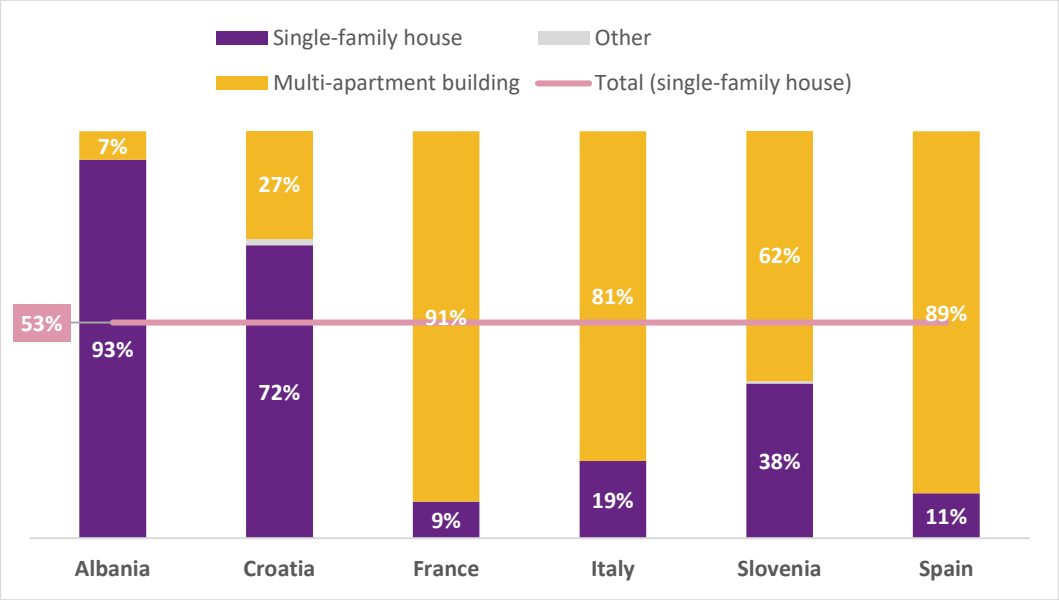
BREAK-OUT ENERGY POVERTY: Interestingly, people affected by energy poverty do not have more access to social housing than the ones not affected (total: 12% vs 14%).

BREAK-OUT TENANCY STATUS: 32% (total across countries) of people that rent are accommodated in social housing. In France this number is the highest: 54%.

4.3 Buildings

In France and Spain participants predominantly live in multi–apartment buildings, while in Slovenia this is a little over a third. In Croatia and Albania on the other hand, participants live mostly in single-family houses.

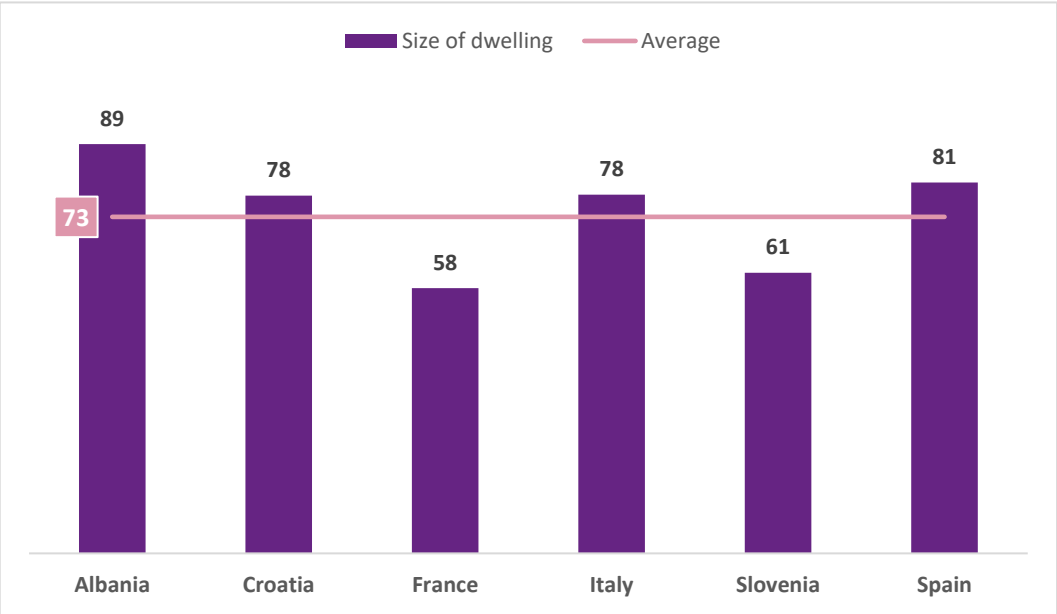
FIGURE 3: Type of dwelling



BREAK-OUT ENERGY POVERTY: People affected by energy poverty live more often in single-family houses than the ones not affected by energy poverty (total: 62% vs 44%).

The average size of the accommodation the participants live in is 73 m^2. The highest average can be denoted in Albania, Croatia (mainly houses) and Spain and Italy. In France and Slovenia, the accommodation size is a little more modest.

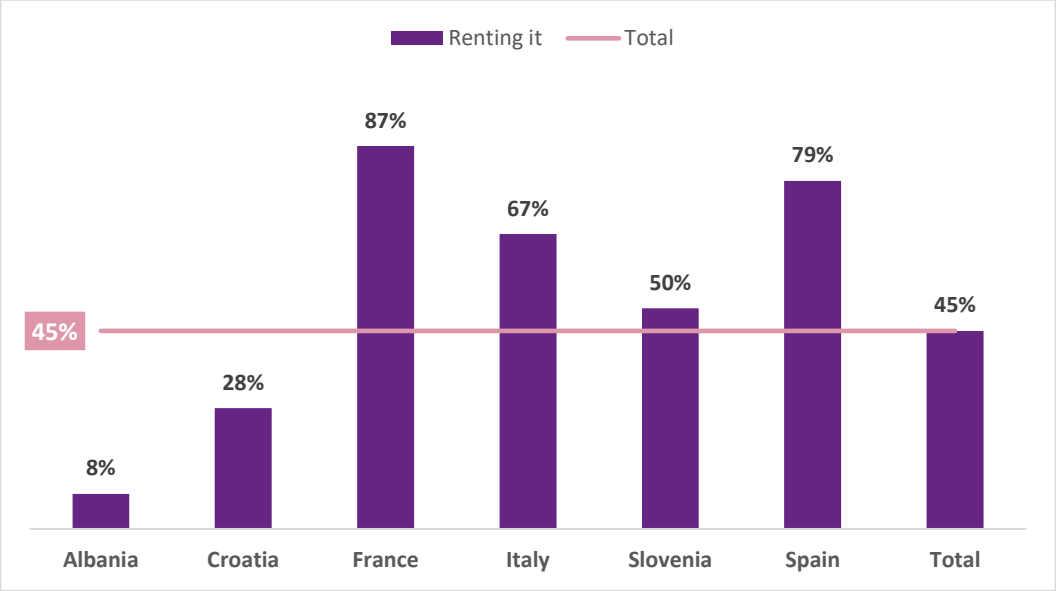
FIGURE 4: Size of dwelling in m^2



BREAK-OUT TENANCY STATUS: Owners have bigger dwellings than renters (total: 84,5m^2 vs 60,4 m^2).

In the countries where participants live in houses, probably in a family-owned house, which they (co)-own, they do not need to pay rent as much as people living in apartment buildings, like a big part of the sample in France, Spain and Italy.

FIGURE 5: Tenancy status of dwelling



BREAK-OUT GENDER: In the sample of the research, women rent more often than men (total: 48% vs 37%) while men more often own a dwelling with a mortgage (total: 23% vs 8%).

When looking at possible problems in the dwelling, the most occurring ones are draught from windows or doors: this happens in almost half of the dwellings overall, especially in Albania, where there are also more complaints of leaking roofs (participants live more often in houses). Other not negligible issues are rot in window frames or floors (France, Italy, Slovenia) or damp walls/floors/foundation (France, Italy).

TABLE 4: Problems in the dwelling

	Albania	Croatia	France	Italy	Slovenia	Spain	Total
Leaking roof	▲23%	11%	12%	14%	▼ 3%	▼ 0%	**11%**
Draught from windows or doors	▲88%	35%	▲61%	▼ 0%	48%	▲69%	**48%**
Rot in window frames or floor	▼20%	25%	▲39%	▲34%	▲35%	▼14%	**28%**
Damp walls/floors/foundation	27%	27%	▲52%	▲48%	▼15%	28%	**27%**

BREAK-OUT ENERGY POVERTY: All the problems occur more often in households in energy poverty than in households not affected by energy poverty: draught from windows (total: 57% vs 37%), rot in window frames or floor (total: 35% vs 15%), damp walls, floors, foundation (total: 33% vs 14%) and leaking roof (total: 14% vs 5%).

