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D5.7 Quantifying the increase in energy awareness of students living in private accommodation in academic year #3

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Authors:

Vasileios Ntouros	National and Kapodistrian University of Athens (NKUA)
Marina Laskari	National and Kapodistrian University of Athens (NKUA)
Panagiotis Tassios	National and Kapodistrian University of Athens (NKUA)
Michalis Bouzos	National and Kapodistrian University of Athens (NKUA)
Margarita-Niki Assimakopoulos	National and Kapodistrian University of Athens (NKUA)
Rachel Soper	National Union of Students UK (NUS-UK)
Joanna Romanowicz	National Union of Students UK (NUS-UK)

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Executive Summary

The Student Switch Off+ (SSO+) campaign aims to raise awareness among students living in private accommodation, in particular focusing on those that rent accommodation, helping them reduce their energy costs. It focuses on making students aware of energy performance certificates (EPC), smart meters and energy efficiency, thus helping reduce their exposure to fuel poverty.

The SSO+ campaign runs in 81 universities in seven European countries - Bulgaria, Cyprus, Greece, Ireland, Lithuania, Romania and the United Kingdom. This academic year, 2019-20, is the second academic year that SSO+ has been rolled out in Bulgaria, Ireland and Romania. In Cyprus, Greece, Lithuania and the UK the SSO+ campaign was first rolled out in the 2017-18 academic year. Activities undertaken as part of the Student Switch Off+ campaign involve in-depth information on saving energy at home, Energy Performance Certificates, energy efficiency and smart energy meters. Activities undertaken as part of the Student Switch Off+, are summarised in the country specific reports found on the SAVES 2 webpage (https://saves.nus.org.uk/).

The aim of this research is to assess the impact of the Student Switch Off+ (SSO+) information campaign on students living in private accommodation. The impact of the SSO+ campaign is evaluated through the level of increased awareness on the two following areas:

a) Use of smart meters
b) Housing choices that can minimize exposure to fuel poverty

Changes in the awareness levels of students were evaluated through pre- and post-intervention questionnaire surveys. Students were encouraged to complete a baseline survey (pre-intervention) at the beginning of the academic year (October 2019) in order for existing information and awareness levels to be recorded, and a follow-up survey (post-intervention) at the end of the academic year (May 2020). The questionnaires were distributed either through university mailing lists and students' social media pages or as hardcopies through face to face communications. At the end of the academic year the pre- and post-intervention surveys were analyzed to identify changes that could be attributable to the project.

Out of the 7,881 that opened the survey, 6,258 were considered for the analysis. These students lived in private accommodation and answered at least one SSO+ specific question. Three thousand four hundred and thirty-two (3,432) students participated in the baseline survey and two thousand eight hundred and twenty-six (2,826) students participated in the follow-up survey.

Evidence of the research presented in this report suggests that a good proportion of students retained many of the messages of the campaign. In summary, the main findings of this report are presented below.

Familiarization with the SSO+ campaign
At the end of the academic year a statistically significant increased share of respondents (+3%) had heard about the SSO+ campaign compared to the beginning of the academic year. The share of respondents that had heard of the SSO+ campaign was 48% in the follow-up survey and 45% in the baseline. At the end of the academic year, statistically significant increased proportions of students from Cyprus (+17%), Ireland (+12%) and Lithuania (+6%) had heard of the SSO+ campaign compared to the beginning of the academic year.

Sources of information about the SSO+ campaign
At the end of the academic year the most popular sources of information about the SSO+ campaign were emails (54%), social media (37%) and posters (30%). Fifteen percent of those questioned were informed from seminars, while only 7% of those surveyed reported they had heard about the SSO+ campaign from a friend or from a classmate. The sources of information with the most important positive difference over the academic year were emails (+11%) and social media (+4%).

Influence of SSO+ campaign
Overall, 81% of the follow-up respondents were influenced by SSO+ in a positive way. Two-thirds of the respondents (66%) were made aware of how to reduce their energy costs and 41% were made aware of how to be energy efficient. Moreover, the end of the academic year results showed that the SSO+ campaign influenced the participants to become aware about Energy Performance Certificates (EPCs) (18%), smart meters (18%) and helped them to select energy-efficient house appliances (18%). In addition, 12% of the respondents were made aware through the SSO+ campaign that they had a choice of energy providers and tariffs.

Perceived level of information
Overall, respondents of both surveys felt rather neutrally informed about the energy they personally consume in their home, about the impact their energy saving measures have on their energy bill, and about the impact of cold homes on their health and wellbeing. Respondents' perceived level of information about the impact that energy saving solutions can have to help reduce global warming and about what they can do to personally save energy in their accommodation was rather positive while improvements could be made to the level of information about their tariff choices and rights for choosing and changing their energy provider.

By the end of the academic year, statistically significant increases were observed, in the total sample's level of information about the impact that energy saving solutions can have to help reduce global warming (+4%) and about the choices of tariffs that respondents had (+3%). Moreover, it is encouraging that at the end of the year the perceived level of information regarding the impact of cold homes on their health and well-being, was increased significantly by +3%.

Habits and practices
The frequency that any action was taken did not change drastically over the academic year. The actions taken more frequently at the end of the academic year were: "Switched off lights and appliances when not in use", "Only wash clothes when you have a full load" and "Allow food to cool down before putting it in the fridge". Actions taken less frequently were: "Leave the heating on when you go out for a few hours", "Defrost the fridge frequently", and "Leave your PC or TV on standby for long periods of time at home".

Moreover, the findings of the follow-up survey revealed some practices that respondents from different countries have in common. According to the follow-up survey, the most frequent action respondents from Ireland, Lithuania and the UK undertook, was to wash their clothes only when they had a full load; in Cyprus and Greece, respondents switched off lights and appliances when not in use while in Bulgaria and Romania respondents allowed cooked food to cool down before putting it in the fridge. On the other hand, respondents from Cyprus, Greece and Ireland rarely left the heating on when they were out of their homes for a few hours.

Actions taken to reduce energy costs
The most popular responses in both surveys were "Took actions to reduce my energy usage" and "Worn outdoor wear or more clothes to keep the heating down in your home" while both actions had a statistically significant increase between the two surveys of +5% and +3 % respectively. Moreover, even though there was a fair share of the respondents in the baseline survey that didn't take any action towards energy saving (24%), a statistically significant decrease of -3% in this share was observed at the end of the academic year.

The biggest share of follow-up respondents in Bulgaria (53%) Cyprus (49%), Greece (36%), Ireland (63%), Romania (55%) and Lithuania (33%) reduced their energy costs by reducing their energy usage, while in the UK (67%), the majority of respondents reduced their energy costs by wearing outdoor wear.

Feelings about saving energy
The highest share of respondents in both the follow-up (35%) and the baseline (36%) surveys, felt optimistic about energy saving. The second most popular feeling, which also presented a statistically significant increase of +2% at the end of the year, was the feeling of contentment (23% Follow- up; 21% Baseline) suggesting that overall respondents had positive feelings towards saving energy.

At the end of the academic year 67% of those respondent in Bulgaria, 71% of those surveyed in Cyprus, 62% of those questioned in Lithuania, 53% of the Irish respondents, 56% of the participants from the UK as well as 66% and 85% of those questioned in Greece and in Romania respectively, described their feelings about saving energy in a positive manner [Optimistic, Proud, Content].

Behavioral antecedents
In all countries, respondents in both surveys agreed on a) energy conservation contributes to a reduction of climate change impacts, b) everyone including their self is responsible for climate change, and c) they feel morally obliged to save energy, regardless of what others do.

In Bulgaria, Ireland, Romania and the UK, respondents agreed the most on that "everyone including myself is responsible for climate change". In Greece and Cyprus, respondents agreed the most that "energy conservation contributes to a reduction of climate change impacts". In Lithuania respondents agreed the most with the

statement "I feel jointly responsible for the exhaustion of energy sources". Furthermore, in all individual countries respondents disagreed with the statement "saving energy is too much of a hassle''.

Statistically significant differences in agreement levels between the two surveys were found for the statements: a) "I feel jointly responsible for the exhaustion of energy sources" (-2%), b) "I can reduce my energy use quite easily" (+2%), c) "Most people who are important to me try to pay attention to their energy use" (+2%), d) "I feel morally obliged to save energy, regardless of what others do" (+2%).

Important criteria when choosing appliances
The top three criteria for choosing appliances were the same in both the baseline and the follow-up survey. Those were: first "Cost of appliance", second "Functionality of the appliance" and third "Energy efficiency and /or energy certification score of the appliance". The proportion of respondents that would choose an appliance based on its "energy efficiency and /or energy certification score" and its "functionality" was increased by +2% and +3% respectively at the end of the academic year.

Smart meters
Regarding smart meters, in both surveys almost half of the respondents had heard of smart meters before (48%), with the highest share of respondents who had heard of smart meters before being found in the UK (86%) recording a statistically significant increase of +8% over the academic year.

Throughout the academic year the share of respondents who stated that they had heard of smart meters before and had a smart meter in their accommodation at that time, didn't change hugely (+2%) while the proportion of those who, although they didn't have a smart meter, were willing to have one remained unchanged (37%). Eventually, the share of those who didn't know if they have a smart meter installed in their current accommodation reduced by -2% at the end of the academic year.

Overall, respondents in both the baseline and the follow-up survey had positive opinions about smart meters while these opinions remained unchanged over the academic year. In fact, in all countries respondents in both surveys agreed the most with the positive impacts of the smart meters whereas they disagreed that smart meters are an invasion of privacy.

Energy Performance Certificate
In the baseline survey, less than half of the respondents had heard of an EPC before while at the end of the academic year this proportion increased by +7%, with the observed increase being in fact statistically significant. In all countries except for Bulgaria the share of respondents that knew about EPCs was higher at the end of the academic year whereas the increase was statistically significant in Greece, Romania and the UK.

In the follow-up survey the share of those surveyed that saw the EPC of their current accommodation before moving in was 24%, which remained unchanged over the academic year. On the contrary, 41% of the follow-up respondents (-3% less than in baseline) stated that they didn't see the respective certificate. In addition, 24% of the respondents in the follow-up survey couldn't remember if they saw the EPC of their current accommodation before moving in (+1% more than in baseline) whereas the share of the respondents who answered that the EPC of the accommodation was not available recorded a statistically significant increase of +2%.

Finally, the percentage of respondents who will consider the EPC when selecting their next accommodation is encouraging, since more than 70% of the respondents in each country except in the UK (58%), stated that they will take the EPC into account when selecting their next accommodation.

Rebound and spillover effects of the SSO campaign
The SSO+ campaign is brought together with the Student Switch Off (SSO) campaign through the SAVES 2 project (https://saves.nus.org.uk/). The Student Switch Off (SSO) campaign is an inter-dormitory energy-saving campaign that focuses on a predefined set of activities, encouraging students to save energy in their dormitories. Students aware of the SSO campaign through their stay in the dormitories in past years, but in this academic year (2019-20) lived in private rented accommodation (in a privately rented house/flat or rent a room in their landlord's house/flat), were separated from the follow-up survey sample and compared against students who were not aware of the SSO campaign. The differences in the energy awareness levels of the two

respondent groups were assessed in order to allow the study of any occurrences of rebound or spillover effects of the SSO campaign.

Overall, respondents who were aware of the SSO campaign felt better informed about all the issues that involved the energy and environmental performance of their home. In addition, respondents who were aware of SSO undertook all questioned energy saving practices, except for defrosting the fridge frequently and switching off lights and appliances when not in use, more frequently than those who were not aware of the SSO campaign. Furthermore, higher shares of those who were aware of the SSO campaign took all actions to reduce their energy costs whilst in their current accommodation except for the actions of approaching their landlord to buy more energy efficient appliances or buying some themselves.

The analysis also revealed that those who were aware of the SSO campaign showed a stronger agreement with most of the given statements about energy related issues. On the other hand, the same group of students didn't feel as jointly responsible for the exhaustion of energy sources as those who were unaware of the SSO campaign and agreed more that saving energy means they have to live less comfortably.

Eighty three percent (83%) of those who were aware of the SSO campaign, (+35% more than those that were unaware, statistically significant difference), stated that they had heard of smart meters before. In addition, 23% of those who were aware of the SSO campaign (+8% more than those who were unaware) stated that they had a smart meter in their current accommodation.

With regard to the Energy Performance Certificate (EPC), 74% of those who were aware of the SSO campaign had heard of an EPC before (+25% more than those who were unaware of the SSO campaign; statistically significant difference). Moreover, 45% of those who were aware of the SSO campaign, (+20% more than those who were unaware of the SSO campaign) stated they had seen the EPC of their current property before they moved in. Finally, 59% of those who were aware of the SSO campaign and 65% of those who were not aware of the campaign reported that they will take the EPC score of the property into account when selecting their next accommodation.

1 Introduction

The Student Switch Off+ (SSO+) campaign aims to raise awareness on energy among students living in private accommodation, helping them reduce their energy costs. It focuses on making students aware of energy performance certificates (EPC), smart meters and energy efficiency, thus helping reduce their exposure to fuel poverty.

The SSO+ campaign is brought together with the Student Switch Off (SSO) campaign through the SAVES 2 project (https://saves.nus.org.uk/). The Student Switch Off (SSO) campaign is an inter-dormitory energy-saving campaign that focuses on a predefined set of activities, encouraging students to save energy in their dormitories. The focus of this report is on the SSO+ campaign.

SSO+ ran for the first time as a pilot in Cyprus, Greece, Lithuania and the UK in the academic year 2017-18. In academic year 2018-19 the SSO+ campaign was rolled out fully in Cyprus, Greece, Lithuania, the UK but also in three additional countries: Bulgaria, Ireland, and Romania. Activities undertaken as part of the Student Switch Off+ campaign involve in-depth information on saving energy at home, energy performance certificates, energy efficiency and smart energy meters. Activities undertaken as part of the Student Switch Off+ are summarised in the country specific reports found on the SAVES 2 webpage (https://saves.nus.org.uk/). In total, this academic year 60,836 students living in private accommodation were emailed with advice on SSO+ while the average reach of social media communications was 18,902.

The purpose of the research presented in this report is to evaluate the increase in the energy awareness of students over academic year 2019-2020 that could be attributed to the SSO+ campaign.

The methodology followed for the assessment of the increase in energy awareness of students is described in Chapter 2. The main tools for the collection of data were pre- and post-intervention questionnaire surveys. Chapter 3 presents the findings of the analysis performed on the collected data. In Chapter 4 the occurrences of rebound or spillover effects of the SSO campaign on students who previously had lived in university accommodation are discussed. In Chapter 5 the main conclusions of the research for this academic year are presented. The full evaluation reports for the previous years (academic years 2017-2018 and 2018-2019) are found on the SAVES 2 webpage (https://saves.nus.org.uk/) .