If insulation is done, it is to a similar extent walls, floors or roofs. Clearly in Croatia it happened more often than in the other countries. Significant opportunities exist to increase

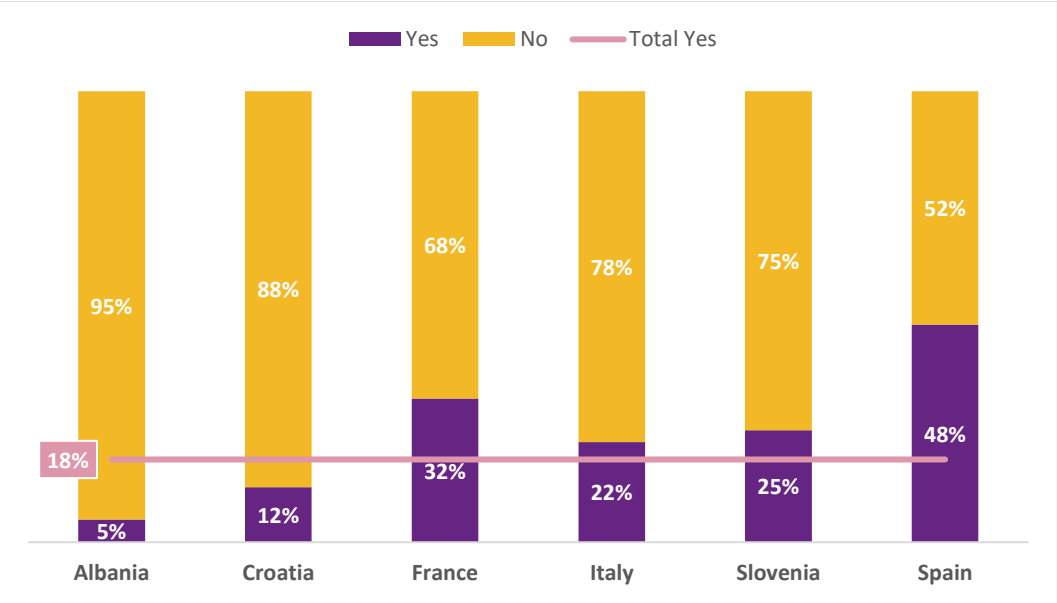
the efficiency of dwellings through insulation; especially Albania and Spain lag behind in this respect.

TABLE 5: Insulation in the dwelling

	Albania	Croatia	France	Italy	Slovenia	Spain	Total
Walls	2%	38%	11%	25%	37%	0%	**26%**
Floor	0%	64%	9%	11%	4%	3%	**25%**
Roof	1%	43%	9%	5%	26%	0%	**23%**

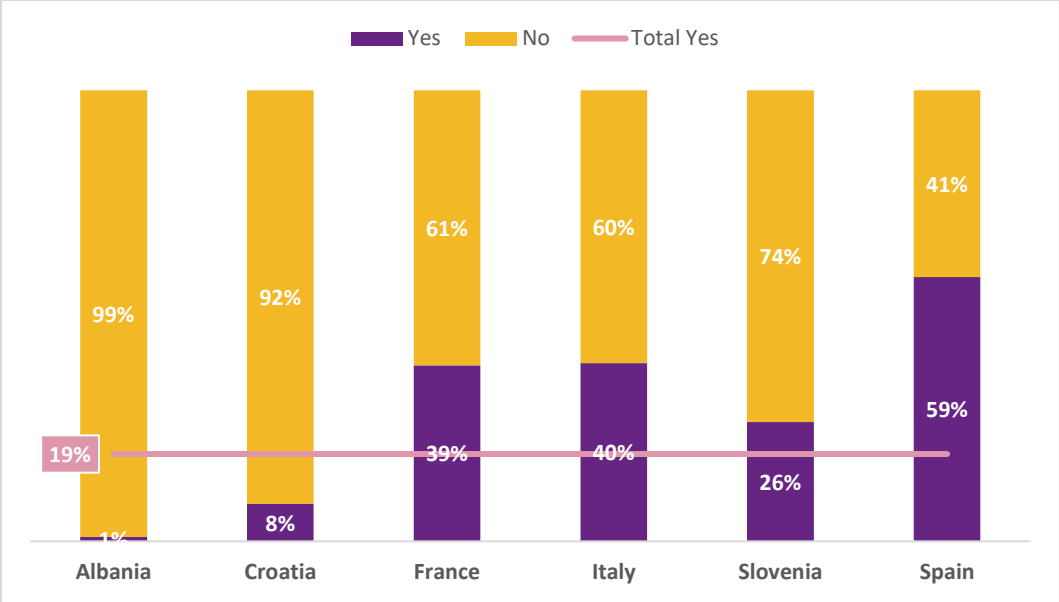
In only 18% of the cases some refurbishment over the last few years has been done, mainly in countries were most participants rent a flat in a multi-apartment building.

FIGURE 6: Any refurbishing of dwelling in recent years



Like with refurbishments, energy saving and/or efficiency measures are not so often taken (overall 19%). When some initiative is taken, it appears to be again in dwellings which are often not owned by the participants.

FIGURE 7: Applied energy saving and / or efficiency measures in recent years



BREAK-OUT ENERGY POVERTY: Interestingly, people who are not affected by energy poverty more often implement energy saving or efficiency measures than people affected by energy poverty (total: 26% vs 15%). The latter can probably not afford these measures or are facing other obstacles.

When energy saving and/or efficiency measures are taken, it shows that most often new windows are installed, or that new energy efficient appliances are introduced in the household. These are measures that a single household can decide for themselves, while more financially challenging measures, such as new insulated floors and walls or new heating systems might, on top of being expensive, need the approval of the multi-apartment. Thermal solar panels are rarely installed.

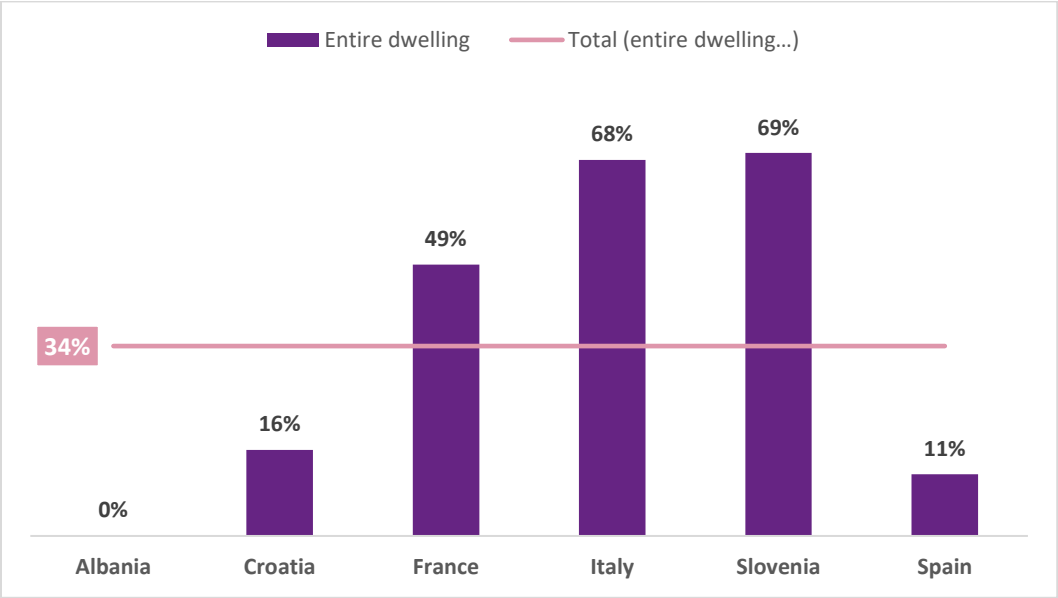
TABLE 6: Which applied energy saving and / or efficiency measures in recent years

	Albania	Croatia	France	Italy	Slovenia	Spain	Total
New windows	6%	67%	29%	26%	45%	0%	**34%**
New energy efficient appliances	0%	20%	18%	53%	5%	92%	**23%**
New heating system	6%	13%	24%	26%	20%	8%	**18%**
Floor, wall or roof	12%	20%	6%	21%	7%	8%	**11%**
Thermal solar panels	0%	0%	0%	5%	2%	0%	**1%**
Other	6%	13%	41%	11%	0%	0%	**9%**

4.4 Thermal comfort

It appears that in some countries a lot of participants do not manage to heat or cool their whole accommodation: in Albania none of them heats or cools the entire dwelling; in Croatia and Spain only a little over 10% manages to do it. Even in Slovenia and Italy almost one third of the sample cannot afford to heat or cool their entire living space. Regarding the sample as a whole, only a third of respondents is able to heat their entire dwelling.

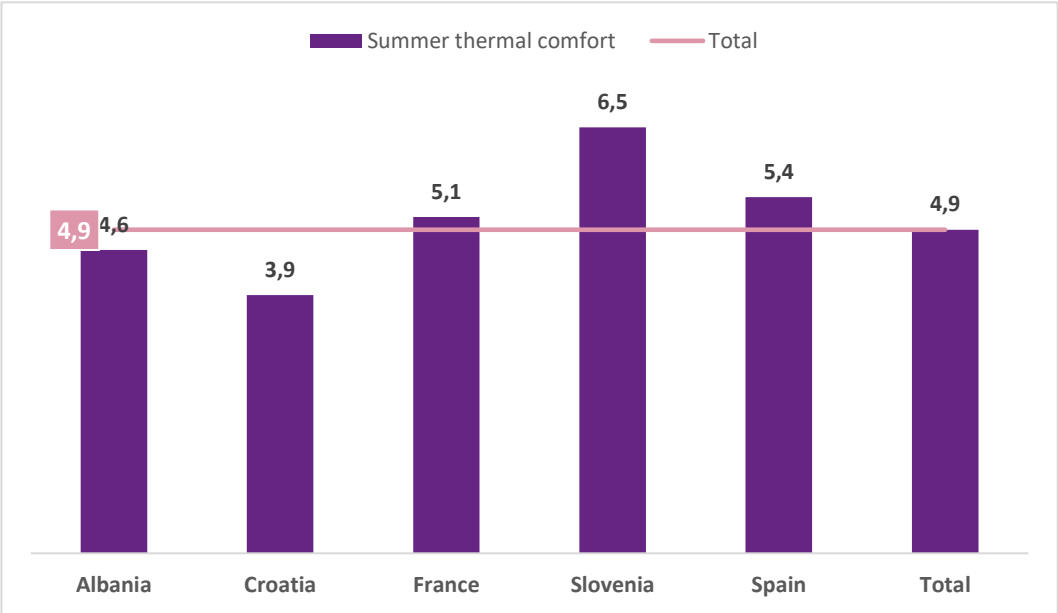
FIGURE 8: Heating or cooling of dwelling vs a few rooms



BREAK-OUT ENERGY POVERTY: Clearly, people in energy poverty do not heat their entire dwelling as often as the ones not affected by energy poverty do (total: 24% vs 44%). This happens mostly in Slovenia (58% vs 78%), Spain (0% vs 19%) and France (44% vs 59%).
BREAK-OUT TENANCY STATUS: In more cases owners heat only a few rooms and not the entire home as renters do (total: 75% vs 52%).

Overall, summer thermal comfort is rated as average. Slovenia stands a little out on the positive side, but it appears that there is room to improve this situation in most countries.

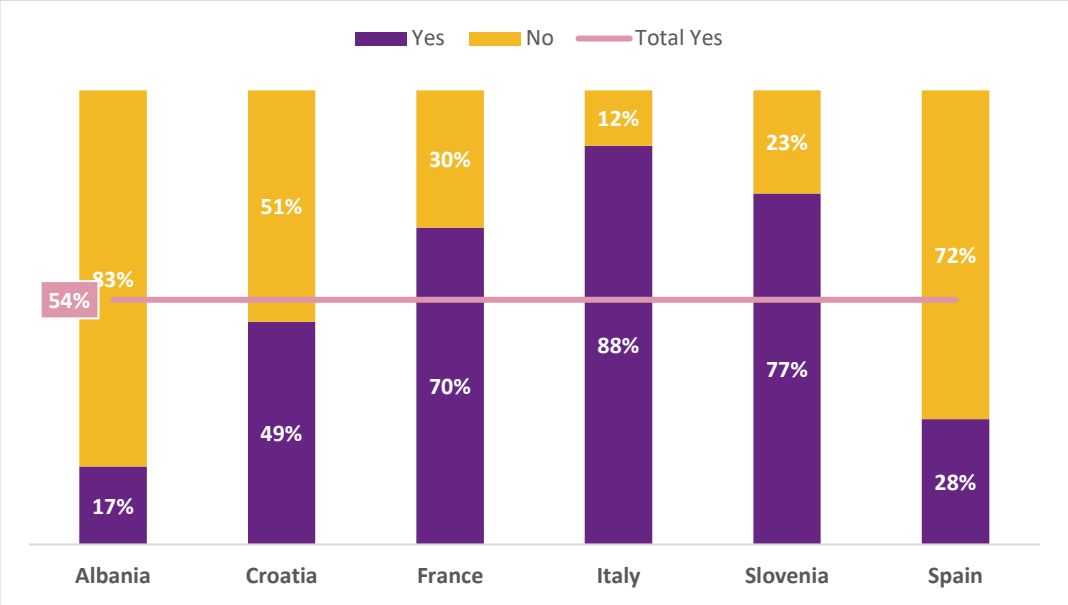
FIGURE 9: Summer thermal comfort (10-point scale: 1= completely unsatisfactory, 10= completely satisfactory)



BREAK-OUT ENERGY POVERTY: Regarding summer thermal comfort, people affected by energy poverty evaluate it less satisfactory than the ones not affected by energy poverty (4,1 vs 6,2).

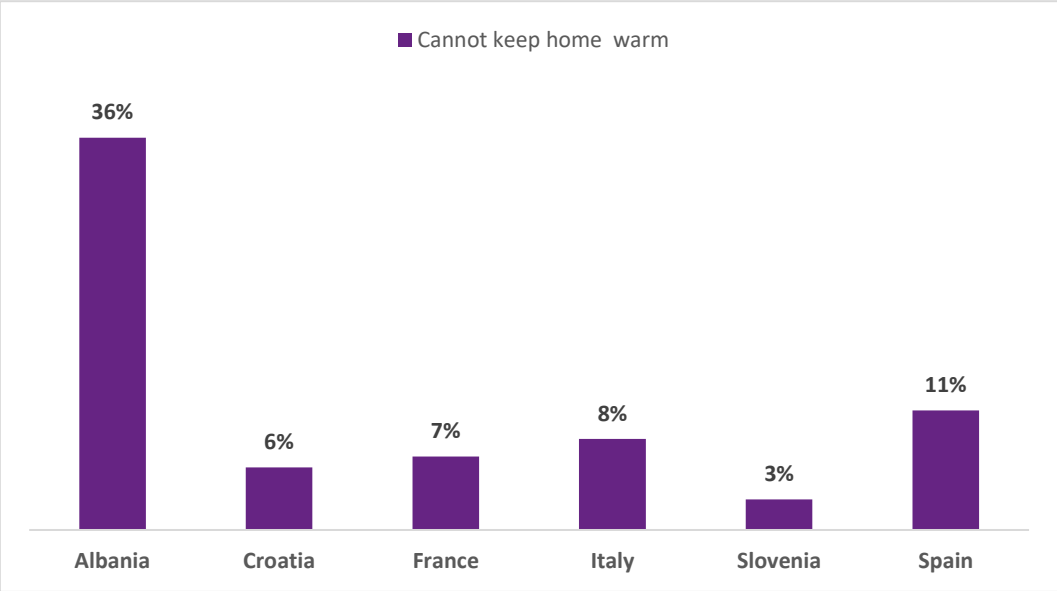
Looking at wintertime indoor temperature levels, it appears that Italy, Slovenia and France report acceptable percentages of participant households that can keep their home adequately warm during winter – although even one household that cannot keep warm is one too many. On the other hand, wintertime thermal discomfort at home is a rather big issue in Albania, Spain and Croatia.

FIGURE 10: Household can keep home adequately warm during winter



BREAK-OUT ENERGY POVERTY: Fewer households affected by energy poverty can keep their home adequately warm in winter than households not affected by energy poverty (total: 43% vs 71%).
BREAK-OUT TENANCY STATUS: Also fewer owners than renters can keep their home adequately warm (total: 50% vs 59%).

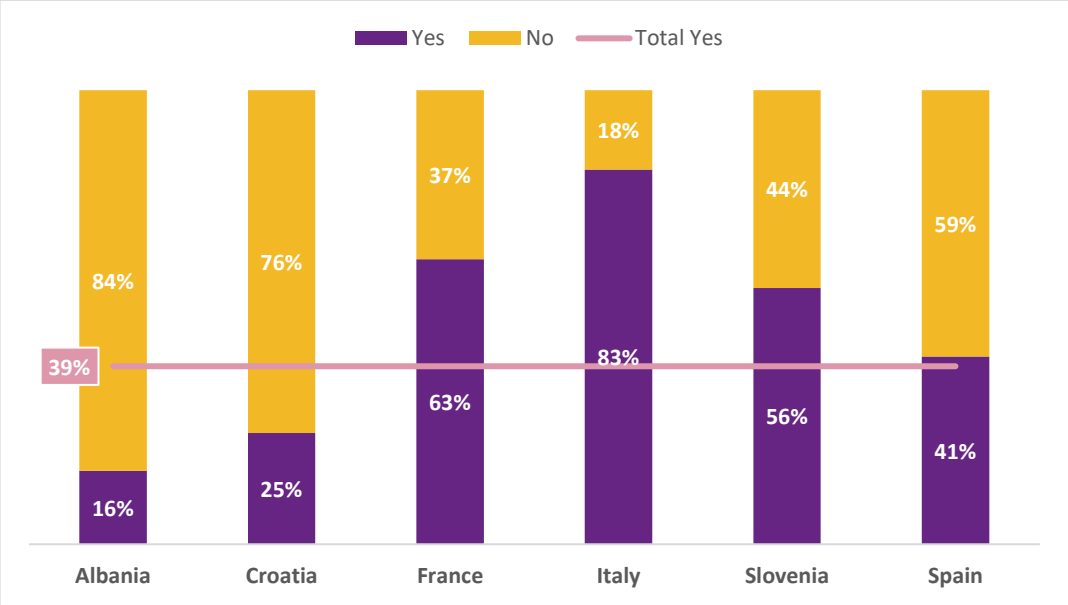
FIGURE 11: Inability to keep home adequately warm - EU-SILC survey 2020



Compared to a similar question but on national representative sample, it appears that a lot less people in the sample from the pilot regions of this study can keep their home adequately warm during winter.