2 Methodology

The aim of this research is to assess the impact of the Student Switch Off+ (SSO+) information campaign on students living in privately rented accommodation. The impact of the SSO+ campaign is evaluated through the level of increased awareness in the two following areas:
a) Use of smart meters
b) Housing choices that can minimize exposure to fuel poverty

Changes in the awareness levels of students were evaluated through pre- and post-intervention questionnaire surveys. Students were encouraged to complete a baseline survey at the beginning of the academic year (October 2019) in order for existing information and awareness levels to be recorded, and a follow-up survey at the end of the academic year (May 2020).

The target response rate for each of the two surveys, baseline and follow-up, was 5% (2,750 students) of the 55,000 students that SSO+ aimed to reach in the academic year 2019/20 (Table 1).

Table 1 Survey response targets for 2019-20

Country	**Total number of students to be reached through the SSO+ campaign in 2019/20**	**Target for the SSO+ surveys (5% of students to be reached through SSO+)**
United Kingdom	30,000	1,500
Greece	10,000	500
Cyprus	1,000	50
Ireland	3,500	175
Lithuania	6,000	300
Romania	2,000	100
Bulgaria	2,500	125
Total	**55,000**	**2,750**

2.1 Questionnaire surveys and analysis methods

Online versions of the questionnaire surveys were created on LimeSurvey in Bulgarian, English, Greek, Lithuanian and Romanian. The answers were processed using Microsoft Excel and IBM SPSS software.

Questions in the follow-up questionnaire were identical to those asked in the baseline survey in order to allow for comparison and evaluation of possible changes in the knowledge and awareness levels of students over the academic year.

The questionnaire included multiple-choice, dichotomous and rating scale questions. In multiple-choice questions participants were offered a set of answers they have to choose from while in dichotomous questions had a "yes" and "no" option. The third type of questions was Likert-scale and preference rank order type. In Likert scale questions respondents were asked about the level of agreement with specific statements. Each option was given a score, which was used to analyze results. The preference rank order questions required sequential ranking from high to low until all factors were ranked.

Two proportion z-test was used for testing the difference between the baseline and follow-up survey proportions.

- The null hypothesis (H_0) for the test is that the proportions are the same.
- The alternate hypothesis (H_1) is that the proportions are **not** the same.

Independent samples t-test was used to determine whether the differences between the baseline and follow-up survey are statistically significant for each of the two groups.

- The null hypothesis (H_0) for the independent t-test is that the population means from the two unrelated groups are equal.
- The alternate hypothesis (H_1) is that the population means from the two unrelated groups are **not** equal.

In both tests, a significance level to either reject or accept the alternative hypothesis is set at 0.05.

In addition, P-values are calculated to support or reject the null hypothesis.

- A small p (≤ 0.05) rejects the null hypothesis.
- A large p (> 0.05) accepts the alternative hypothesis.

P-values smaller than 0.05 indicate statistically significant results.

2.2 Data collection

The baseline and the follow-up questionnaires were incentivized. On both occasions two €25 and one €50 prize incentive were provided. Winners were chosen through a randomized draw.

Channels used to disseminate the questionnaire surveys were mainly the participating universities' and students' unions mailing lists. In some cases, students were reached via third parties such as other universities or students' unions who disseminate SSO+ materials but whose students we are not able to reach/survey directly by the SAVES 2 consortium. In order to increase participation further, some universities circulated hard copies of the survey as well.

The total number of baseline survey entries was 4,422. Out of those respondents, 3,432 were valid entries, meaning that they lived in private accommodation and answered at least one SSO+ specific question (Table 2). The number of valid entries for the follow-up analysis was 2,826 resulting out of a total of 3,473 entries. In effect, the target of 2,750 entries was met for both surveys (Table 2).

Table 2 Number of respondents considered in the analysis

	Bulgaria	**Cyprus**	**Greece**	**Ireland**	**Lithuania**	**Romania**	**UK**	**Total**
Baseline	126	584	566	224	502	400	1030	3,432
Follow-up	73	867	346	274	355	237	674	2,826

The actual number of responses to individual questions for each country and for each survey (baseline and follow-up) are tabulated in Annex I.

3 Analysis and Results

3.1 Respondent characteristics

Respondent demographics investigated through the questionnaires are gender, age, field of study and accommodation type. The demographic characteristics of each sample (baseline and follow-up) are summarized in Table 3 and further discussed below.

Gender

A larger proportion of women compared to men participated in both surveys (68%). In all countries the proportion of the respondents that were women was over 55% in both surveys, except for Bulgaria, and Lithuania where the respondents in the baseline survey were almost equally split to women and men. In Bulgaria the percentage of women that participated in the follow-up survey increased to almost 70% while a slight increase was also observed in Lithuania (+3%). In both surveys, a small percentage of participants did not state their gender or defined themselves as non-binary or in another way (<1% of total sample in both cases.

Age

The biggest share of respondents in both the baseline (55%) and the follow-up (45%) survey was between 18-20 years of age. A large proportion of respondents was also between 21-24 years of age (33% in the baseline and 41% in the follow-up). In all individual countries the majority of students were between 18-24 years of age. Nonetheless, all countries except for Romania and the UK, had a share of students in the age group of 25-29 in both surveys (between 9% and 14%). The UK had the youngest population of respondents with the majority (74% in the baseline and 65% in the follow-up) being between 18-20 years of age. In Bulgaria, Cyprus, Ireland and Lithuania more than 5% of respondents were over 30 years of age in both surveys whereas Ireland had the highest share of respondents older than 30 years old in both surveys (8% and 7% respectively).

Field of study

Overall, respondents studied all main subjects of study in both surveys, however, these varied between countries as subject of study relied a lot on the type of university and studies offered at the participating universities. The biggest share of respondents (30% baseline; 32% follow-up) studied social sciences. The second most represented subject of study (24% baseline; 22% follow-up) was Architecture/ Engineering/Technology. On the other hand, the least studied field was Life Sciences / Medicine (10% baseline; 12% follow-up).

In most countries there was a good mixture of fields of study in both surveys. However, in Lithuania there was a very large share of respondents studying architecture, engineering or technology (68% baseline; 70% follow-up) and in Romania studying social sciences (67% baseline; 98% follow-up). Moreover, in Greece (Mathematics/Natural Sciences, +34% difference from baseline) and Romania (Arts/Humanities, -29% difference from baseline) the most noticeable differences on the field of study, amongst the two surveys were observed.

Accommodation type

In both surveys a large share of respondents (60% baseline, 51% follow-up) lived in rented accommodation, either in a privately rented house (43% baseline, 40% follow-up) or in a rented room in a landlord's house (17% baseline, 11% follow-up). There was a good share of students (>30% in both surveys) living with their parents as well. As expected, only a small proportion of respondents (~7%) of both the baseline and the follow-up survey lived in a place they owned.

The proportion of students living in each accommodation type was very similar between the two surveys in most countries suggesting specific preferences for private student accommodation types in those countries. In Bulgaria, Cyprus, Greece, Ireland and Romania the majority of respondents in both surveys either lived in privately rented homes or in their family home. The UK had a high proportion of students living in privately rented houses in both surveys (64% baseline; 59% follow-up) but also had fair shares of respondents living in rented rooms in their landlord's house (29% baseline; 20% follow-up). Living in a rented room in a landlord's house is common in Lithuania (35% baseline; 28% follow-up) however, in Lithuania it appears to be even more common to live in family home (48% baseline; 45% follow-up). Interestingly, in Ireland the share of those residing in rented rooms in landlord's house decreased noticeably between the two surveys (22% baseline;

13% follow-up). Other noticeable differences regarding their accommodation status were observed in Bulgaria, Romania and the UK. More specifically, in these countries, an increase was observed ranging between +11% (Bulgaria) and +14% (UK), in the follow-up survey for those that lived in their families' home; +10% in total (31% baseline; 41% follow-up). This increase might be due to many student respondents returning to their families' homes as a result of the forced closure of many universities in light of the COVID-19 pandemic outbreak during Spring 2020.

Even though SSO+ is aimed at students who live in privately rented accommodation, there was a fair share of respondents (31% baseline, 41% follow up) that lived in their family home and more than 7% lived in a place they owned in both surveys. However, it was considered useful to include them in the analysis, as the actions promoted through the SSO+ campaign are relevant for those who also live in owned/family accommodation as well. Some of the actions may even be easier for them to take (e.g. switching providers or getting a smart meter) whilst others (e.g. encouraging them to move to a property with a better EPC) maybe less so although they may become aware of the benefits of upgrading the energy performance of their own or family's home and actually move forward with it.

Table 3 Respondents' demographics (B: baseline; F: follow-up)

	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK		Total	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
Gender																
Women	51%	70%	70%	69%	59%	56%	84%	72%	50%	54%	83%	80%	74%	73%	68%	68%
Men	48%	25%	29%	30%	39%	42%	12%	26%	49%	46%	16%	20%	23%	24%	30%	31%
In another way/ Non binary	0%	0%	0%	0%	1%	1%	3%	2%	1%	0%	0%	0%	2%	2%	1%	1%
Prefer not to say	1%	6%	0%	1%	1%	0%	1%	1%	0%	0%	1%	0%	1%	1%	1%	1%
Age																
18-20	44%	29%	47%	41%	49%	23%	50%	46%	44%	38%	46%	54%	74%	65%	55%	45%
21-24	37%	56%	36%	40%	38%	60%	33%	38%	38%	47%	49%	38%	19%	30%	33%	41%
25-29	14%	10%	12%	12%	9%	14%	9%	10%	11%	10%	3%	5%	5%	3%	8%	9%
30+	6%	6%	5%	7%	4%	3%	8%	7%	6%	6%	3%	3%	2%	2%	4%	5%
Field of study																
Architecture / Engineering / Technology	23%	19%	18%	19%	36%	26%	9%	13%	68%	70%	1%	0%	12%	11%	24%	22%
Arts / Humanities	10%	16%	17%	16%	18%	10%	37%	24%	4%	2%	29%	0%	28%	30%	21%	16%
Life Sciences / Medicine	5%	18%	8%	11%	3%	3%	20%	21%	0%	1%	1%	0%	22%	22%	10%	12%
Mathematics / Natural Sciences	33%	16%	21%	19%	21%	55%	6%	11%	8%	5%	2%	1%	14%	13%	14%	18%
Social Sciences	30%	30%	36%	35%	23%	6%	28%	31%	20%	21%	67%	98%	24%	25%	30%	32%
Accommodation																
Privately rented house	44%	34%	41%	39%	50%	49%	31%	37%	1%	1%	45%	42%	64%	59%	43%	40%
Rented room in landlord's house	2%	0%	3%	4%	5%	4%	22%	13%	35%	28%	5%	3%	29%	20%	17%	11%
Living in a place I own	13%	12%	9%	7%	9%	10%	1%	4%	15%	17%	19%	13%	1%	1%	8%	7%
Living in my family home	41%	53%	47%	50%	36%	37%	46%	47%	49%	54%	31%	42%	6%	20%	31%	41%

3.2 Familiarization with the SSO+ campaign

Respondents were asked whether they had heard of the Student Switch Off+ (SSO+) campaign before. It is noted that this was the third consecutive academic year that SSO+ had run in Cyprus, Greece, Lithuania and the UK and the second consecutive academic year the SSO+ campaign had run in Bulgaria, Romania and Ireland so it was expected for some of the respondents of the baseline survey to already be familiar with the campaign.

A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results of those who answered positively ("Yes") to this question are shown in Figure 1 and tabulated in Table 4.

At the end of the academic year a higher share of respondents (+3%) had heard about the SSO+ campaign compared to the beginning of the academic year. This increase was statistically significant *(z=-1.991, p=0.023*). The share of respondents that had heard of the SSO+ campaign was 48% in the follow-up survey and 45% in the baseline. In all countries except for Greece, more respondents had heard about the SSO+ campaign at the end of the academic year compared to the beginning (Table 4). In Greece, equal shares of participants had heard of the SSO+ campaign in both surveys. The increase in the number of respondents that had heard of the SSO+ campaign at the end of the academic year compared to the beginning was statistically significant in Cyprus, Ireland and Lithuania.

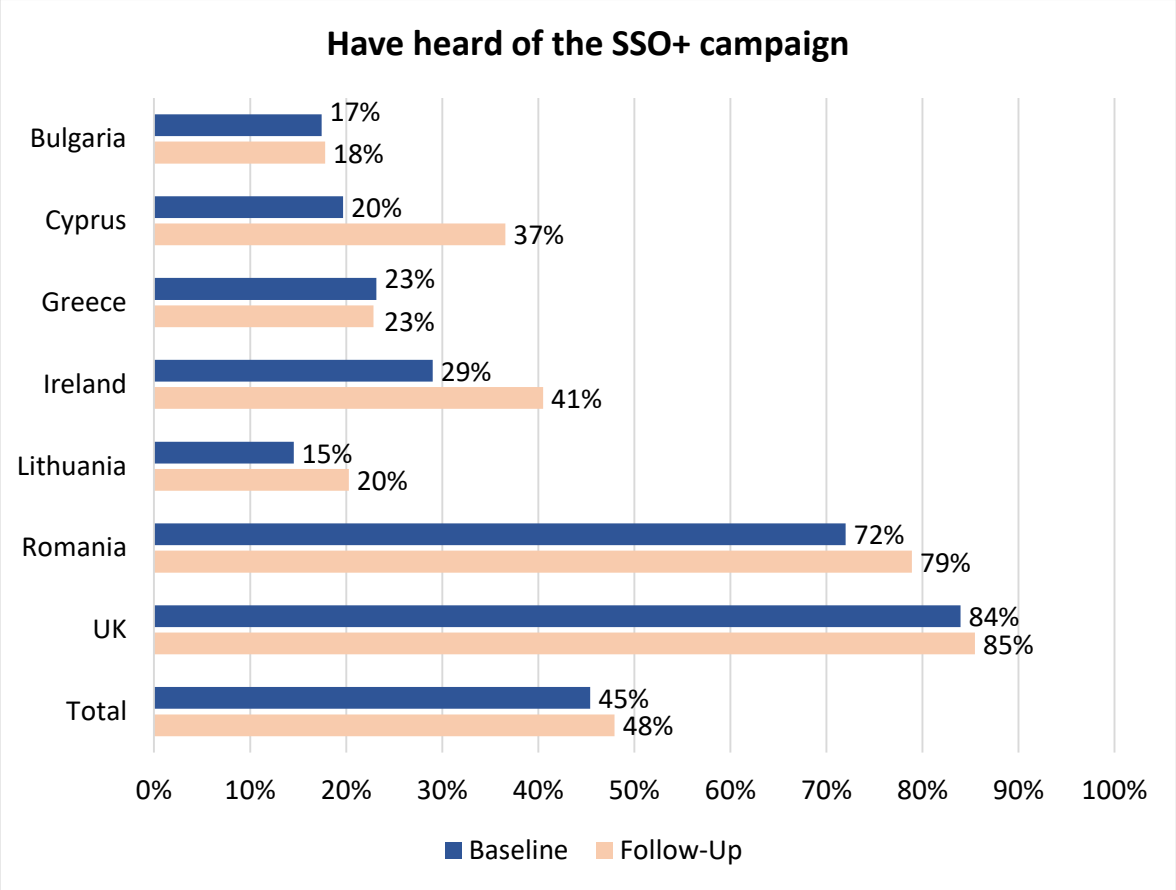

Figure 1 Familiarization with the SSO+ campaign – Total sample

In **Bulgaria** 18% of those surveyed at the end of the academic year had heard of the SSO+ campaign while this share was 17% in the baseline survey.