Considering summer comfort levels, it seems that even less households manage to keep their home adequately cool during summer compared to adequately warm in winter. About 60% of dwellings are not equipped to deal with the summer climate. This is especially true in Albania, Croatia and also Spain.

FIGURE 12: Household can keep home adequately cool during summer



BREAK-OUT ENERGY POVERTY: Like keeping the home adequately warm in winter, less households affected by energy poverty can keep their home adequately cool during summer (total: 26% vs 61%). The difference is the biggest in Slovenia (31% vs 81%).

BREAK-OUT TENANCY STATUS: Owners have more trouble than renters to keep their home cool in summer; only 34% of them manage to do so compared to 46% of renters.

4.5 Affordability of energy

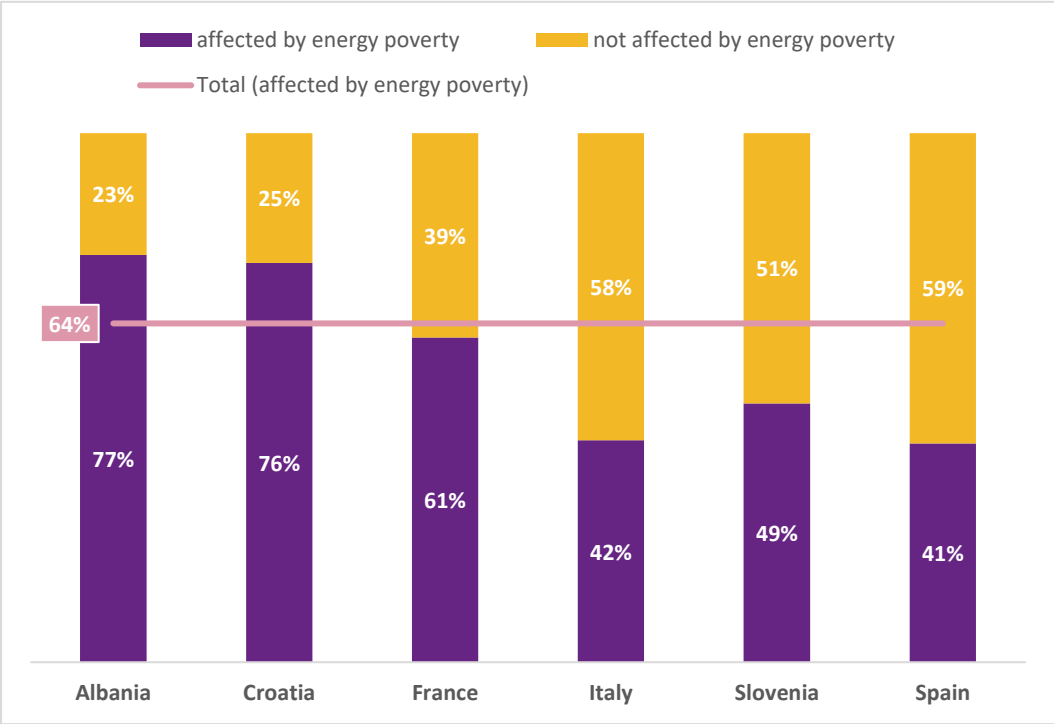
When participants need to cut back on spending to serve their electricity or heating needs, food is the first aspect that comes to their mind. Almost half of the overall sample spends less on food than they normally would if they would have the money to pay utility bills. One third of the sample also cuts back on lighting, warm water or other basic expenses.

TABLE 7: Forced cut backs in the last 12 months in order to be able to pay for electricity, gas, heating or other energy use

	Albania	Croatia	France	Italy	Slovenia	Spain	**Total**
Cut back on food purchases	▲59%	▲53%	▼32%	▼26%	▼26%	▼21%	**42%**
Cut back on lighting	▲69%	▼30%	▼32%	35%	▼14%	▼28%	**33%**
Cut back on use of warm water	▲65%	▼25%	36%	▼23%	▼23%	▼21%	**32%**
Cut back on other basic expenses	27%	▲32%	▲36%	▼10%	▲35%	▲28%	**31%**
Cut back on electrical appliance use	▲45%	30%	30%	29%	▼14%	▼17%	**28%**
Reduced window opening and ventilation	18%	▼ 9%	20%	▼10%	▲33%	▼10%	**18%**

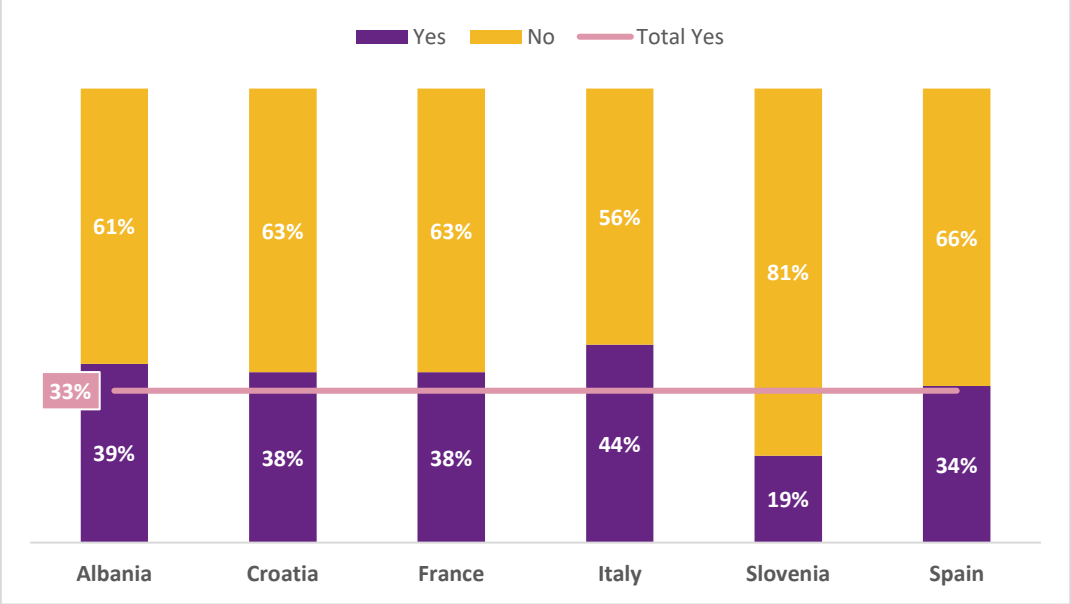
For the purposes of this analysis, we consider that every person who needs to cut back on normal spending for at least one of the mentioned items as affected by energy poverty. Following this criterion, it can be observed that two thirds of participant households are in fact affected by energy poverty. This way, there are more households affected by energy poverty in Albania and Croatia as compared to those who do not heat their entire home in winter. All in all, the combined sample of participant households in all researched pilot regions reports over 40% of people affected by energy poverty according to the results of Table 7.

FIGURE 13: Participants affected by energy poverty vs participants not affected by energy poverty



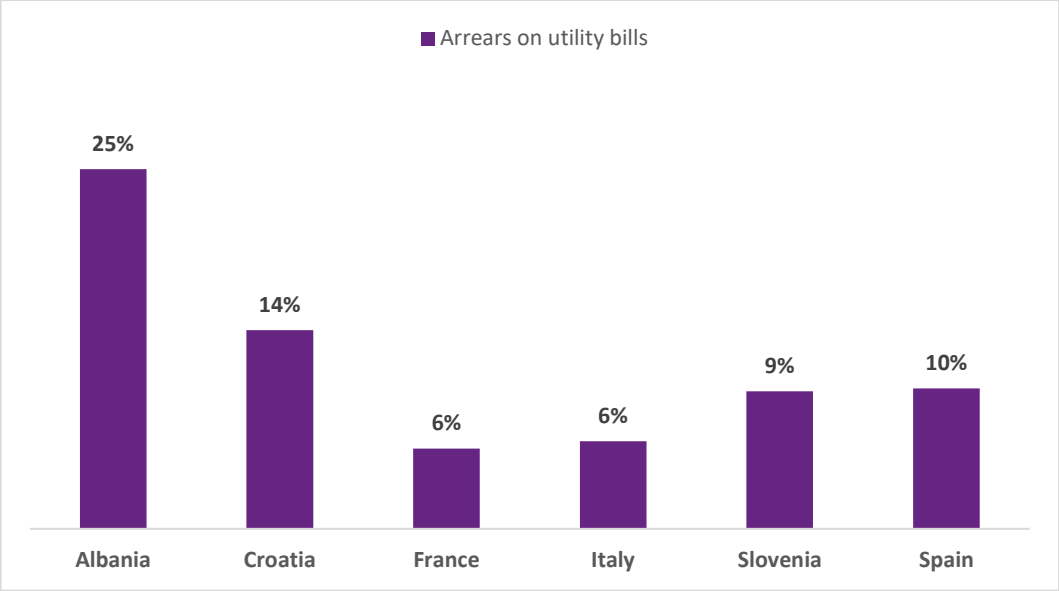
A worrying issue is that one third of all participating households has had problems with paying utility bills on time over the last 12 months. This is comparable over the countries, except for Slovenia, where this difficulty occurred less often – but still every fifth household encountered this problem.

FIGURE 14: Household has been unable to pay utility bills for the main dwelling on time in last 12 months due to financial difficulties



BREAK-OUT GENDER: Women have more often a problem with paying the utility bills than men (total: 37% vs 25%); this is mainly the situation in Albania (67% vs 14%) and also in Slovenia (21% vs 14%) and Italy (45% vs 38%).
BREAK-OUT ENERGY POVERTY: Almost half of households affected by energy poverty have a problem paying their bills compared to a minority of households not affected by energy poverty (total: 47% vs 9%). In Italy (69%), Spain (58%) and Albania (51%) this number is more than half of the sample.
BREAK-OUT TENANCY STATUS: More people that rent have been unable pay their bills than people that own (total: 41% vs 27%). This is particularly so in France (42% vs 0%) and Italy (59% vs 9%).

FIGURE 15: Arrears on utility bills (whole national population) - EU-SILC survey 2020



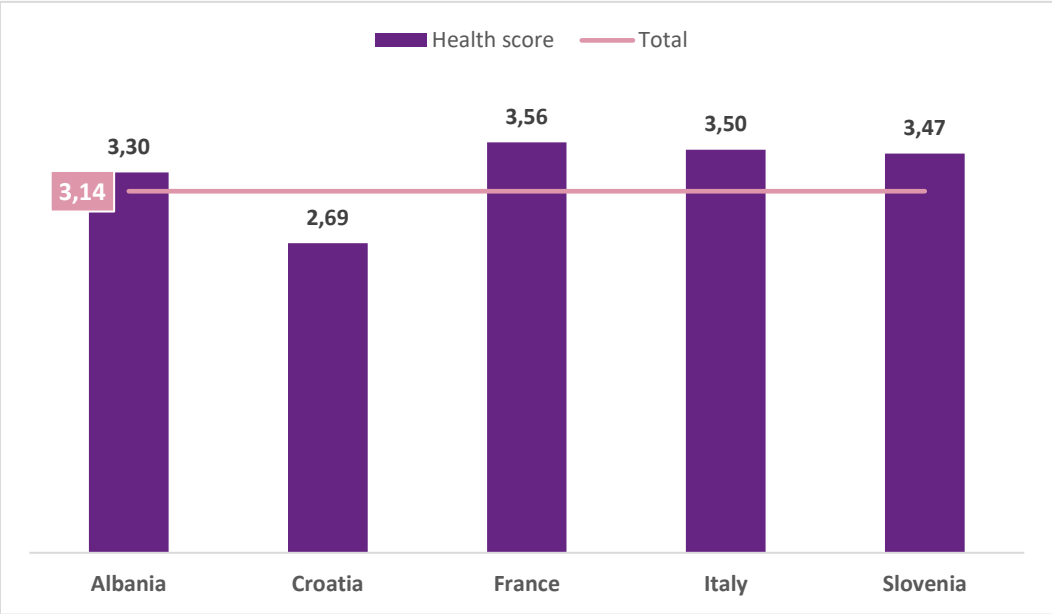
Compared to a similar question from the EU-SILC survey on a national representative sample, it appears that more people from pilot regions have issues with paying their utility bills.

4.6 Health

In this chapter, Spanish results will not be shown. As participants were reluctant to share their concerns and talk about physical and mental health in collective advisory assemblies, their answers were not recorded to respect privacy and keep the sense of trust. Instead, a smaller mutual support group was put in place in the Barcelona pilot site for participants to share the emotional burden of their everyday experience of energy poverty in a safe and trusted environment.

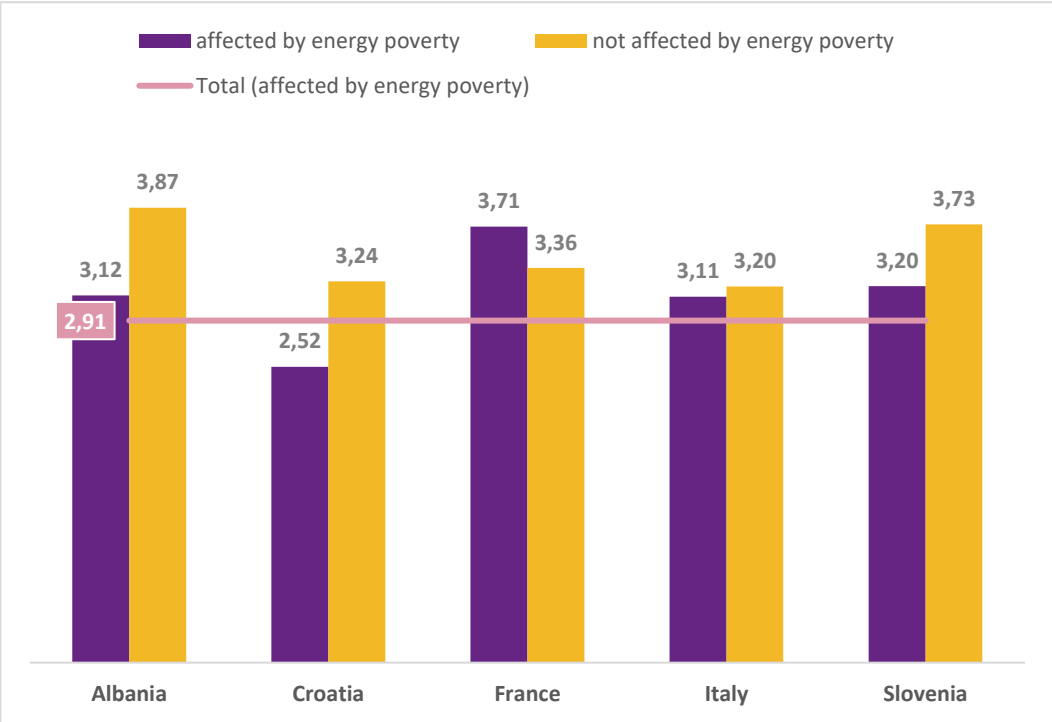
Generally, participants rate their health fairly well (but not great); in Croatia they seem to evaluate their health less well.

FIGURE 16: Health in general (5-point scale: 1= very poor, 5= very good)



BREAK-OUT ENERGY POVERTY: Clearly, there is a correlation between energy poverty and assessment of health: people that are affected by energy poverty, evaluate their health less well than people that are not affected by energy poverty (total: 2,9 vs 3,6).

FIGURE 17: Health scores of participants affected by energy poverty vs participants not affected by energy poverty (5-point scale: 1= very poor, 5= very good)



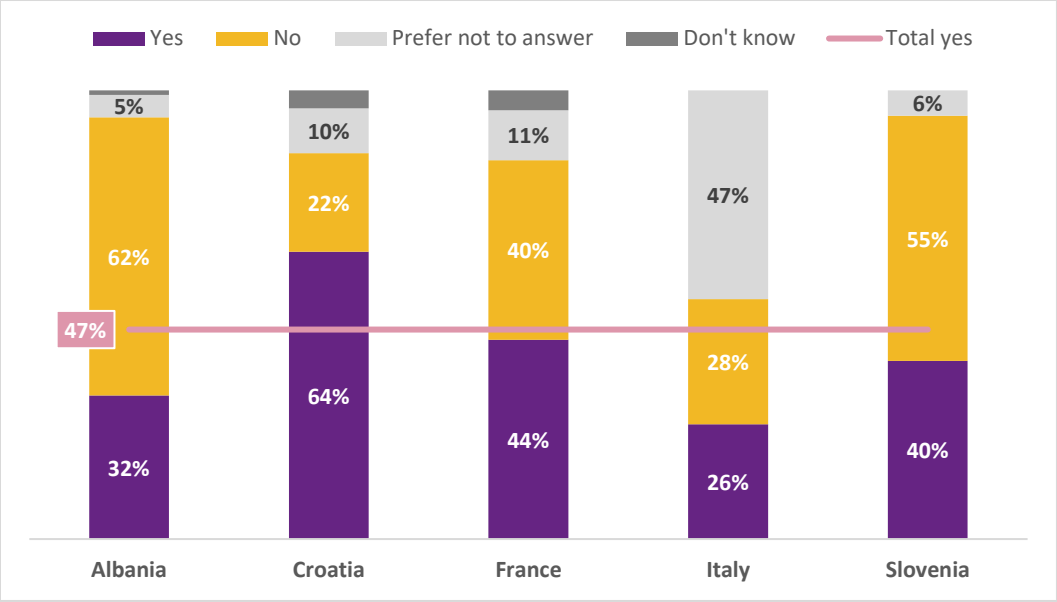
A second correlation is noted between the level of education and assessment of health: clearly the higher the education the better the health of the participants. In Croatia, the estimates are consistently lower than in other countries.