The highest statistically significant increase (+17%) was observed in **Cyprus** where 37% of the respondents had heard of the campaign by the end of the year (*z=-6.892, p<.0001*).

In **Greece**, the proportion of respondents that were familiar with the SSO+ campaign was the same between the two surveys, 23%.

In **Ireland**, a statistically significant increase of +12% was recorded *(z=-2.669, p=0.004)*. At the beginning of the academic year 29% of those surveyed had heard of the SSO+ campaign before whereas that share at the end of the year increased to 41%.

Lithuania presented a statistically significant increase of +6%, and 20% of the follow-up respondents stated they had heard of the SSO+ campaign by the end of the academic year *(z=-2.208, p=0.014)*.

In **Romania** a high percentage of respondents had heard of the SSO+ campaign both in the baseline (72%) and the follow-up survey (79%), however the increase (+7%) between the two surveys was not statistically significant.

Finally, in the **UK**, the majority of the follow-up respondents (86%), which was the biggest share among the seven countries, had heard of the SSO+ campaign at the end of the academic year while also high (84%) was the proportion of the respondents that were familiar with the SSO+ campaign at the beginning of the academic year.

Table 4 Familiarization with the SSO+ campaign - per country and total sample

Have you heard of the Student Switch Off+ (SSO+) campaign?		**Bulgaria**	**Cyprus**	**Greece**	**Ireland**	**Lithuania**	**Romania**	**UK**	**Total**
Yes	**Follow-up**	17.8%	36.6%	22.8%	40.5%	20.3%	78.9%	85.5%	47.9%
	Baseline	17.5%	19.7%	23.1%	29.0%	14.5%	72.0%	84.0%	45.4%
	difference from baseline	0.3%	**16.9%***	-0.31%	**11.5%***	**5.8%***	6.9%	1.5%	**2.5%***
No	**Follow-up**	82.2%	63.4%	77.2%	59.5%	79.7%	21.1%	14.5%	52.1%
	Baseline	82.5%	80.3%	76.9%	71.0%	85.5%	28.0%	16.0%	54.6%
	difference from baseline	-0.3%	-16.9%	0.31%	-11.5%	-5.8%	-6.9%	-1.5%	-2.5%

*: statistically significant difference

3.3 Sources of information about the SSO+ campaign

Respondents who had heard of the SSO+ campaign were asked to specify where they heard about the Student Switch Off+ campaign from a predefined list of sources. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions were statistically significant. P-values smaller than 0.05 indicate statistically significant results. The results for the total sample are shown in Figure 2 and tabulated in Table 5 for total sample and per country.

At the end of the academic year the most popular sources of information about the SSO+ campaign were emails (54%), social media (37%) and posters (30%). On the contrary, only 15% of the follow-up respondents reported they had heard about the SSO+ campaign from seminars, 7% from a classmate and 7% from a friend.

The sources of information about the SSO+ campaign that recorded the highest positive difference over the academic year were emails (+11%) and social media (+4%) (Table 5). In both cases the difference was statistically significant (emails: *z=-5.793, p<0.001* and social media: *z=-2.259, p=0.012*). On the other hand, between the two surveys, a statistically significant decrease was observed for posters (-7%, *z=-3.847, p=0.001*) and friends (-2%, *z=-1.969, p=0.024*).

The study also showed that friends (9% baseline, 7% follow-up) and classmates (8% baseline, 7% follow-up) were the least popular sources of information for the SSO+ campaign.

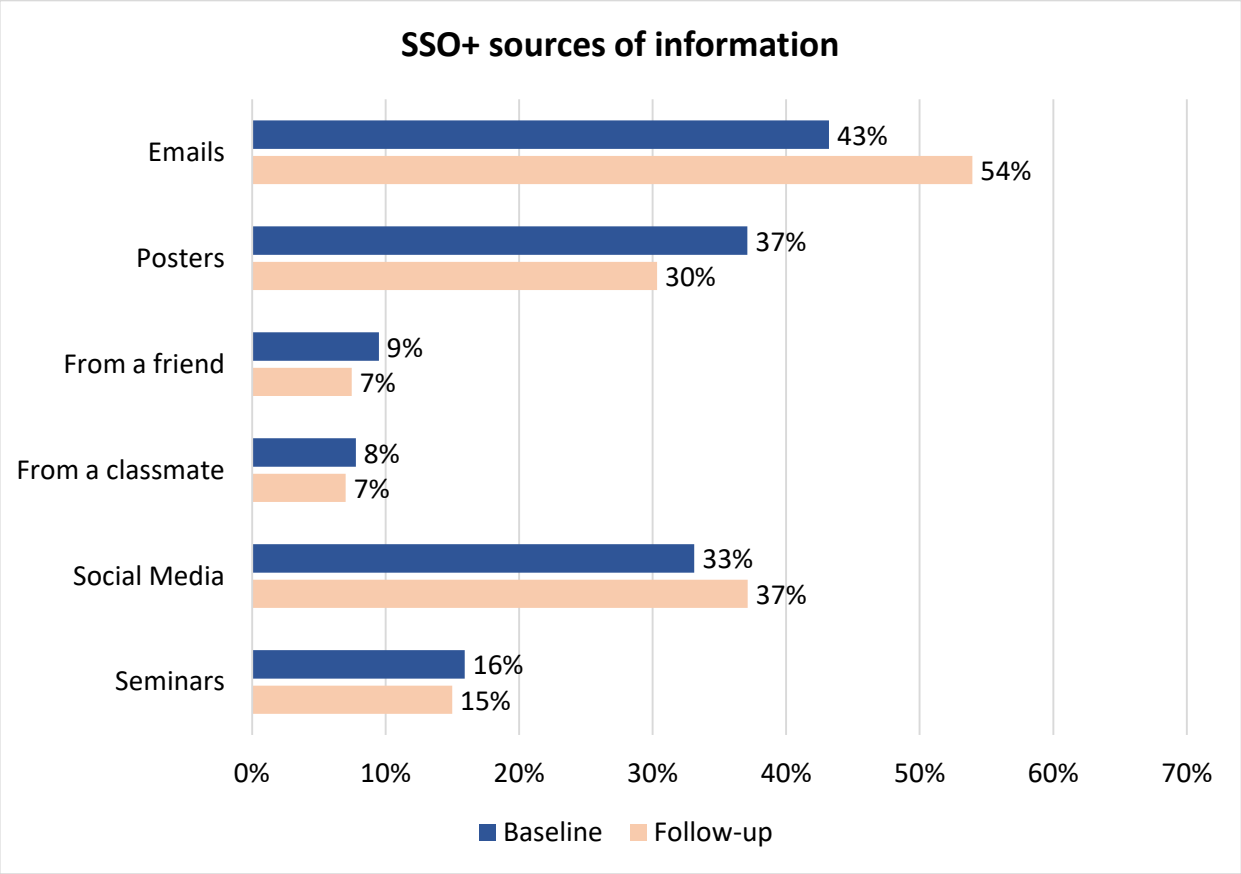

Figure 2 Sources of information about the SSO+ campaign – Total sample

Baseline respondents in **Bulgaria** had heard about the SSO+ campaign mainly from classmates (41%), social media (36%) and seminars (32%). (Table 5). At the end of the academic year there was a change among the sources of information, as the majority of the respondents (62%) were informed from emails, with the observed difference being statistically significant (+34%, *z=-1.999, p=0.023*). Social media (23%) and seminars (8%) were not as popular as in the baseline survey. Similarly, those that were informed through friends (0%) or classmates (8%) were fewer than the beginning. Respectively, the differences between the baseline and the follow-up survey, were statistically significant (Friends: -27%, *z=-2.069, p=0.019*, Classmates: -33%, *z=-2.102, p=0.018*)

In **Cyprus**, most of the respondents in the baseline survey had heard about the SSO+ campaign from emails (69%), and social media (37%). In the follow-up survey the proportion of respondents that had heard about SSO+ from emails increased statistically significantly by +12% (*z=-2.576, p=0.005*) whereas social media remained among the most influential sources of information, although a small decrease (-5%) was recorded. The third most frequently occurring response given in both surveys was "posters". A reduction of -7% was observed in the share of respondents that had heard about SSO+ from posters (13% in the follow-up); however, this difference was not statistically significant.

In **Greece** the most popular responses in the baseline survey were "social media" (39%), "from a classmate" (28%) and "posters" (26%). The same top three answers, with the same order, were given in the follow-up survey as well: "social media" (40%), "from a classmate" (35%) and "posters" (30%). The observed differences were not statistically significant. In addition, 18% of the follow-up respondents stated they had heard about the SSO+ campaign through "emails" which was -5% less than in the beginning of the academic year. Finally, "seminars" were the least selected option in both surveys (5% baseline, 6% follow-up).

In **Ireland** 74% of the respondents in the follow-up survey had heard about the SSO+ campaign through "social media", 32% from "emails" and 22% from "posters". Those three answers were the most frequently occurring responses also in the baseline survey: "social media" (63%), "emails" (26%) and "posters" (22%). The highest difference observed, +11% increase from baseline, was recorded for "social media" but it was not statistically significant. On the contrary, a statistically significant decrease of -10% was observed in the proportion of respondents that selected "from a friend" (4%) in the follow-up survey *(z=-2.507, p=0.006*).

In **Lithuania** the most frequently occurring responses in both surveys were "social media" and "emails". Fifty-four percent (54%) of the follow-up respondents had heard about the SSO+ campaign from social media. This share, compared to the baseline survey, was decreased by -12%, without being statistically significant though. Emails also played a key role in the dissemination of the SSO+ campaign as half (51%) of the follow-up respondents had heard about the campaign from emails; a +6% increase is recorded in this option compared to the beginning of the academic year which was however not statistically significant. "Posters" (17%, -1% decrease from baseline) was selected by a smaller share of follow-up respondents compared to the baseline survey whereas the "from a friend" option (17%, no difference from baseline) was selected by an equal share of follow-up respondents as in the baseline survey.

"Seminars" was the most selected option among the sources of information according to **Romanian** respondents in both baseline (67%) and follow-up (85%) survey, presenting a statistically significant increase of +18% between the two surveys *(z=-4.310, p<0.001)*. In addition, the selection of "social media" was increased statistically significantly (+18%, *z=-4.626, p<0.001*), at the end of the year (35%), making "social media" the second most popular choice of respondents by the end of the academic year. Finally, even though emails were amongst the least popular sources in both surveys (7% follow-up, 3% baseline) they had a statistically significant increase of +4% (*z=-2.164, p=0.015*) by the end of the academic year.

In the UK, the most popular sources of information about the SSO+ campaign were "emails" (64% baseline, 58% follow-up) and "posters" (52% baseline, 55% follow-up). In addition, a fair share of respondents in both surveys were informed through social media (31% follow-up, 32% baseline). The increase of +6% that was observed for emails was statistically significant (*z=-2.289, p=0.011*). On the contrary, "from a friend" (7% follow up, 8% baseline) "seminars" (4% follow up, 4% baseline) and "from a classmate" (2% follow up, 4% baseline) were the least selected sources of information about the SSO+ campaign.

Table 5 Sources of information about the SSO+ campaign – Total sample and per country

Sources of information about the SSO+ campaign		**Bulgaria**	**Cyprus**	**Greece**	**Ireland**	**Lithuania**	**Romania**	**UK**	**Total**
Emails	**Follow-up**	61.5%	80.4%	17.7%	32.4%	51.4%	7.5%	63.7%	53.9%
	Baseline	27.3%	68.7%	23.1%	26.2%	45.2%	3.1%	57.7%	43.2%
	difference from baseline	**34.3%***	**11.7%***	-5.4%	6.3%	6.2%	**4.4%***	**6.0%***	**10.8%***
Posters	**Follow-up**	7.7%	12.6%	30.4%	21.6%	16.7%	4.8%	52.3%	30.3%
	Baseline	13.6%	19.1%	26.2%	21.5%	17.8%	6.6%	54.7%	37.1%
	difference from baseline	-5.9%	-6.5%	4.2%	0.1%	-1.1%	-1.8%	-2.4%	**-6.8%***
From a friend	**Follow-up**	0.0%	6.6%	20.3%	3.6%	16.7%	3.2%	7.3%	7.5%
	Baseline	27.3%	12.2%	23.8%	13.8%	16.4%	3.5%	7.6%	9.5%
	difference from baseline	**-27.3%***	-5.5%	-3.6%	**-10.2%***	0.2%	-0.3%	-0.3%	**-2.0%***
From a classmate	**Follow-up**	7.7%	7.9%	35.4%	4.5%	8.3%	10.2%	1.9%	7.0%

Sources of information about the SSO+ campaign		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
	Baseline	40.9%	8.7%	27.7%	1.5%	6.8%	10.1%	3.6%	7.8%
	difference from baseline	**-33.2%***	-0.8%	7.8%	3.0%	1.5%	0.1%	-1.7%	-0.8%
Social media	**Follow-up**	23.1%	31.9%	40.5%	73.9%	54.2%	34.8%	31.4%	37.1%
	Baseline	36.4%	36.5%	39.2%	63.1%	65.8%	16.3%	32.3%	33.1%
	difference from baseline	-13.3%	-4.7%	1.3%	10.8%	-11.6%	**18.4%***	-0.8%	**4.0%***
Seminars	**Follow-up**	7.7%	3.5%	6.3%	4.5%	2.8%	84.5%	3.6%	15.0%
	Baseline	31.8%	5.2%	4.6%	3.1%	0.0%	66.7%	4.0%	15.9%
	difference from baseline	-24.1%	-1.7%	1.7%	1.4%	2.8%	**17.8%***	-0.4%	-0.9%

*: statistically significant difference

3.4 Influence of the Student Switch Off+ campaign

Respondents who had heard of the SSO+ campaign (see section 3.2) were asked to report on the ways in which the SSO+ campaign had influenced them. This question was available only in the follow-up survey. Results are summarized in Table 6 for each country and for the total sample and in Figure 3 for the total number of respondents.

Overall, the majority of the respondents (66%) stated that the SSO+ campaign made them aware of how to reduce their energy costs, while also a fair share (41%) answered that the SSO+ campaign made them aware on how to be energy efficient. Eighteen percent (18%) of those surveyed, equally reported that the SSO+ campaign made them more aware regarding Energy Performance Certificates (EPCs), smart meters and the options on energy-efficient housing appliances. Twelve percent (12%) of those questioned stated that the SSO+ campaign made them aware that they had a choice of energy providers and tariffs. Finally, 19% of the respondents stated that they were not influenced at all.

Interestingly, in all countries except for Bulgaria, most respondents reported that the SSO+ campaign mainly made them aware on how to reduce their energy costs. In Bulgaria, 46% those surveyed stated that the SSO+ campaign made them aware on how to be energy efficient.

Approximately half of the respondents (46%) from **Bulgaria** reported that the SSO+ campaign made them aware on how to be energy efficient whereas 31% stated that it made them aware of the EPC and of smart meters. Moreover, 23% of the respondents became aware of that they had a choice of energy providers and tariffs while another 23% stated that the SSO+ campaign made them aware of how to reduce their energy costs. Twenty-three percent (23%) of the respondents stated that the SSO+ campaign had not influenced them.

In **Cyprus** the majority (76%) of the respondents had been influenced by the SSO+ campaign in a positive way**,** by becoming aware of how to reduce their energy costs. A fair share (31%) of participants reported that the SSO+ campaign made them aware on how to be energy efficient while 25% stated that the SSO+ campaign helped them to select energy-efficient house appliances. Nineteen percent (19%) of the respondents reported that they became aware of smart meters through the campaign whereas 12% answered that the SSO+ campaign made them aware of the EPC. Eight percent (8%) of those participating in the follow-up survey became aware that they had a choice of energy providers and tariffs. Eighteen percent (18%) replied that the SSO+ campaign had not influenced them.

Fifty-seven percent (57%) of the respondents from **Greece,** reported that the SSO+ campaign made them aware on how to reduce their energy costs. Moreover, 28% of those questioned responded that the SSO+ campaign made them aware on how to be energy efficient followed by a quarter of the follow-up respondents (25%) who stated that the SSO+ campaign made them aware of the EPC. Fifteen percent (15%) of the participants answered that the SSO+ campaign helped them select energy-efficient appliances, 13% stated that the SSO+ campaign made them aware of smart meters and 10% reported that it made them aware of having a choice of energy providers and tariffs. Twenty-five percent (25%) of the respondents reported that the SSO+ campaign had not influenced them.

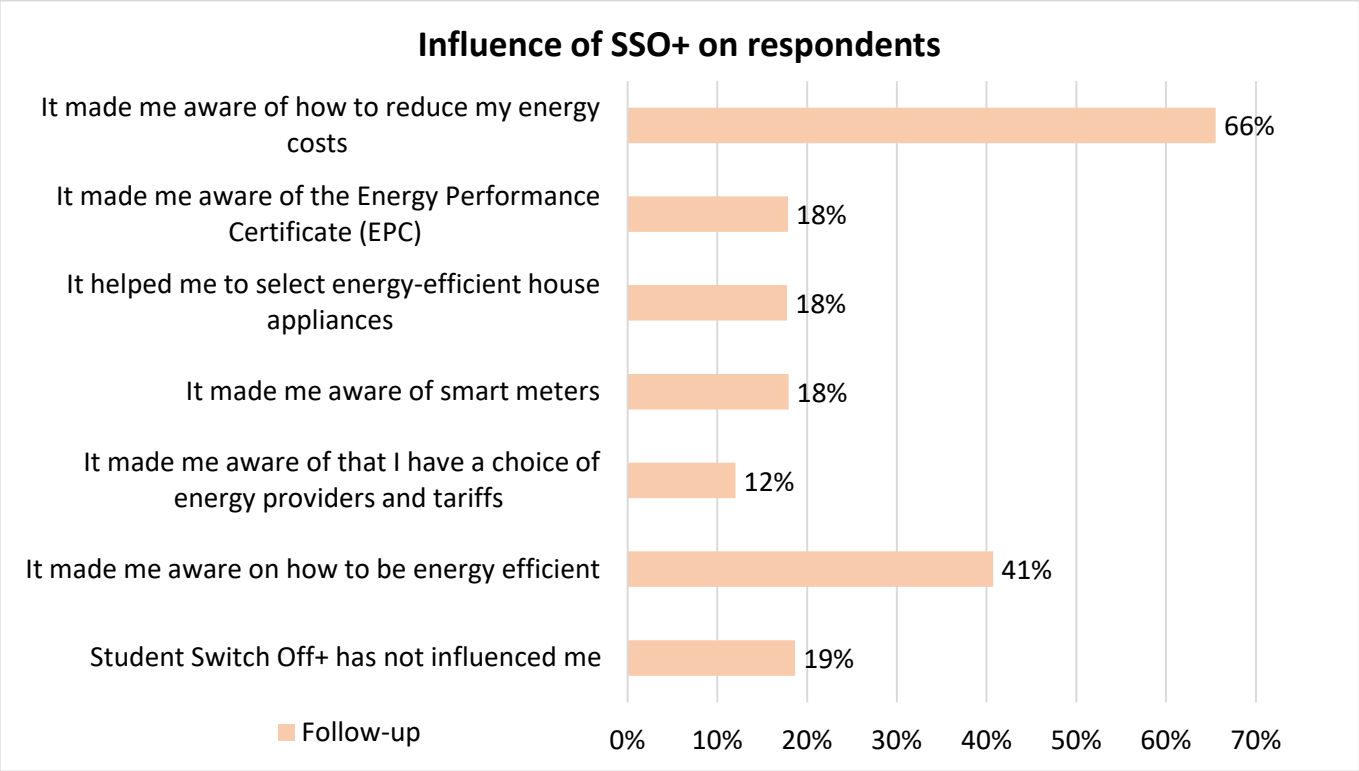

Figure 3 Influence of Student Switch Off+ campaign on respondents – Total sample

In **Ireland,** the majority of the respondents (67%) stated that SSO+ campaign made them aware of how to reduce their energy costs while 54% reported that it made them aware of how to be more energy efficient. Twenty-three percent (23%) of those participated in the follow-up survey answered that the SSO+ campaign made them aware of smart meters and another 23% replied that the SSO+ campaign helped them to select energy-efficient house appliances. One out of five respondents (20%) stated that the SSO+ campaign made them aware of the EPC, 17% responded that it made them aware of that they had a choice of energy providers and tariffs whereas 15% stated that the SSO+ campaign had not influenced them.

In **Lithuania,** 38% of participants of the follow-up survey reported that the SSO+ campaign made them aware of how to reduce their energy costs. Thirty-one percent (31%) replied that it made them aware on how to be energy efficient while 24% answered that it made them aware of smart meters. Fifteen percent (15%) stated that it helped them to select energy-efficient house appliances whilst 14% selected the "It made me aware of the EPC" option. Eight percent (8%) of those surveyed responded that the SSO+ campaign made them aware of having a choice of energy providers and tariffs. Finally, 31% of the participants, which is the highest share amongst the seven countries, replied that the SSO+ campaign had not influenced them.

In **Romania** the majority (78%) of the respondents reported that the SSO+ campaign made them aware of how to reduce their energy costs. More than half of the participants (51%) reported that the SSO+ campaign made them aware on how to be energy efficient while 24% stated that the SSO+ campaign helped them to select energy-efficient house appliances. Nineteen percent (19%) of the respondents became aware of smart meters through the campaign whereas 18% of the respondents answered that the SSO+ campaign made them

aware of the EPC. Fourteen percent (14%) stated that the SSO+ campaign made them aware of that they had a choice of energy providers and tariffs. On the other hand, 6% of those questioned, which is the lowest share amongst the seven countries, stated that the SSO+ campaign had not influenced them.

In the **UK,** the majority of the respondents (61%) stated that SSO+ campaign made them aware of how to reduce their energy costs while 43% reported that it made them aware of how to be more energy efficient. One out of five respondents (20%) stated that the SSO+ campaign made them aware of the EPC and 16% responded that it made them aware of smart meters. Thirteen percent (13%) of those that participated in the follow-up survey answered that the SSO+ campaign made them aware that they had a choice of energy providers and tariffs whereas 12% replied that the SSO+ campaign helped them to select energy-efficient house appliances. Twenty two percent (22%) stated that the SSO+ campaign had not influenced them.

Table 6 Influence of the Student Switch Off+ campaign on respondents - Total sample and per country

	Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
It made me aware of how to reduce my energy costs	23.1%	76.0%	57.0%	66.7%	37.5%	78.1%	61.1%	65.5%
It made me aware of the Energy Performance Certificate (EPC)	30.8%	12.3%	25.3%	19.8%	13.9%	17.6%	19.8%	17.9%
It helped me to select energy-efficient house appliances	7.7%	25.2%	15.2%	22.5%	15.3%	23.5%	11.8%	17.8%
It made me aware of smart meters	30.8%	19.2%	12.7%	22.5%	23.6%	18.7%	15.8%	17.9%
It made me aware of that I have a choice of energy providers and tariffs	23.1%	7.6%	10.1%	17.1%	8.3%	13.9%	13.4%	12.0%
It made me aware on how to be energy efficient	46.2%	30.6%	27.8%	54.1%	30.6%	51.3%	43.2%	40.7%
Student Switch Off+ has not influenced me	23.1%	17.7%	25.3%	15.3%	30.6%	5.9%	21.5%	18.7%

3.5 Perceived level of information about energy and environmental issues

All respondents were asked to rate how well informed they felt about a number of issues that involved the energy and environmental performance of their home. Results are on a 1 to 5 scale (1= Very badly informed, 2 = Fairly badly informed, 3 = Neither well nor badly informed, 4 = Fairly well informed, 5 = Very well informed). The higher the mean value (M) the better informed the respondents feel. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. Independent samples t-test was used to determine whether the differences in the mean values recorded in the baseline and follow-up survey are statistically significant. P-values smaller than 0.05 indicate statistically significant differences in the mean value. Results are summarized in Table 7 – Table 13 for the total sample and each country, and illustrated in Figure 4 for the total number of respondents.

Overall, respondents in both surveys felt rather neutrally informed about the energy they personally consumed in their home, about the impact their energy saving measures had on their energy bill and about the impact of cold homes on their health and wellbeing (Figure 4). Respondents' perceived level of information about the impact that energy saving solutions can have to help reduce global warming and about what they could do to personally save energy in their accommodation was rather positive while improvements could be made to the level of information about their tariff choices and rights for choosing and changing their energy provider. The differences in mean values between the baseline and the follow-up survey for the total sample were minor for all options.

In the end of year survey, independent-samples t-test showed a statistically significant increase of +4% in the mean value of the total sample's level of information about the impact that energy saving solutions can have to help reduce global warming ($t(5630)=-4.177$, $p<0.01$) and a statistically significant increase of +3% with regard to the choices of tariffs that respondents had with their energy providers, ($t(5618)=-2.044$, $p=0.04$). Moreover, a statistically significant increase of +3% was found concerning the impact of cold homes on respondents' health and well-being, ($t(5627)=-2.258$, $p=0.02$).

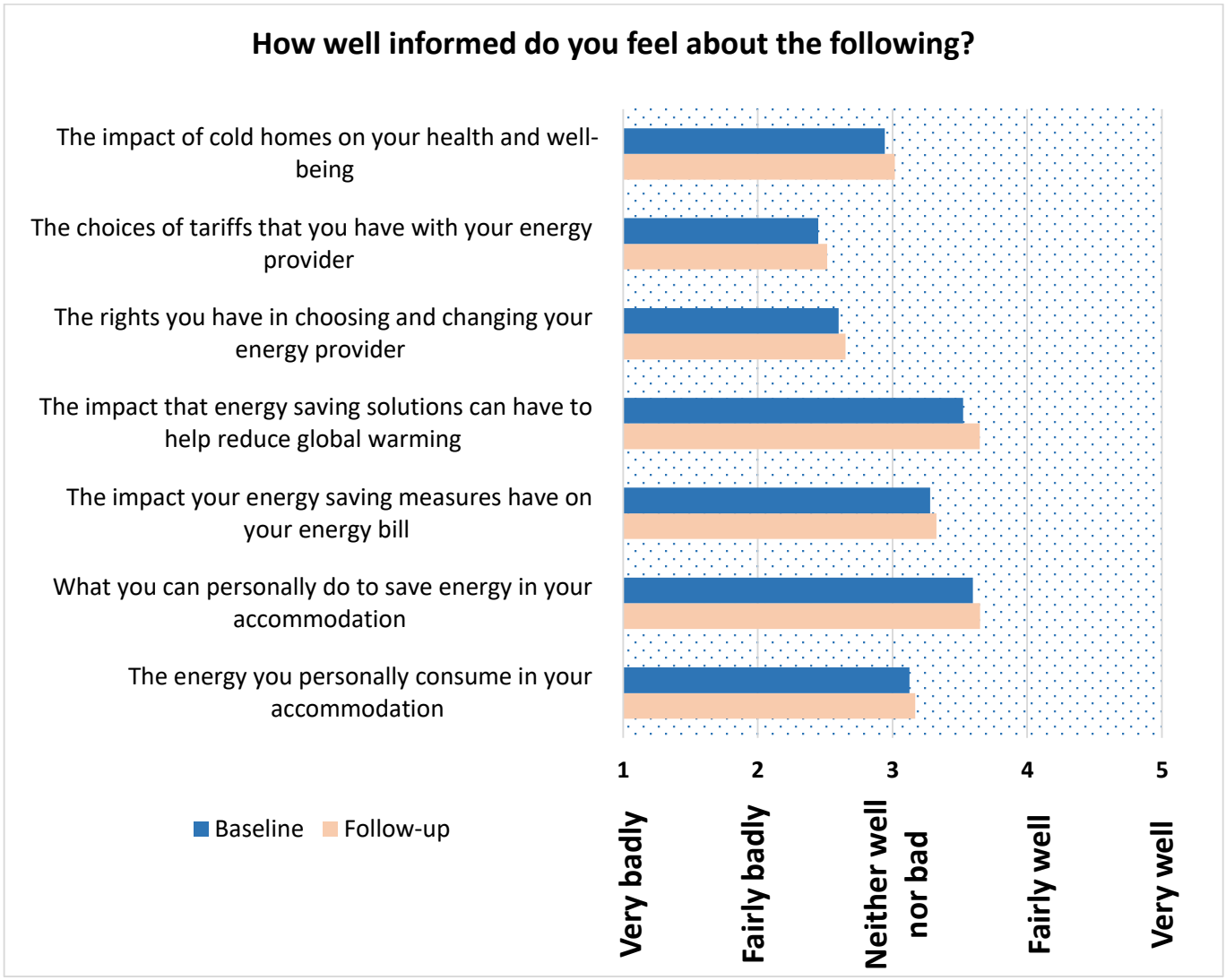

Figure 4 Mean values of perceived level of information about energy and environmental issues - Total sample

In **Bulgaria,** respondents in both surveys felt neither well nor badly informed about most topics except for the rights they had on choosing and changing their energy provider and the choices of tariffs they had with their energy provider. For these two statements, Bulgarian respondents reported that they felt fairly badly informed.

The biggest differences were observed with regard to the statements "The impact that energy saving solutions can have to help reduce global warming" (M=3.36 follow-up, -3% difference from baseline) and "The impact of cold homes on your health and well-being" (M=3.12 follow-up, -3% difference from baseline), however the differences were not statistically significant.