TABLE 8: Health scores by education level) (5-point scale: 1= very poor, 5= very good)

	Albania	Croatia	France	Italy	Slovenia	Total
Less than primary	3,7	2,2	3,0		4,0	**2,5**
Primary education	3,1	2,6	2,4	3,0	3,1	**2,9**
Secondary education	3,4	2,9	3,7	3,7	3,6	**3,4**
Bachelor or equivalent	3,6	3,5	3,4	3,5	3,9	**3,6**
Master or equivalent	4,0	3,2	4,7	4,3		**3,8**

Almost half of the overall sample has a longstanding illness or health problem of which the biggest share can be observed in Croatia. A number of other participants, mainly in Italy, prefer not to answer the question. In Albania and also Slovenia less respondents seem to have these problems.

FIGURE 18: Longstanding illness or health problem



BREAK-OUT ENERGY POVERTY: People that are affected by energy poverty more often indicate they have a longstanding illness or health problem than people that are not affected by energy poverty (54% vs 37%).

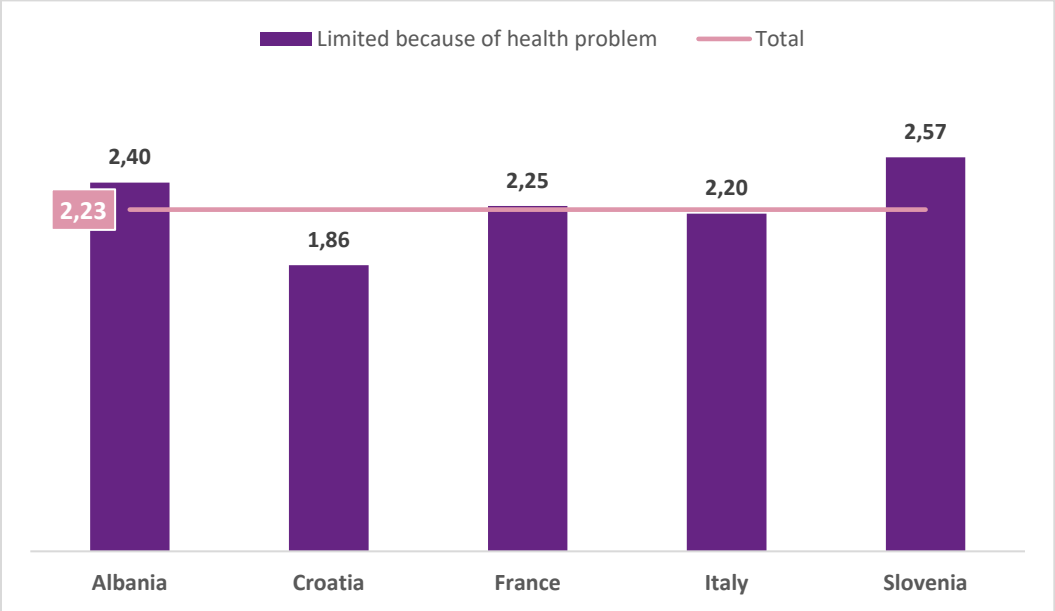
The most often chronic health issue is high blood pressure, followed by migraines depression or feeling of anxiety.

TABLE 9: Suffering from chronic disorders

	Albania	Croatia	France	Italy	Slovenia	Total
High blood pressure	50%	43%	58%	16%	18%	**37%**
Migraine or frequent headaches	28%	25%	3%	32%	2%	**18%**
Depression and / or anxiety	39%	18%	3%	5%	1%	**16%**
Chronic lumbar or dorsal back pain	22%	0%	0%	42%	10%	**9%**
Chronic bronchitis	11%	15%	0%	5%	0%	**8%**
Osteoarthritis, arthritis or rheumatism	17%	0%	0%	42%	4%	**6%**
Asthma	6%	9%	0%	16%	2%	**6%**
Osteoporosis	11%	0%	0%	11%	1%	**3%**
Angina pectoris or myocardial infarction	5%	0%	0%	5%	3%	**2%**

When participants indicated that they have a longstanding illness or health problem, they often feel they are severely limited by them.

FIGURE 19: Limitations in activities over last 6 months because of health problems (3-point scale: 1= not limited at all, 3= severely limited)



BREAK-OUT ENERGY POVERTY: People affected by energy poverty less often feel they are limited in their activities because of the health problem than people that are not affected by energy poverty (total: 2,1 vs 2,5)

Generally speaking, the participants in France, Italy and Slovenia have been feeling mentally rather well, while in Croatia and Albania they have felt less well.

TABLE 10: Feeling over last two weeks (6-point scale: 1= at no time, 6= all the time)

	Albania	Croatia	France	Italy	Slovenia	**Total**
I have felt cheerful and in good spirits	2,7	3,3	4,3	4,6	4,5	**3,6**
I have felt calm and relaxed	3,1	3,2	4,0	4,0	4,5	**3,6**
I have felt active and vigorous	2,8	2,8	4,1	4,5	4,2	**3,4**
I woke up feeling fresh and rested	2,5	2,8	4,0	4,1	4,1	**3,2**
My daily life has been filled with things that interest me	2,4	3,3	4,4	4,0	4,6	**3,6**

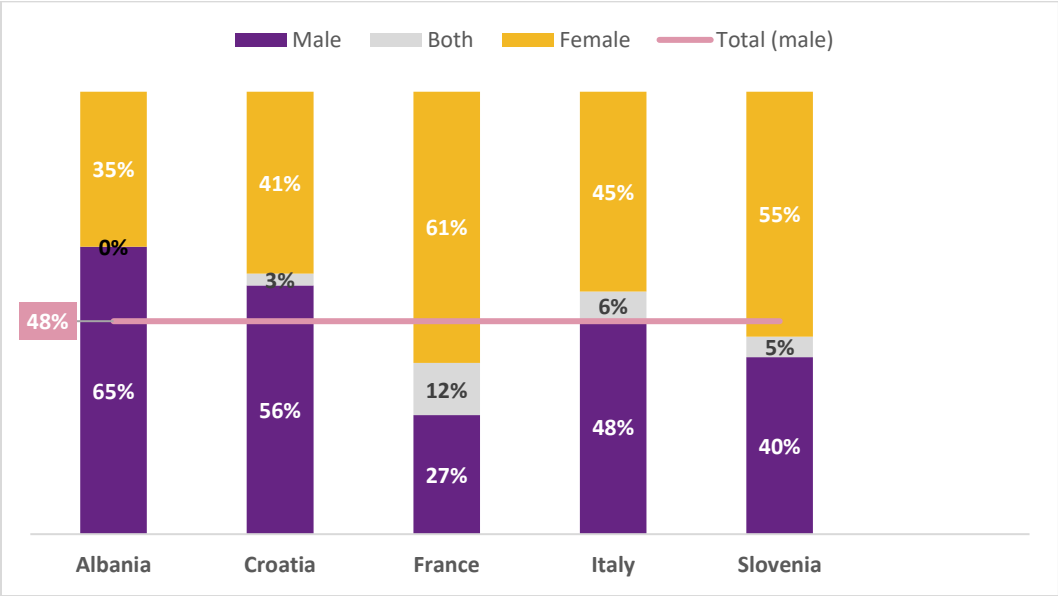
BREAK-OUT ENERGY POVERTY: On all above statements the results of people affected by energy poverty are lower than those of people not affected by energy poverty. Clearly being affected by energy poverty has an impact on one's mental wellbeing.