In **Cyprus,** in both surveys respondents felt fairly well informed about most of the given statements. However, regarding the rights they had on choosing and changing their energy provider as well as the choices of tariffs they had with their energy provider participants felt fairly badly informed in both surveys. It should be noted that in Cyprus there is only one company responsible for the totality of electricity generation and thus respondents don't have the option to choose or change their energy provider. An increase in the awareness level of respondents between the two surveys was observed for the statement "The choices of tariffs that you have with your energy provider" (M=2.38 follow-up, +2% difference from baseline) whereas a -1% decrease was observed for the statement "what you can personally do to save energy in your accommodation" (M=3.71 follow-up). However, the differences were not statistically significant.

Respondents from **Greece,** in both surveys, felt neither well nor badly informed about all topics except for the rights they had on choosing and changing their energy provider and the choices of tariffs that they had with their energy provider for which they felt fairly badly informed. Between the two surveys, a statistically significant increase of +6% was observed ($t(536)=-2.355, p=0.02$) on the impact that energy saving solutions can have to help reduce global warming. In addition, a +2% increase in the mean value was found with regard to the level of information about the energy respondents consumed in their accommodation, however it was not of statistical significance. Interestingly, no negative differences were observed in Greece in the follow-up survey.

In **Ireland,** follow-up respondents felt less informed (-11% decrease in mean value) about the impact of cold homes on their health and well-being ($t(430)=3.051, p<0.01$). Apart from the aforementioned, respondents from Ireland showed decreased awareness levels also with regard to the rights they had on choosing and changing their energy provider and the choices of tariffs that they had with their energy provider but the observed differences were not statistically significant. On the other hand, they showed increased awareness levels in all the other asked issues, however these were not statistically significant. The smallest increase recorded in Irish respondents' awareness levels, compared to the beginning of the academic year, was about the impact their energy saving measures had on their energy bill (+2% increase).

Lithuania's follow-up participants felt better informed (+8% increase in mean value) compared to those in the baseline survey, about their rights they had in choosing and changing their energy provider ($t(753)=-1.966, p=0.05$). In addition, they felt better informed about the choices of tariffs that they had with their energy providers (+2% increase) and about the impact that energy saving solutions can have to help reduce global warming (+1% increase) whereas a -2% decrease is respectively found in the level of knowledge about the impact their energy saving measures had on their energy bill and what they could personally do to save energy in their accommodation; however the aforementioned differences were not statistically significant.

In **Romania**, follow up respondents felt better informed about all topics compared to those questioned in the baseline survey. Specifically, the end of the academic year survey showed statistically significant increases in the following topics:

- What you can personally do to save energy in your accommodation, +8% increase in mean value from the beginning of the academic year ($t(520)=-3.252, p=0.001$)
- The impact your energy saving measures have on your energy bill, +6% increase from the beginning of the academic year ($t(537)=-2.841, p=0.005$)
- The impact that energy saving solutions can have to help reduce global warming, +7% increase from the beginning of the academic year ($t(527)=-2.588, p=0.01$)
- The rights you have in choosing and changing your energy provider, +14% increase from the beginning of the academic year ($t(522)=-4.091, p<0.01$)
- The choices of tariffs that you have with your energy provider, +19% increase from the beginning of the academic year ($t(591)=-4.631, p<0.01$)
- The impact of cold homes on your health and well-being, +8 % increase from the beginning of the academic year ($t(537)=-2.766, p<0.01$)

By the end of the year respondents from the **UK** felt better informed about the impact of cold homes on their health and well-being [+11% increase in mean value, (*t(1547)=-4.708, p<0.01)*] and about the impact that energy saving solutions can have to help reduce global warming [+7% increase in mean value, (*t(1545)=-2.549, p=0.01*)] compared to the baseline survey. On the contrary, they felt slightly less informed (-1% decrease in mean value) about the energy they personally consumed in their accommodation but with the latter not being a statistically significant difference.

Table 7 Mean values and standard deviations of perceived level of information on personal energy consumption -total sample and per country

The energy you personally consume in your accommodation							
	Baseline		**Follow-up**		**Change in mean value**	**% change in mean value**	**p value**
	mean	**SD**	**mean**	**SD**			
Bulgaria	3.38	0.95	3.33	1.25	-0.06	-2%	0.764
Cyprus	3.21	1.12	3.24	1.08	0.03	1%	0.614
Greece	3.01	1.05	3.07	1.05	0.06	2%	0.405
Ireland	2.98	1.21	3.13	1.16	0.15	5%	0.179
Lithuania	3.27	1.08	3.28	1.16	0.00	0%	0.967
Romania	3.28	1.10	3.40	1.01	0.12	4%	0.194
UK	3.02	1.14	2.98	1.22	-0.04	-1%	0.553
Total	3.13	1.11	3.17	1.13	0.04	1%	0.161

Table 8 Mean values and standard deviations of perceived level of information on personal actions to save energy - Total sample and per country

What you can personally do to save energy in your accommodation							
	Baseline		**Follow-up**		**Change in mean value**	**% change in mean value**	**p value**
	mean	**SD**	**mean**	**SD**			
Bulgaria	3.64	0.78	3.66	0.95	0.01	0%	0.932
Cyprus	3.75	1.03	3.71	1.01	-0.04	-1%	0.485
Greece	3.38	1.01	3.40	1.03	0.02	1%	0.799
Ireland	3.48	1.07	3.62	1.03	0.13	4%	0.188
Lithuania	3.52	1.02	3.46	1.05	-0.06	-2%	0.415
Romania	3.43	1.06	3.70	0.94	0.27	**8%***	0.001
UK	3.75	0.96	3.78	0.99	0.03	1%	0.567
Total	3.60	1.01	3.65	1.01	0.05	2%	0.049

*: statistically significant difference

Table 9 Mean values and standard deviations of perceived level of information on the impact of energy saving measures on energy bills – Total sample and per country

The impact your energy saving measures have on your energy bill							
	Baseline		**Follow-up**		**Change in mean value**	**% change in mean value**	**p value**
	mean	**SD**	**mean**	**SD**			
Bulgaria	3.24	1.02	3.24	1.17	0.00	0 %	0.991
Cyprus	3.52	1.12	3.48	1.06	-0.04	-1%	0.521
Greece	3.05	1.07	3.09	1.14	0.04	1%	0.597
Ireland	3.16	1.22	3.23	1.14	0.07	2%	0.557
Lithuania	3.18	1.11	3.10	1.14	-0.08	-2%	0.356

The impact your energy saving measures have on your energy bill							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Romania	3.65	1.05	3.88	0.88	0.23	**6%***	0.005
UK	3.21	1.13	3.20	1.23	-0.01	0%	0.892
Total	3.28	1.12	3.33	1.14	0.05	1%	0.119

*: statistically significant difference

Table 10 Mean values and standard deviations of perceived level of information on the impact of energy saving solutions on global warming - Total sample and per country

The impact that energy saving solutions can have to help reduce global warming							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.47	0.92	3.36	1.17	-0.11	-3%	0.529
Cyprus	3.61	1.15	3.66	1.06	0.05	1%	0.452
Greece	3.38	1.06	3.57	1.16	0.19	**6%***	0.019
Ireland	3.58	1.14	3.68	1.08	0.11	3%	0.321
Lithuania	3.23	1.15	3.27	1.17	0.04	1%	0.631
Romania	3.32	1.13	3.55	0.99	0.23	**7%***	0.010
UK	3.77	1.05	3.91	1.08	0.14	**4%***	0.011
Total	3.52	1.11	3.65	1.10	0.12	**4%***	0.000

*: statistically significant difference

Table 11 Mean values and standard deviations on perceived level of information on the rights in choosing and changing energy provider - Total sample and per country

The rights you have in choosing and changing your energy provider							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.26	1.16	2.24	1.19	-0.02	-1%	0.926
Cyprus	2.45	1.16	2.49	1.13	0.05	2%	0.475
Greece	2.68	1.14	2.67	1.22	-0.01	0%	0.891
Ireland	2.82	1.32	2.59	1.29	-0.23	-8%	0.071
Lithuania	2.32	1.17	2.50	1.24	0.17	**8%***	0.050
Romania	2.86	1.20	3.24	1.05	0.38	**14%***	0.000
UK	2.67	1.26	2.77	1.28	0.10	4%	0.117
Total	2.60	1.22	2.65	1.22	0.05	2%	0.123

*: statistically significant difference

Table 12 Mean values and standard deviations on perceived level of information on the choices of tariffs with energy provider – Total sample and per country

The choices of tariffs that you have with your energy provider							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.23	1.12	2.17	1.16	-0.05	-2%	0.774

The choices of tariffs that you have with your energy provider							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Cyprus	2.33	1.12	2.38	1.13	0.06	2%	0.380
Greece	2.39	1.08	2.40	1.18	0.01	1%	0.873
Ireland	2.47	1.26	2.30	1.21	-0.17	-7%	0.148
Lithuania	2.66	1.24	2.72	1.25	0.06	2%	0.497
Romania	2.49	1.22	2.95	1.14	0.47	**19%***	0.000
UK	2.46	1.21	2.58	1.26	0.12	5%	0.059
Total	2.45	1.19	2.51	1.21	0.07	**3%***	0.041

*: statistically significant difference

Table 13 Mean values and standard deviations on perceived level of information on the impact of cold homes on health and well-being - Total sample and per country

The impact of cold homes on your health and well-being							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.23	1.18	3.12	1.25	-0.11	-3%	0.578
Cyprus	2.84	1.21	2.90	1.21	0.06	2%	0.374
Greece	2.97	1.19	2.97	1.26	0.00	0%	0.997
Ireland	3.38	1.31	3.00	1.24	-0.38	**-11%***	0.002
Lithuania	2.98	1.22	2.97	1.25	-0.01	0%	0.911
Romania	3.16	1.25	3.43	1.06	0.27	**8%***	0.006
UK	2.76	1.22	3.06	1.24	0.30	**11%***	0.000
Total	2.94	1.24	3.02	1.23	0.07	**3%***	0.024

*: statistically significant difference

3.6 Habits and practices

Respondents were asked to rate the extent in which they undertook a number of energy saving actions on a 1 to 5 scale (1= Never, 5 = Always). The higher the mean value (M) the higher the frequency that the action is performed. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the baseline and follow-up survey are statistically significant. Results for the total sample are illustrated in Figure 5 while results per country and for the total sample are tabulated in Table 14 – Table 23.

The frequency that any action was taken did not change drastically over the academic year (Figure 5). The actions taken more frequently at the end of the academic year were: "Switch off lights and appliances when not in use" (M=4.42, SD =0.82), "Only wash clothes when you have a full load" (M=4.42, SD =0.85) and "Allow food to cool down before putting it in the fridge" (M=4.17, SD =1.18). Actions taken less frequently were: "Leave the heating on when you go out for a few hours" (M=1.82 , SD =1.14) ,"Defrost the fridge frequently" (M=2.25, SD=1.05), and "Leave your PC or TV on standby for long periods of time at home" (M=2.60, SD =1.28).

A statistically significant increase was observed in the frequency that the total sample of respondents:

- "Leave their PC or TV on standby for long periods of time at home", +6% increase from the beginning of the academic year, (*t(5474)=-4.298, p<0.01*).

- "Not overfill the kettle with water", +3% increase from the beginning of the academic year, (*t(5130)=-3.151, p<0.01*).
- "Only wash clothes when they have a full load", +3% increase from the beginning of the academic year, (*t(5360)=-5.826, p<0.01*).

Moreover, the findings of the follow-up survey revealed some practices that respondents from different countries had in common (Table 14-Table 23). According to the follow-up survey, the most frequent action respondents from Ireland, Lithuania and the UK undertake was to wash their clothes only when they have a full load; in Cyprus and Greece, respondents switched off lights and appliances when not in use while in Bulgaria and Romania respondents allowed cooked food to cool down before putting it in the fridge. On the other hand, respondents from Cyprus, Greece and Ireland, rarely left the heating on when they went out for a few hours.

In **Bulgaria** the actions that the follow-up respondents undertook most often was to "Allow cooked food to cool down before putting it in the fridge" (M=4.74, SD=0.64, +6% increase from baseline), "Switch off lights and appliances when not in use" (M=4.54, SD=0.6, +5% increase from baseline) and "Only wash clothes when you have a full load" (M=4,54, SD=0.66, +8% increase from baseline). On the contrary, the least frequent action was to "Leave the heating on when you go out for a few hours" (M=2.28, SD=1.39, +6% increase from baseline).
Furthermore, the following significant statistical differences were observed:

- "Leave a mobile phone charger switched on at the socket when not in use", +16% increase from the beginning of the academic year, *(t(167)=-2.019), p=0.05*).
- "Only wash clothes when you have a full load", +8% increase from the beginning of the academic year, (*t(137)=-2.727, p<0.01*).
- "Allow cooked food to cool down before putting it in the fridge", +6% increase from the beginning of the academic year, (*t(149)=-2.275, p=0.02*).

In **Cyprus**, the most frequent actions the follow-up respondents took were to switch off lights and appliances when not in use (M=4.44, SD=0.8, -1% increase from baseline) and only wash clothes when having a full load (M=4.39, SD=0.84, +4% increase from baseline), while the action that was the least frequently undertaken was "Leave the heating on when you go out for a few hours" (M=1.28, SD=0.76, +4% increase from baseline).
Moreover, at the end of the academic year the following actions presented statistically significant differences:

- "Leave your PC or TV on standby for long periods of time at home", +9% increase from the beginning of the academic year, (*t(1269)=-2.765, p<0.01*).
- "Only wash clothes when you have a full load", +4% increase from the beginning of the academic year, (*t(1195)=-3.057, p<0.01*).

In **Greece**, the most frequent actions the follow-up respondents took were to switch-off lights and appliances when not in use (M=4.31, SD=0.89, +2% increase from baseline) and to only wash clothes when they had a full load (M=4.29, SD=0.92, +7% increase from baseline). On the contrary, "Leave the heating on when you go out for a few hours" was the least frequently taken action (M=1.54, SD=1.02, +2% increase from baseline).
Moreover, the following statistically significant differences were observed with regard to the frequency the follow-up respondents undertook the actions described below:

- "Wash clothes at 30 centigrade or less", -6% decrease from the baseline, (*t(781)=2.278, p=0.02*).
- "Only wash clothes when you have a full load", +7% increase from baseline (*t(637)=-3.794, p<0.01*).

In **Ireland**, the actions that were undertaken most often were to wash their clothes only when they had a full load (M=4.49, SD=0.78, +2% increase from baseline), to switch-off lights and appliances when not in use (M=4.39, SD=0.81, -1% decrease from baseline) and to allow cooked food to cool down before putting it in the fridge (M=4.31, SD=1.02, -1% decrease from baseline). On the other hand, the least frequently undertaken action follow-up respondents were undertaking was leaving the heating on when they were out of their home for a few hours (M=1.7, SD=0.18, +12% increase from baseline).
In addition, the frequency that the follow-up respondents undertook the following actions noted a statistically significant difference:

- "Leave the heating on when you go out for a few hours" +12% increase from the baseline (*t(411)=-2.108, p=0.04*).
- "Leave your PC or TV on standby for long periods of time at home" +13% increase from the baseline (*t(422)=-2.327, p=0.02*).

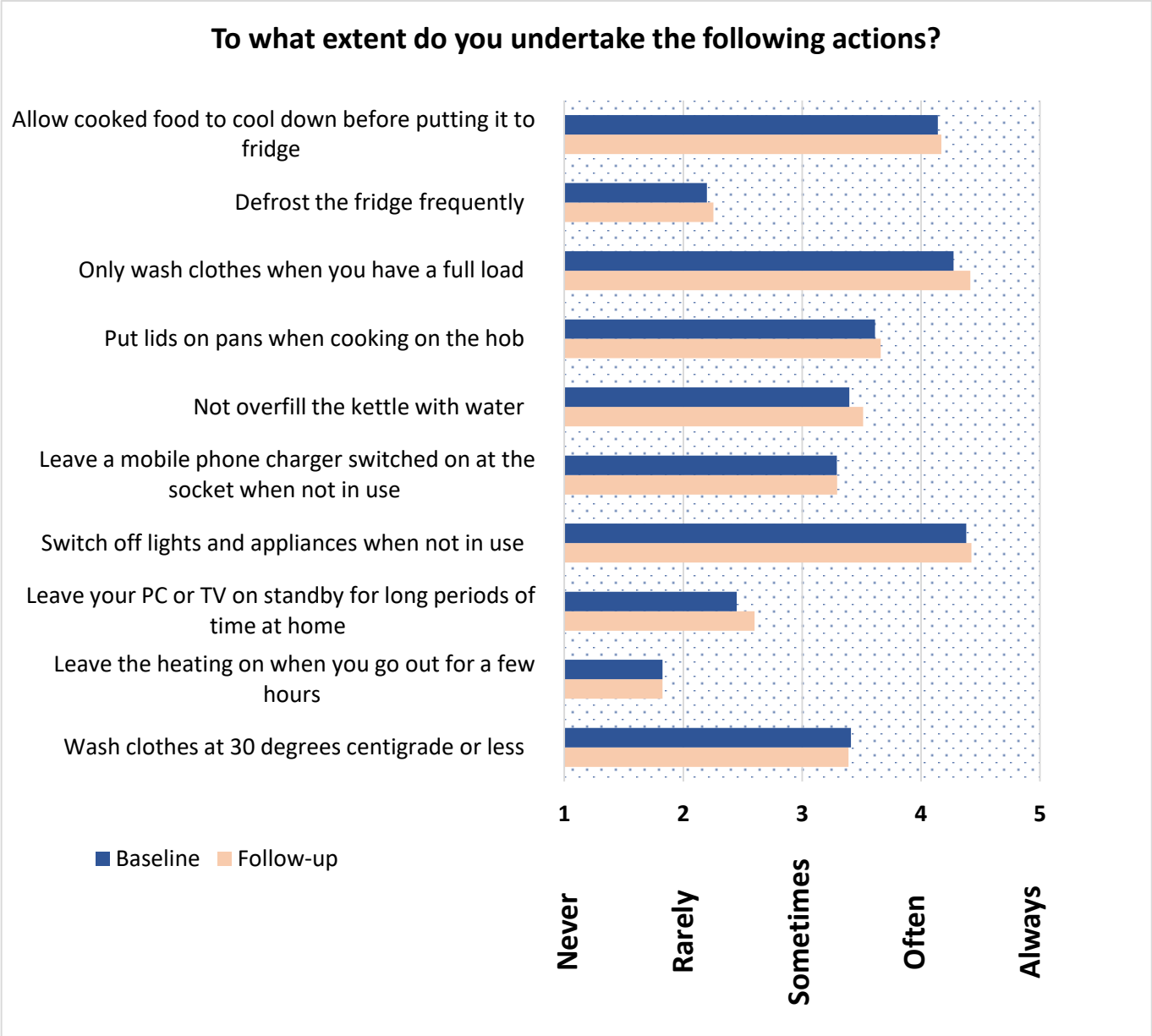

Figure 5 Mean values of the extent respondents undertake targeted energy saving actions - Total sample

In **Lithuania,** the most frequently undertaken actions by the follow-up respondents were "Only wash clothes when you have a full load" (M=4.34, SD=0.82, +2% increase from baseline), "Switch off lights and appliances when not in use" (M=4.33, SD=0.94, +2% increase from baseline) and "Allow cooked food to cool down before putting it in the fridge" (M=4.18, SD=1.15, +1% increase from baseline). The least frequent action undertaken by the end of the year was defrosting the fridge regularly (M=2.00, SD=0.81, +1% increase from baseline). No statistically significant differences were noted in the frequency that any action was undertaken between the two surveys.

In **Romania**, the action undertaken most frequently by respondents of the follow-up survey was to allow cooked food to cool down before putting it in the fridge (M=4.8, SD=0.67,+1% increase from baseline) followed by "Switch off lights and appliances when not in use" (M=4.51, SD=0.83, +1% increase from baseline) with the action reported less frequently being "Not overfill the kettle with water" (M=1.78, SD=1.08, +1% increase from baseline). No statistically significant differences between the two surveys were observed.

In the **UK,** the most frequently applied actions by follow-up respondents were washing their clothes only when they had a full load (M=4.65, SD=0.63, +2% increase from baseline) and switching off lights and appliances when not in use (M=4.47, SD=0.73, +1% increase from baseline) while the least frequent action was defrosting the fridge (M=1.83, SD=0.94, +2% increase from baseline).
The frequency that the follow-up respondents undertook the following actions noted a statistically significant difference:

- "Wash clothes at 30 centigrade or less", +4% increase from the beginning of the academic year (t*(1328)=-2.302, p=0.02*).
- "Leave the heating on when you go out for a few hours", +18% increase from the beginning of the academic year (*t(1494)=-5.975, p<0.01*).
- "Leave your PC or TV on standby for long periods of time at home", +10% increase from the beginning of the academic year (*t(1504)=-3.727, p<0.01*).
- "Only wash clothes when you have a full load", +2% increase from the beginning of the academic year (*t(1458)=-2.849, p<0.01*).
- "Allow cooked food to cool down before putting it in the fridge", +4% increase from the beginning of the academic year (*t(1406)=-3.178, p<0.01*).

Table 14 Mean values and standard deviations on the extent respondents wash clothes at 30 degrees or less - Total sample and per country

Wash clothes at 30 centigrade or less							
	Baseline		**Follow-up**		**Change in mean value**	**% change in mean value**	**p value**
	mean	**SD**	**mean**	**SD**			
Bulgaria	3.20	1.20	3.14	1.30	-0.06	-2%	0.776
Cyprus	3.30	1.09	3.29	1.12	-0.01	-0%	0.911
Greece	3.29	1.11	3.09	1.21	-0.20	**-6%***	0.023
Ireland	3.62	1.13	3.50	1.12	-0.11	-3%	0.309
Lithuania	3.21	1.15	3.18	1.16	-0.03	-1%	0.714
Romania	3.59	1.15	3.53	1.10	-0.06	-2%	0.530
UK	3.54	1.18	3.68	1.11	0.14	**4%***	0.022
Total	3.41	1.15	3.39	1.15	-0.02	-1%	0.546

*: statistically significant difference

Table 15 Mean values and standard deviations of the extent respondents leave the heating on when they go out for a few hours– Total sample and per country

Leave the heating on when you go out for a few hours							
	Baseline		**Follow-up**		**Change in mean value**	**% change in mean value**	**p value**
	mean	**SD**	**mean**	**SD**			
Bulgaria	2.15	1.26	2.28	1.39	0.13	6%	0.542
Cyprus	1.23	0.63	1.28	0.76	0.05	4%	1.962
Greece	1.51	0.95	1.54	1.02	0.03	2%	0.660
Ireland	1.51	0.87	1.70	0.89	0.18	**12%***	0.036
Lithuania	2.27	1.42	2.20	1.40	-0.07	-3%	0.530
Romania	2.66	1.46	2.55	1.39	-0.11	-4%	0.384
UK	1.84	1.01	2.17	1.06	0.33	**18%***	0.000
Total	1.83	1.16	1.82	1.14	0.00	0%	0.986

*: statistically significant difference

Table 16 Mean values and standard deviations of the extent respondents leave their PC or TV on standby for long periods of time at home- Total sample and per country

Leave your PC or TV on standby for long periods of time at home							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.65	1.34	2.98	1.36	0.33	12%	0.136
Cyprus	2.24	1.23	2.43	1.19	0.19	**9%***	0.006
Greece	2.57	1.29	2.70	1.27	0.13	5%	0.169
Ireland	2.39	1.30	2.68	1.31	0.30	**13%***	0.020
Lithuania	2.76	1.36	2.85	1.28	0.10	4%	0.326
Romania	2.14	1.37	2.22	1.33	0.08	4%	0.505
UK	2.45	1.23	2.70	1.30	0.25	**10%***	0.000
Total	2.45	1.30	2.60	1.28	0.15	**6%***	0.000

*: statistically significant difference

Table 17 Mean values and standard deviations of the extent respondents switch off lights and appliances when not in use- Total sample and per country

Switched off lights and appliances when not in use							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	4.35	0.83	4.54	0.60	0.20	5%	0.079
Cyprus	4.49	0.79	4.44	0.80	-0.04	-1%	0.321
Greece	4.22	0.98	4.31	0.89	0.10	2%	0.155
Ireland	4.43	0.75	4.39	0.81	-0.04	-1%	0.597
Lithuania	4.25	0.93	4.33	0.94	0.08	2%	0.234
Romania	4.49	0.86	4.51	0.83	0.02	1%	0.769
UK	4.43	0.73	4.47	0.73	0.04	1%	0.314
Total	4.38	0.84	4.42	0.82	0.04	1%	0.055

Table 18 Mean values and standard deviations of the extent respondents leave a mobile phone charger switched on at the socket when not in use- Total sample and per country

Leave a mobile phone charger switched on at the socket when not in use							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.99	1.48	3.48	1.55	0.49	**16%***	0.045
Cyprus	3.22	1.55	3.25	1.47	0.04	1%	0.671
Greece	3.49	1.43	3.50	1.46	0.01	0%	0.943
Ireland	2.98	1.49	3.20	1.47	0.22	7%	0.131
Lithuania	3.05	1.54	3.19	1.50	0.14	5%	0.218
Romania	3.46	1.49	3.22	1.50	-0.23	-7%	0.070
UK	3.37	1.42	3.34	1.43	-0.03	-1%	0.696
Total	3.29	1.48	3.29	1.47	0.00	0 %	0.993

*: statistically significant difference

Table 19 Mean values and standard deviations of the extent respondents do not overfill the kettle with water- Total sample and per country

Not overfill the kettle with water							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.53	1.52	3.74	1.55	0.21	6%	0.434
Cyprus	3.65	1.25	3.72	1.25	0.07	2%	0.333
Greece	3.34	1.33	3.46	1.24	0.12	4%	0.228
Ireland	3.21	1.29	3.36	1.30	0.15	5%	0.239
Lithuania	3.72	1.13	3.73	1.11	0.01	0%	0.913
Romania	1.76	1.09	1.78	1.08	0.01	1%	0.911
UK	3.57	1.24	3.63	1.19	0.05	2%	0.397
Total	3.40	1.34	3.51	1.30	0.12	**3%***	0.002

Table 20 Mean values and standard deviations of the extent respondents put lids on pans when cooking on the hob- Total sample and per country

Put lids on pans when cooking on the hob							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.98	0.93	3.84	0.85	-0.14	-3 %	0.359
Cyprus	3.68	1.06	3.70	0.99	0.02	0%	0.792
Greece	3.71	1.08	3.77	1.06	0.06	2%	0.484
Ireland	3.23	1.24	3.36	1.22	0.13	4%	0.295
Lithuania	4.03	0.95	4.01	1.01	-0.02	-1%	0.776
Romania	3.46	1.18	3.63	1.17	0.17	5%	0.131
UK	3.41	1.17	3.50	1.17	0.09	3%	0.157
Total	3.61	1.13	3.66	1.10	0.05	1%	0.118

*: statistically significant difference

Table 21 Mean values and standard deviations of the extent respondents only wash clothes when they have a full load- Total sample and per country

Only wash clothes when you have a full load							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	4.21	0.84	4.54	0.66	0.33	**8%***	0.007
Cyprus	4.24	0.89	4.39	0.84	0.16	**4%***	0.002
Greece	4.02	1.06	4.29	0.92	0.27	**7%***	0.000
Ireland	4.40	0.88	4.49	0.78	0.08	2%	0.321
Lithuania	4.27	0.86	4.34	0.82	0.07	2%	0.270
Romania	3.92	1.24	3.98	1.17	0.06	2%	0.569
UK	4.55	0.76	4.65	0.63	0.10	**2%***	0.004
Total	4.27	0.95	4.42	0.85	0.14	**3%***	0.000

*: statistically significant difference

Table 22 Mean values and standard deviations of the extent respondents defrost the fridge frequently- Total sample and per country

Defrost the fridge frequently							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.64	1.13	2.51	1.16	-0.13	-5 %	0.502
Cyprus	2.53	1.06	2.51	1.04	-0.01	-1%	0.815
Greece	2.50	1.05	2.49	1.02	0.00	-0%	0.957
Ireland	2.19	1.11	2.21	1.09	0.01	1%	0.913
Lithuania	1.97	0.86	2.00	0.81	0.03	1%	0.658
Romania	2.54	1.05	2.59	1.11	0.05	2%	0.600
UK	1.79	0.90	1.83	0.94	0.04	2%	0.375
Total	2.20	1.04	2.25	1.05	0.05	2%	0.067

Table 23 Mean values and standard deviations of the extent respondents allow food to cool down before putting it in the fridge- Total sample and per country

Allow cooked food to cool down before putting it in the fridge							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	4.47	0.87	4.74	0.64	0.27	**6%***	0.024
Cyprus	4.01	1.23	3.94	1.34	-0.07	-2%	1.962
Greece	3.67	1.38	3.70	1.47	0.03	1%	0.763
Ireland	4.35	1.01	4.31	1.02	-0.05	-1%	0.629
Lithuania	4.13	1.17	4.18	1.15	0.05	1%	0.558
Romania	4.76	0.76	4.80	0.67	0.05	1%	0.429
UK	4.16	1.06	4.33	0.93	0.16	**4%***	0.002
Total	4.14	1.17	4.17	1.18	0.03	1%	0.337

*: statistically significant difference

3.7 Actions taken to reduce energy costs

Respondents were asked which of the mentioned targeted actions, if any, were taken whilst in their current accommodation in order to reduce the cost of their energy bills. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results are presented in Table 24 and illustrated in Figure 6.