- Cheerful and in good spirits: 3,3 vs 4,2
- Calm and relaxed: 3,4 avg vs 4,2
- Active and vigorous: 3,1 avg vs 3,9
- Feeling fresh and rested 2,9 avg vs 3,8
- Life being filled with things that interest me: 3,3 vs 4,2

4.7 Empowerment

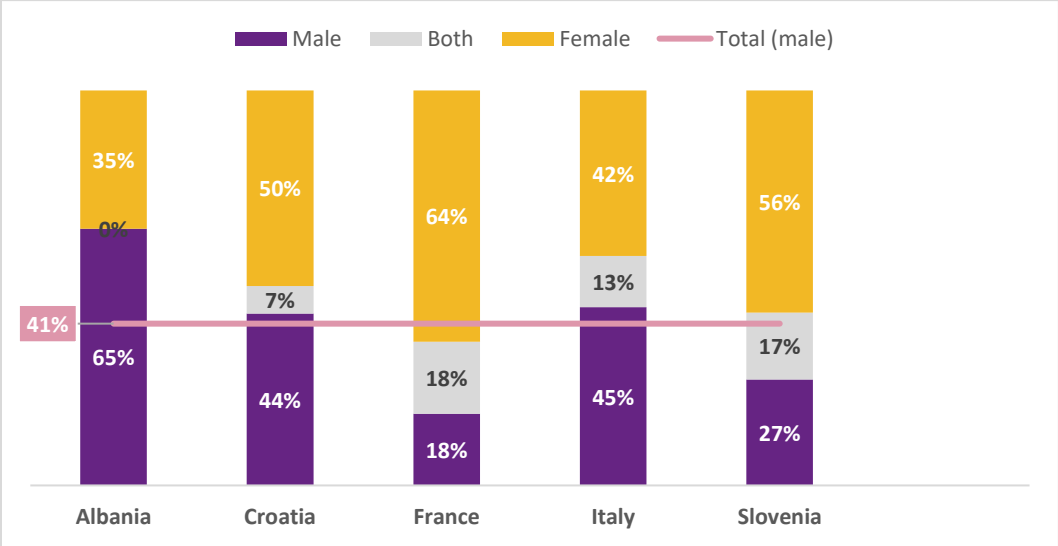
Contracts are not often in the names of both partners. About half of the sample has them in the name of the man, more often so in Albania, and half of the sample in the name of the woman, more often so in France.

FIGURE 20: Contracts with energy and water supliers in household are in name of …



The results are pretty much in line with whose name is on the contract: the same person is almost always in charge of paying the utility bills. There is also a bigger share of both partners paying the bills.

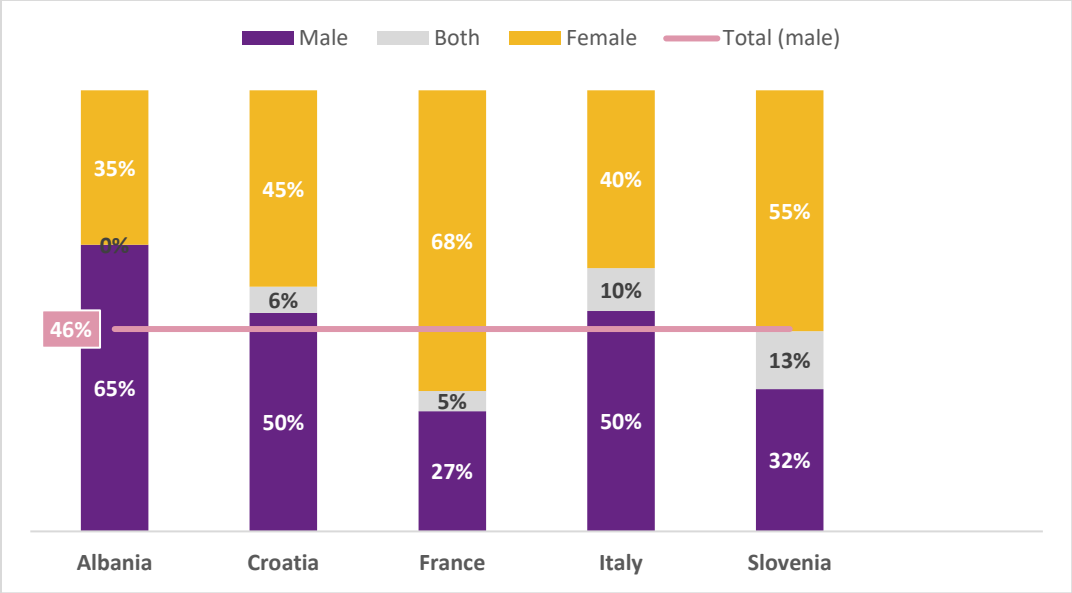
FIGURE 21: In charge of paying bills



BREAK-OUT ENERGY POVERTY: In the aspect of paying the bills, it appears that more often both partners pay the bill for people not affected by energy poverty than that the same happens in households affected by energy poverty (total: 17% vs 5%).

Also when it comes to contacting energy or water suppliers, the results are rather similar.

FIGURE 22: In charge of contacting energy and water suppliers



The French participants feel more confident than others about their knowledge of energy prices and measures on saving energy or money, while participants in Slovenia and Croatia lag somewhat behind in that regard.

TABLE 11: Feeling confident in following situations (5-point scale: 1= not at all, 5= yes, fully)

	Albania	Croatia	France	Italy	Slovenia	**Total**
I feel confident about whether my energy consumption is higher or lower than normal for my type of household	▲ 3,8	▼ 2,4	▲ 3,7	▼ 2,9	▼ 2,6	**3,0**
I feel confident about my current energy price that I am not paying too much	▲ 3,9	▼ 2,8	▲ 3,5	▼ 2,9	▼ 2,6	**3,0**
I feel confident on how to save energy	▼ 1,8	▼ 2,1	▲ 3,1	2,3	▼ 2,1	**2,1**
I feel confident to help others saving on their energy bill	▼ 2,2	2,7	▲ 3,6	▲ 3,4	▼ 2,6	**2,7**
I am aware of how different energy tariffs can be used to lower my energy bill	3,2	▼ 2,1	▲ 3,8	3,0	2,9	**2,7**

CONCLUSIONS

Given the differences in the type of samples over the countries (urban vs rural, living in single-family house vs living in a multi-apartment building, …) and the variation in number of participant households (from 28 in one country to 200 in another), the cross-pilot site analysis presented does not allow drawing very general conclusions. Nevertheless, a number of relevant findings are worth sharing.

People living in multi-apartment buildings more often live in social housing and also receive more often social welfare than people living in a single-family house. However, as these households also encounter a lot of difficulties in accessing support schemes, more attention should be offered to incorporating them in social welfare systems. Since people living in single-family houses often own the dwelling but cannot maintain it properly, they less often do refurbishments or apply less energy saving measures than people in multi-apartment buildings. They almost never heat the entire dwelling because their homes are larger than apartments and do not have the financial means to do so. People in multi-apartment buildings, on the other hand, are more often occupied by renters and cannot decide for themselves to invest in their dwelling: they are dependent on the owner for that. When such investments are made, mostly it is new windows or installing energy efficient appliances. But more investments in refurbishing would be necessary: only 18% of reported dwellings across pilot sites have been refurbished in recent years while almost half have problems with draught (48%), and over a quarter have issues with rot in window frames and floors (28%) or have damp floors, foundation and walls (27%).

It also appears that most participants cannot afford energy efficiency measures by themselves since many are in financial difficulties as painstakingly illustrated by the 34% of the overall sample that manages to heat their entire dwelling. This becomes even more clear when analyzing their energy bill: almost half of the overall sample spends less on food than they normally would in order to be able to pay their utility bills. Another third also cuts back on lighting, warm water or other basic expenses. Proof of these financial difficulties can be found in the fact that one third of participating households has had problems with paying utility bills on time over the last 12 months.

If we define – for the purpose of this analysis – every person that needs to cut back on normal spending for at least one mentioned item as affected by energy poverty, it can be observed that two thirds of the overall sample are in fact affected by energy poverty. In comparison, over 40% of people do not heat their entire home in winter.

While only slightly over half of the overall sample (54%) can keep their dwelling adequately warm in winter, even less participants (39%) can keep their home adequately cool in summer. Theses result suggest that summer thermal comfort quite a significant issue from an energy poverty perspective – even more so in view of climate change and the ever more recurrent heat waves to be endured in the Mediterranean in coming decades.

When taking a look at health, there is a correlation between energy poverty and assessment of health: people that are affected by energy poverty display lower levels of

self-reported health than people that are not affected by energy poverty. This finding goes for physical as well as mental health.

GENDER

When looking at gender, it is clear that most single parent families are headed by women. Women-led single-parent households who receive social welfare and live in social housing more often than men-led. As they often do not have the means to own a home, they more often are forced to rent (men more often own with a mortgage), and importantly they seem more energy vulnerable as they have had more problems than men to pay their utility bills in the last 12 months. Attention to this situation should be given so they can get more support and structural solutions should be offered to improve their circumstances.

PEOPLE AFFECTED BY ENERGY POVERTY VS PEOPLE NOT AFFECTED

A first important indicator is that participants affected by energy poverty (as defined in this analysis) live more often alone or are more often a single parent than participants not affected by energy poverty. They also receive more often social welfare and live more often in social housing. Regarding their dwelling, participants affected by energy poverty more often live in a single-family house with building issues (draught, mould, …), which they cannot refurbish or invest in energy efficiency measures because they do not have the means for it. Therefore, their health – both physical and mental – is more likely to be jeopardized than the health of participants not affected by energy poverty. Since they need to cut back on other basic spending, like food, lighting, warm water, etc in order to be able to pay their utility bills, they cannot keep their dwellings adequately warm in winter or cool in summer. In many cases they cannot afford to heat their entire home. Being a single-parent household with children and only one breadwinner and no adult partner to share utility costs increases the likelihood of being affected by energy poverty.