The most popular responses in both surveys were "Took actions to reduce my energy usage" (51% Follow-up, 46% Baseline) and "Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep the heating down in your home" (43% Follow-up, 40% Baseline). In addition, both actions recorded a statistically significant increase between the two surveys of +5% ($z=-3.540$, $p<0.001$) and +4% ($z=-2.732$, $p=0.003$) respectively. Moreover, although there was a fair share of baseline respondents who didn't take any action towards energy saving (24%), a statistically significant decrease of -3% was observed in the end of the academic year survey ($z=-2.739$, $p=0.003$). "Approached landlord to buy more energy efficient appliances, or bought some myself" (14.5% Follow-up, 14% Baseline) and "Approached landlord to improve insulation or heating system" (9% Follow-up, 10% Baseline) were the third and fourth most selected actions, whereas the least undertaken action that was observed in both surveys was the use of a smart meter to identify energy wastage (7% Follow-up, 6% Baseline).

The biggest share of follow-up respondents in **Bulgaria** (53%) **Cyprus** (49%), **Greece** (36%), **Ireland** (63%), **Romania** (55%) and **Lithuania** (33%) reduced their energy costs by reducing their energy usage while in the **UK** (67%), the majority of respondents reduced their energy costs by wearing outdoor wear.

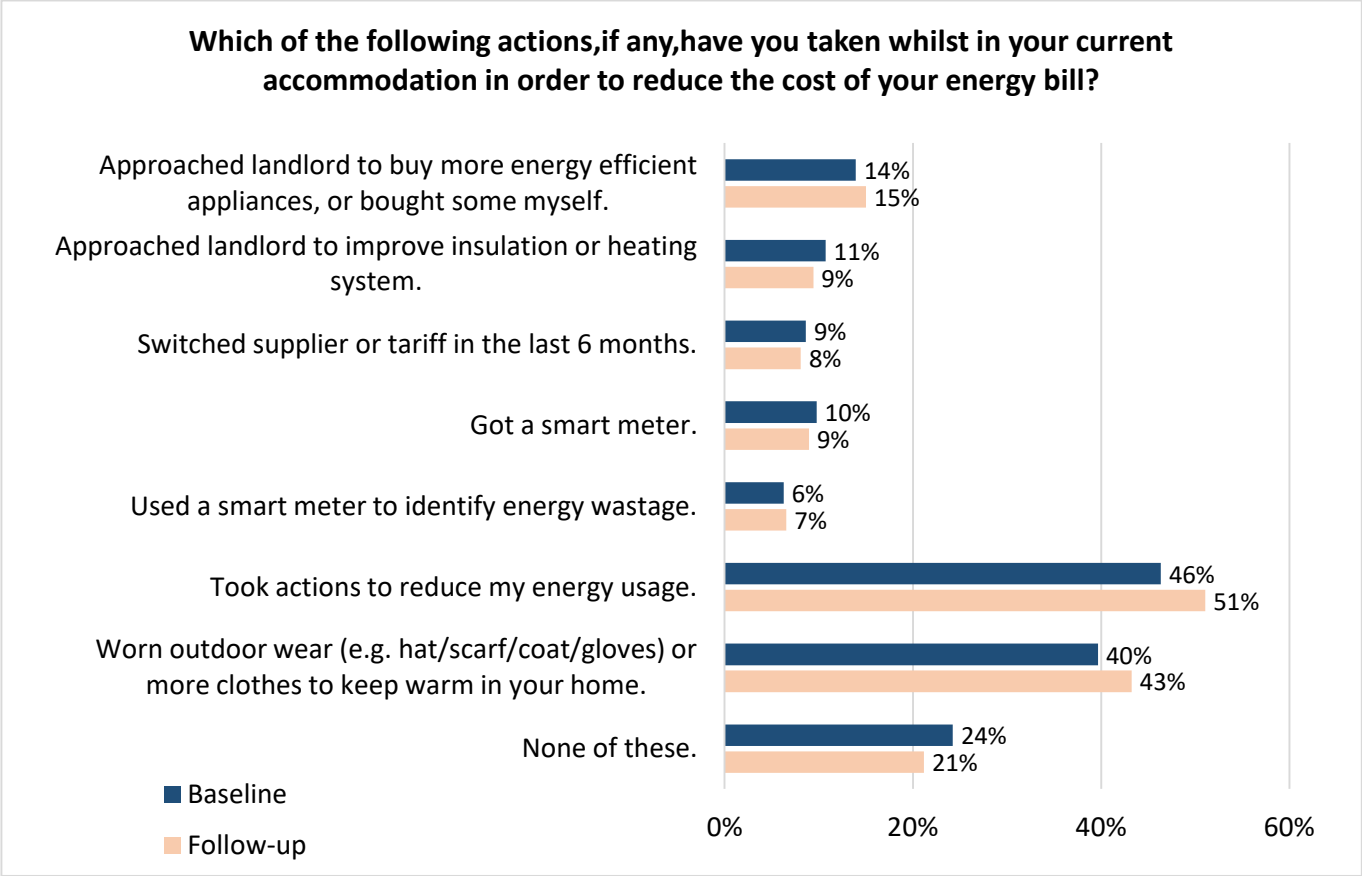

Figure 6 Actions taken by respondents to reduce their energy costs whilst in their current accommodation – Total sample

In **Bulgaria**, the second most popular action between the respondents in both surveys was to wear outdoor wear or more clothes inside their homes in order to reduce their energy costs and at the same time to stay warm (22% Follow-up, 25% Baseline). Interestingly, 35% of the follow-up respondents had not taken any of the listed actions, presenting a +19% statistically significant increase from the baseline survey (*z=-2.763, p=0.003*)

In **Cyprus**, wearing extra clothes to keep the heating down was another popular response (43%) which in fact showed a statistically significant increase (+8%) compared to the baseline (*z=-2.839, p=0.002*). On the contrary, a statistically significant decrease of -5% and -5% respectively, is observed in the share of the follow-up respondents who approached their landlord to buy more energy efficient appliances, or bought some themselves (17%) (*z=-2.392, p=0.008*) and to improve insulation or heating system (8%) (*z=-2.835, p=0.002*).

In **Greece**, the second most popular action reported from respondents in both surveys, was to wear outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in their home (35% Follow-up, 32% Baseline) while slightly more than a quarter of respondents at the end of the academic year, did not take any of these actions (26% Follow-up, 31% Baseline).

In **Ireland**, those who took actions to reduce their energy usage were the majority in the end of the academic year survey (63%) noting a statistically significant increase, compared to baseline, of +12% (*z=-2.606, p=0.005*). In addition, more than half of those that participated in both surveys (60% Follow-up, 54%

Baseline) wore outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in their home. Finally, a statistically significant decrease of -4% (*z=-2.131, p=0.017*), was observed with regard to the usage of a smart meter to identify energy wastage (3% Follow-up, 7% Baseline).

In **Lithuania** "none of these actions" was the most popular response by those participating in both surveys (39% Follow-up, 37% Baseline). The second and third most selected answers were "Took actions to reduce my energy usage" (33% Follow-up, 32% Baseline) and "Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in your home" (22% Follow-up, 22% Baseline) respectively. Minor differences were observed, however they were not statistically significant.

In **Romania** the second most popular action taken by the follow-up participants was to approach their landlord to buy more energy efficient appliances, or bought some themselves (18%). A fair share of respondents in both surveys stated that they didn't take any of the actions described in the list in order to reduce their energy costs (21% Follow-up, 31% Baseline). At the end of the academic year, statistically significant differences were observed for the following actions:

- Switched supplier or tariff in the last 6 months, (8% of follow-up respondents) +4% increase compared to baseline, (*z=-2.014, p=0.022*)
- Took actions to reduce my energy usage, (55% of follow-up respondents) +9% increase compared to baseline, (*z=-2.120, p=0.017*)
- Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in your home, (9% of follow-up respondents) -10% decrease compared to baseline, (*z=-3.315, p=0.001*)
- None of these, (21% of follow-up respondents) -9% decrease compared to baseline, (*z=-2.516, p=0.006*)

In the **UK,** the second most applied action for reducing energy costs in both surveys was the reduction of energy usage (63% Follow-up, 59% Baseline). On the contrary, the UK reported the lowest share of students in both surveys who stated that they did not take any of the actions to reduce their energy costs (10% Follow-up, 13% Baseline).

Table 24 Actions taken by respondents to reduce their energy costs whilst in their current accommodation- Total sample and per country

Actions taken to reduce energy costs		**Bulgaria**	**Cyprus**	**Greece**	**Ireland**	**Lithuania**	**Romania**	**UK**	**Total**
Approached landlord to buy more energy efficient appliances, or bought some myself.	**Follow-up**	12.1%	17.0%	22.5%	11.9%	12.5%	17.5%	8.6%	14.5%
	Baseline	11.5%	22.3%	18.8%	12.0%	13.3%	13.5%	7.6%	13.9%
	difference from baseline	0.6%	**-5.3%***	3.7%	0.0%	-0.9%	4.0%	1.0%	0.5%
Approached landlord to improve insulation or heating system.	**Follow-up**	13.8%	8.4%	14.9%	7.0%	4.7%	16.6%	8.6%	9.4%
	Baseline	14.2%	13.2%	15.3%	10.4%	5.4%	14.6%	7.4%	10.7%
	difference from baseline	-0.4%	**-4.8%***	-0.4%	-3.4%	-0.7%	2.0%	1.2%	-1.3%
Switched supplier or tariff in the last 6 months.	**Follow-up**	1.7%	2.4%	16.3%	9.9%	1.9%	8.3%	14.6%	8.1%
	Baseline	0.9%	1.7%	12.3%	11.5%	2.3%	4.3%	15.5%	8.6%
	difference from baseline	0.8%	0.7%	3.9%	-1.6%	-0.4%	**4.0%***	-0.9%	-0.5%
Got a smart meter.	**Follow-up**	5.2%	3.9%	2.8%	7.8%	11.5%	14.4%	15.7%	9.0%
	Baseline	6.2%	4.7%	3.1%	13.0%	9.9%	9.5%	16.3%	9.8%
	difference from baseline	-1.0%	-0.8%	-0.4%	-5.2%	1.6%	5.0%	-0.6%	-0.8%

Actions taken to reduce energy costs		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Used a smart meter to identify energy wastage.	**Follow-up**	6.9%	3.8%	4.2%	2.9%	7.2%	13.1%	9.9%	6.6%
	Baseline	4.4%	4.0%	2.8%	7.3%	4.3%	8.9%	9.5%	6.3%
	difference from baseline	2.5%	-0.2%	1.4%	**-4.4%***	2.9%	4.2%	0.4%	0.3%
Took actions to reduce my energy usage.	**Follow-up**	53.4%	49.3%	36.3%	63.0%	33.0%	54.6%	63.4%	51.1%
	Baseline	68.1%	46.4%	30.6%	50.5%	31.8%	45.7%	59.1%	46.3%
	difference from baseline	-14.7%	2.9%	5.8%	**12.4%***	1.2%	**8.9%***	4.3%	**4.7%***
Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in your home.	**Follow-up**	22.4%	43.1%	34.9%	60.9%	21.5%	8.7%	66.5%	43.2%
	Baseline	24.8%	35.3%	32.0%	54.7%	21.9%	18.6%	62.0%	39.7%
	difference from baseline	-2.4%	**7.8%***	2.9%	6.2%	-0.4%	**-9.9%***	4.5%	**3.6%***
None of these.	**Follow-up**	34.5%	22.7%	25.6%	12.3%	38.6%	21.4%	10.2%	21.2%
	Baseline	15.9%	27.0%	30.6%	15.6%	36.6%	30.8%	13.4%	24.2%
	difference from baseline	**18.6%***	-4.3%	-5.0%	-3.3%	2.1%	**-9.4%***	-3.1%	**-3.1%***

*: statistically significant difference

3.8 Feelings about saving energy

Respondents were asked to describe their feelings about saving energy from a predefined list of words. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results for the total sample and for each country are presented in Table 25 and illustrated for the total sample in Figure 7.

The highest share of respondents in both the follow-up (35%) and the baseline (36%) surveys, felt optimistic about energy saving. The second most popular answer, which also presented a statistically significant increase of +2% at the end of the year (*z=-2.271, p=0.012*), was the feeling of contentment (23% Follow- up, 21% Baseline) suggesting that, overall, respondents had positive feelings towards saving energy.

In the follow-up survey, 58% of the total sample selected words with positive meaning (Content to Optimistic) while 17% selected words with a negative meaning (Guilty to Frustrated), while in the baseline survey, 57% of the total sample had positive feelings and 16% had negative feelings. The share of those that felt indifferent didn't change drastically between the surveys (+0.2% from baseline).

At the end of the academic year 67% of those surveyed in Bulgaria, 71% in Cyprus, 62% in Lithuania, 53% in Ireland, 56% in the UK, as well as 66% and 85 in Greece and in Romania respectively, described their feelings about saving energy in a positive manner [Optimistic, Proud, Content].

Furthermore, in Bulgaria (33%), Cyprus (33%), Greece (35%) Ireland (32%), Lithuania (44%) Romania (46%) and the UK (28%) the biggest share of follow-up respondents felt optimistic about saving energy. On the other hand, the word "Frustrated" was the least selected in Bulgaria (4%), Cyprus (2%), Greece (2%), Ireland (6%), Romania (1%) and the UK (8%), while in Lithuania (2%) "Proud" was the least selected option.