TENANCY STATUS

Participants that rent the home where they live are more often recipients of social welfare than owners and many of them live in social housing. Renting also means having less influence on solving possible problems in the dwelling or in investing in energy saving measures. This means that the monthly utility costs of renters is often higher than owner-occupiers') and that they report more problems in paying their utility bills on time.

Annex 1: Questionnaire

General information

O1. What is your gender?
□ Female □ Male □ Other (if person is not comfortable with normative gender binary identities)

O2. What is the level of completed formal education?

□ Less than primary education
□ Primary education
□ Secondary education
□ Short-cycle tertiary education
□ Bachelor or equivalent
□ Master or equivalent
□ Doctoral or equivalent

Household situation

O3. Specify the number of people in the household depending on age and gender:

Age/Gender	Woman	Man	Other (if person is not comfortable with normative gender binary identities)
Minors (0-17)			
Adults (18-64)			
Elderly (65 +)			

O4. What type of household are you?
□ Single-person household
□ Couple with children
□ Couple without children
□ Single-parent family
□ Two or more non familiar persons
□ Other

O5. Are you a recipient of public social welfare?
□ Yes □ No

O6. Are you accommodated in social housing?
□ Yes □ No

O7. Thinking of your household's total income, is your household able to make ends meet,

that is pay your usual expenses...
☐ With great difficulty
☐ With difficulty
☐ With some difficulty
☐ Fairly easily
☐ Easily
☐ Very easily

Building

O8. In what type of dwelling do you live?
☐ Single-family house
☐ Multi-apartment building
☐ Commercial space
☐ Other (please describe): _____

O9. What is the tenancy status of your dwelling?
☐ We own the dwelling with a mortgage
☐ We own the dwelling without a mortgage
☐ We rent it
☐ We recovered or occupied the dwelling
☐ Other (please describe):_____

O10. Size of the dwelling _____ m2

O11. If you heat or cool, do you heat or cool the entire dwelling or only some rooms?
□ Entire dwelling □ Only some rooms

O12. Have you done any refurbishing in your dwelling in recent years?
□ Yes □ No

O13. If yes, what? _____

O14. Have you applied energy saving and / or efficiency measures in recent years?
□ Yes □ No

O15. If you answered yes, could you tell us which ones?
□ New windows
□ New heating system
□ Floor, wall or roof insulation
□ Thermal solar panels
□ New energy efficient electrical appliances, e.g. changing bulbs, new fridge or washing machine
□ Other (please describe):_____

O16. Do you use any renewable energy sources at home?

□ Yes □ No

O17. If yes, what?
□ Solar thermal
□ Solar photovoltaics
□ Geothermal
□ Biogas
□ Biomass
□ Wind
□ Renewable electricity supply contract
□ Other (please describe):_____

O18. Do you have any of the following problems in your dwelling?
□ Leaking roof
□ Damp walls/floors/foundation
□ Rot in window frames or floor
□ Draught from windows or doors

O19. Does your dwelling have any isolation?
□ Walls
□ Roof
□ Floor
□ All
□ Other (please describe):_____
□ No isolation
□ I do not know

Comfort and heating/cooling equipment

O20. How would you assess your summer thermal comfort?

1	2	3	4	5	6	7	8	9	10
Unsatisfactory									Completely satisfactory

O21. How would you assess your winter thermal comfort?

1	2	3	4	5	6	7	8	9	10
Unsatisfactory									Completely satisfactory

O22. What heating system do you have in your dwelling?
□ Pre-payment meter for electricity
□ Electric heating
□ Pre-payment meter for heating
□ Bottled gas heating
□ Gas heating
□ Air pump heating
□ District or (building) central heating
□ Coal heating

□ Petroleum/oil heating
□ Firewood heating
□ Other (please describe):_____
□ None

O23. What cooling system do you have in your dwelling?
□ Fan
□ Mobile air conditioning
□ Air conditioning in a room
□ Air conditioning in more than one room
□ Centralized system
□ Other (please describe):_____
□ None

Energy bill

O24. What is the situation of your supplies?

	Supply is contracted under my/our name	Supply is contracted under someone else's name	Irregular connec-tion	Supply cut warning	Supply already disconnect ed	I have accummu-lated debt	Does not apply / I don't have this supply or service
Water							
Electricity							
Gas							
Heating							

O25. In order to be able to pay for electricity, gas, heating or other energy use in the home, has your household been forced to do the following in the last 12 months?
□ Cut back on food purchases
□ Cut back on use of warm water
□ Cut back on lighting
□ Cut back on electrical appliance use
□ Cut back on other basic expenses (e.g. medicines, clothes…)
□ Reduced window opening and ventilation

O26. Can your household afford to keep its home adequately warm?
□ Yes □ No

O27. Can your household keep home comfortably cool during summer time?
□ Yes □ No

O28. In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water,

etc.) for the main dwelling?
□ Yes □ No

Health

O29. How is your health in general?
□ Very good
□ Good
□ Fair
□ Poor
□ Very poor
□ Don't know
□ Prefer not to answer

O30. Do you have any longstanding illness or health problem?
□ Yes
□ No
□ Don't know
□ Prefer not to answer

O31. Do you suffer or have you suffered from any of the following chronic disorders?
□ High blood pressure
□ Asthma
□ Chronic bronchitis
□ Migraine or frequent headaches
□ Depression and / or anxiety
□ Angina pectoris or myocardial infarction
□ Osteoarthritis, arthritis or rheumatism
□ Osteoporosis
□ Chronic lumbar or dorsal back pain

O32. For at least the past six months, to what extent have you been limited because of a health problem in activities people usually do? Would you say you have been …
□ Severely limited
□ Limited but not severely
□ Not limited at all
□ Don't know
□ Prefer not to answer

O33.

Over the last two weeks:	All the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
I have felt cheerful and in good spirits						

I have felt calm and relaxed						
I have felt active and vigorous						
I woke up feeling fresh and rested						
My daily life has been filled with things that interest me						

Empowerment

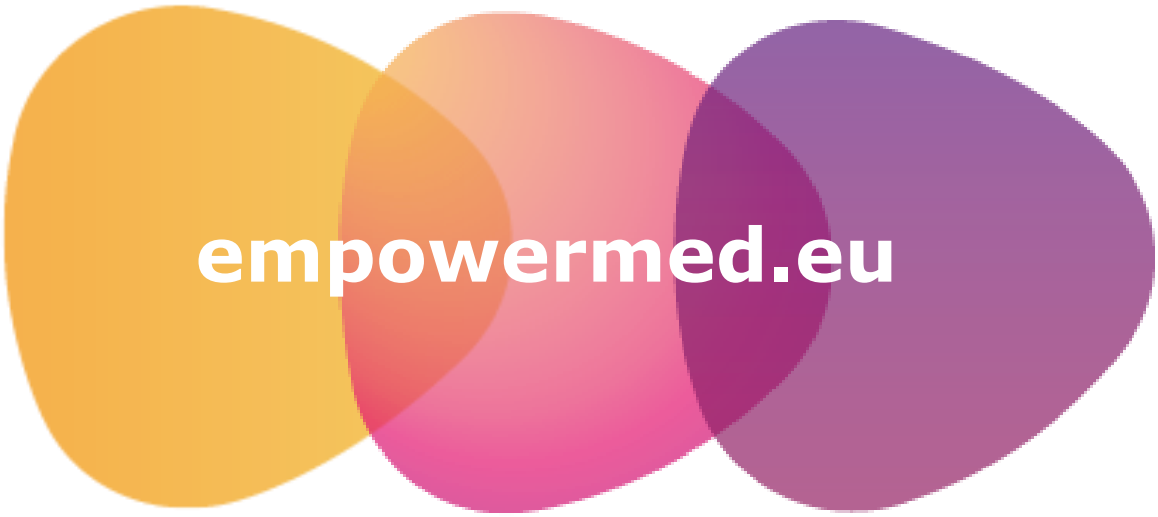
O34. Under whose name are contracts with energy and water suppliers in your household?
□ Woman □ Man □ Both

O35. Who is in charge of paying the bills?
□ Woman □ Man □ Both

O36. When it comes to contacting energy and water suppliers, who is in charge?
□ Woman □ Man □ Both

O37. How confident do you feel over the next situations?

	Not at all	A little	Somehow	Yes, to some extent	Yes, fully	Not relevant
I feel confident about whether my energy consumption is higher or lower than normal for my type of household						
I feel confident about my current energy price that I am not paying too much						
I feel confident on how to save energy						
I feel confident to help others saving on their energy bill						
I am aware of how different energy tariffs can be used to lower my energy bill						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