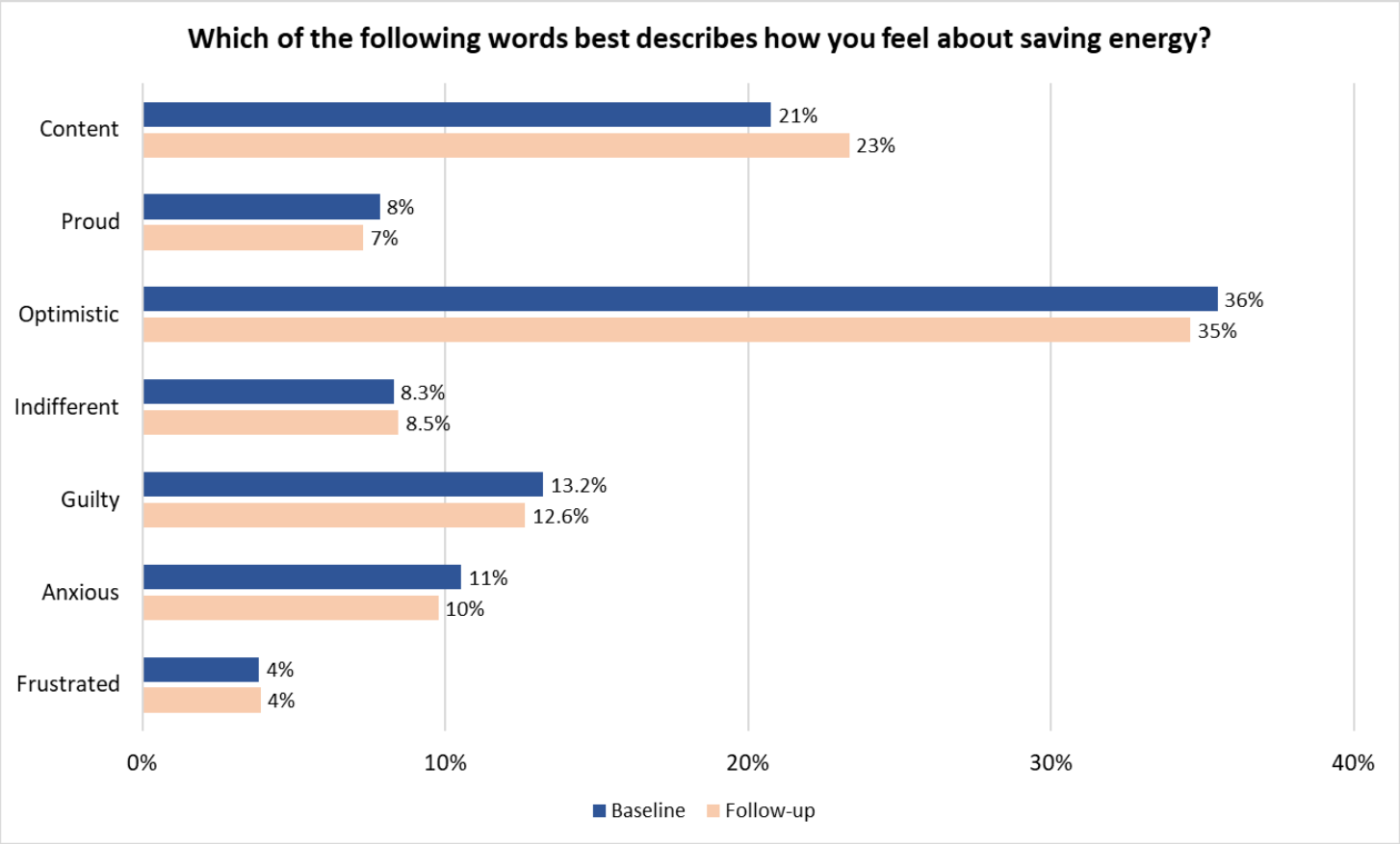

Figure 7 Feelings about saving energy - Total sample

In **Bulgaria,** at the end of the academic year, most respondents chose the word "Optimistic" (33%) to describe their feelings about energy saving. Second came those who felt content (29%).

In **Cyprus**, respondents mostly felt optimism (33%) and contentment (30%). In addition, it is noteworthy that Cyprus reported the lowest percentage of respondents that felt indifferent towards energy saving in both surveys (4% Follow-up, 6% Baseline).

Follow-up respondents from **Greece** mostly felt optimistic (35%) and content (24%).

In **Ireland,** follow-up respondents mostly felt optimistic (32%) and guilty (18%). In the end of the academic year survey, those surveyed in Ireland were the ones with the least positive feelings cumulatively (32% Optimistic; 13% Content; 8% Proud) compared to respondents from other countries.

In **Lithuania,** those questioned mostly felt optimistic (44%) and anxious (16%) about saving energy.

In **Romania,** follow-up respondents mostly felt optimistic (46%) and content (30%) about saving energy. In fact, respondents from Romania at the end of the year reported the lowest proportion (8%) of negative feelings cumulatively, (1% Frustrated, 1% Anxious, 5% Guilty;). In addition, a statistically significant decrease of -7% with regard to those who felt guilty about saving energy was observed (*z=-2.617, p=0.004*).

In the **UK,** the prevailing feeling in the follow-up survey was optimism (28%) but a statistically significant increase of +3% was also observed in the proportion of participants who felt indifferent about saving energy (*z=-2.129, p=0.017*).

Table 25 Feelings about saving energy - Total sample and per country

Feelings about saving energy		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Frustrated	**Follow-up**	3.6%	1.7%	2.2%	6.3%	2.7%	0.9%	8.3%	3.9%
	Baseline	0.9%	1.8%	1.9%	5.7%	2.6%	0.9%	7.9%	3.8%
	difference from baseline	2.7%	-0.1%	0.3%	0.6%	0.1%	0.0%	0.4%	0.0%
Anxious	**Follow-up**	7.3%	9.1%	9.7%	13.1%	16.3%	1.3%	9.6%	9.8%
	Baseline	13.8%	7.0%	8.8%	10.3%	21.2%	0.6%	11.9%	10.5%
	difference from baseline	-6.5%	2.0%	0.9%	2.8%	-4.9%	0.7%	-2.3%	-0.7%
Guilty	**Follow-up**	10.9%	14.1%	13.1%	17.6%	9.0%	5.4%	13.5%	12.6%
	Baseline	9.2%	12.9%	16.8%	18.9%	7.3%	11.9%	14.1%	13.2%
	difference from baseline	1.7%	1.3%	-3.8%	-1.2%	1.7%	**-6.5%***	-0.6%	-0.6%
Optimistic	**Follow-up**	32.7%	33.3%	35.4%	31.7%	44.2%	46.4%	27.8%	34.6%
	Baseline	46.8%	34.7%	33.7%	33.1%	41.0%	46.4%	29.2%	35.5%
	difference from baseline	-14.1%	-1.5%	1.8%	-1.5%	3.1%	0.0%	-1.4%	-0.9%
Proud	**Follow-up**	5.5%	7.6%	6.7%	7.7%	2.3%	8.9%	9.1%	7.3%
	Baseline	3.7%	9.4%	7.1%	10.9%	2.1%	8.1%	9.9%	7.8%
	difference from baseline	1.8%	-1.8%	-0.4%	-3.2%	0.2%	0.8%	-0.8%	-0.5%
Content	**Follow-up**	29.1%	30.0%	23.9%	13.1%	15.9%	29.5%	19.4%	23.1%
	Baseline	19.3%	28.1%	24.9%	10.3%	14.2%	24.6%	18.1%	20.9%
	difference from baseline	9.8%	1.8%	-1.0%	2.8%	1.8%	4.8%	1.3%	**2.2%***
Indifferent	**Follow-up**	10.9%	4.3%	9.0%	10.4%	9.6%	7.6%	12.3%	8.5%
	Baseline	6.4%	6.0%	6.9%	10.9%	11.6%	7.5%	8.9%	8.3%
	difference from baseline	4.5%	-1.8%	2.1%	-0.4%	-1.9%	0.1%	**3.4%***	0.2%

*: statistically significant difference

3.9 Behavioral antecedents

Respondents were asked about the level of agreement, if at all, with given statements about energy related issues. Results for the total sample and for each country are presented in Table 26– Table 34 and illustrated in Figure 8 for the total number of respondents. Results are on a 1 to 5 scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree). Mean values (M) over 3.5 indicate agreement with the statement. A low standard deviation (SD) indicates that the given answers tend to be close

to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the baseline and follow-up survey are statistically significant.

By the end of the academic year, the total sample of respondents agreed the most with the statements "Everyone including myself is responsible for climate change" (M=4.32, SD =0.85) and "Energy conservation contributes to a reduction of climate change impacts" (M=4.28, SD =0.74). In contrast, the total sample of respondents disagreed the most with the statement "Saving energy is too much of a hassle" (M=2.16, SD=0.88).

Statistically significant differences between the baseline and follow-up survey findings were found in the following items:

- "I feel jointly responsible for the exhaustion of energy sources": -2% decrease in mean value in the follow-up survey suggesting a weaker agreement with the statement compared to the baseline survey (*t(5354)=2.306, p=0.02*).
- "I can reduce my energy use quite easily": +2% increase in mean value in the follow-up survey suggesting a stronger agreement with the statement compared to the baseline survey (*t(5355)=-2.541, p=0.01*).
- "Most people who are important to me try to pay attention to their energy use": +2% increase in mean value in the follow-up survey suggesting a stronger agreement with the statement compared to the baseline survey (*t(5366)=-2.211, p=0.03*).
- "I feel morally obliged to save energy, regardless of what others do": +2% increase in mean value in the follow-up survey suggesting a stronger agreement with the statement compared to the baseline survey (*t(5365)=-2.112, p=0.03*)

In addition, in all countries, respondents in both surveys agreed (mean value close to 4) with three out of the nine statements. They agreed that a) energy conservation contributes to a reduction of climate change impacts, b) everyone including their self is responsible for climate change, and c) they feel morally obliged to save energy, regardless of what others do. Furthermore, in all countries, respondents disagreed more rather than agreed (mean value close to 2) that "Saving energy is too much of a hassle".

In Bulgaria, Ireland, Romania and the UK, respondents agreed the most on that "Everyone including myself is responsible for climate change". In Greece and Cyprus, respondents agreed the most that "Energy conservation contributes to a reduction of climate change impacts". In Lithuania respondents agreed the most with the statement "I feel jointly responsible for the exhaustion of energy sources".

In **Bulgaria**, follow-up respondents agreed on the statements "Everyone including myself is responsible for climate change" (M=4.36, SD=0.80) and "Energy conservation contributes to a reduction of climate change impacts" (M=4.16, SD=0.86). On the other hand, they disagreed the most with "Saving energy is too much of a hassle" (M=2.82, SD=0.36) and "Saving energy means I have to live less comfortably" (M=2.56, SD=0.98). Statistically significant differences were observed in the following statements:

- Saving energy is too much of a hassle, +15% increase in mean value in follow-up, *(t(92)=-2.111, p=0.04).*

Respondents from **Cyprus** agreed that "Energy conservation contributes to a reduction of climate change impacts" (M=4.31, SD=0.73) and that "Everyone including myself is responsible for climate change" (M=4.30, SD=0.81). On the other hand, they disagreed the most with "Saving energy is too much of a hassle" (M=2.04, SD=0.86) and "Saving energy means I have to live less comfortably" (M=2.13, SD=0.93).
Statistically significant differences were observed in the following statements:

- "Energy conservation contributes to a reduction of climate change impacts". -2% decrease in mean value in follow-up, (*t(1242)=2.327, p=0.02*).
- "I feel jointly responsible for the exhaustion of energy sources", -3% decrease in mean value in follow-up, (*t(1242)=2.133, p=0.03*).
- "Saving energy is too much of a hassle". +5% increase in mean value in follow-up, (*t(1240)=-2.130, p=0.03*).
- "Everyone including myself is responsible for climate change". -2% decrease in mean value in follow-up, (*t(1240)=2.093, p=0.04*).

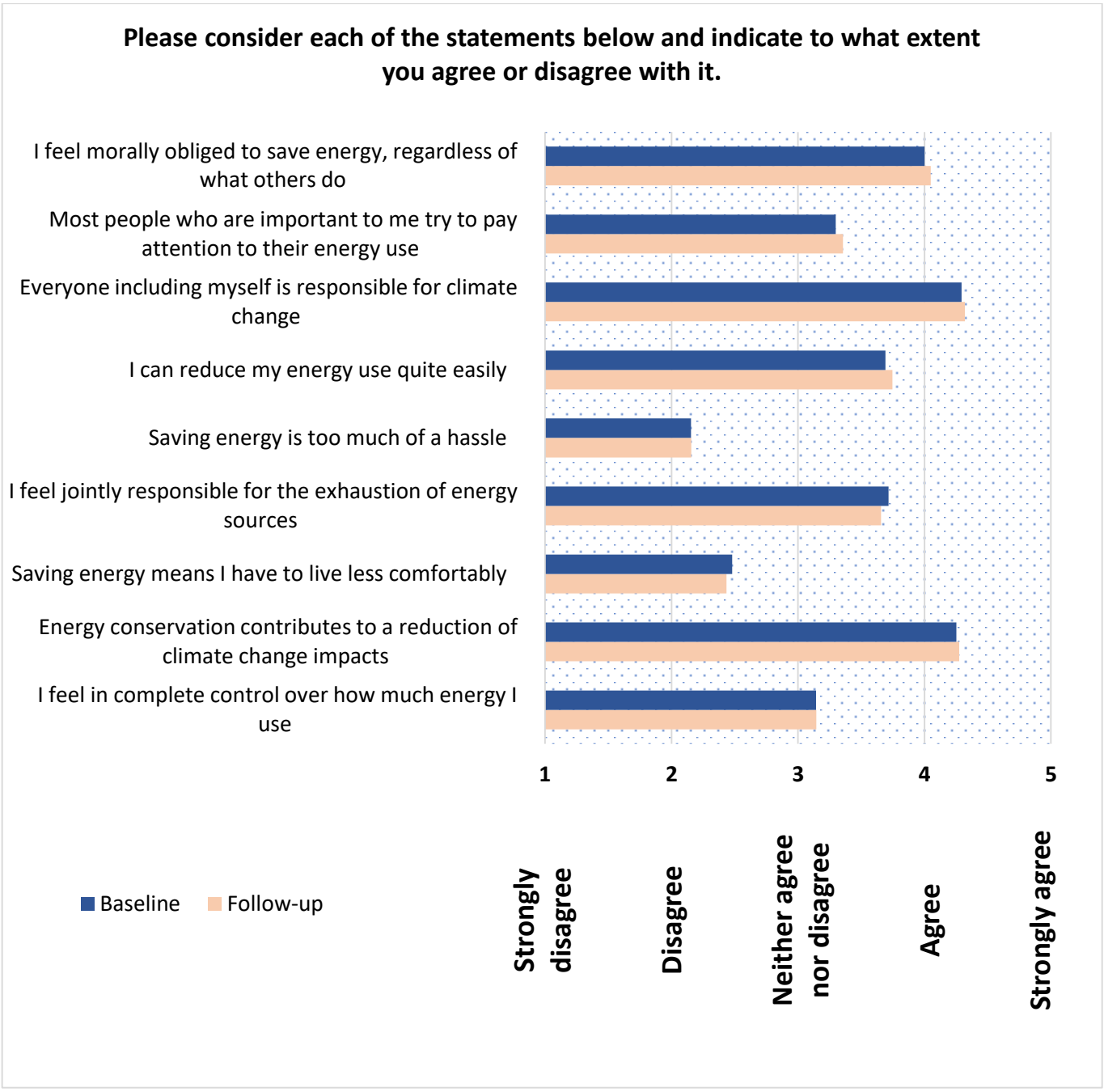

Figure 8 Behavioral antecedents – Total sample

In **Greece** follow-up participants agreed the most that "Energy conservation contributes to a reduction of climate change impacts" (M=4.33, SD=0.66) and that "Everyone including myself is responsible for climate change" (M=4.23, SD=0.93). On the other hand, they disagreed that "Saving energy is too much of a hassle" (M=2.14, SD=0.86) and that "Saving energy means I have to live less comfortably" (M=2.22, SD=0.9). Statistically significant differences were observed in the following statements:

- "Energy conservation contributes to a reduction of climate change impacts": +3% increase in mean value in follow-up, (*t(792)=-2.426, p=0.02*).
- "Most people who are important to me try to pay attention to their energy use": -4% decrease in mean value in follow-up, (*t(791)=2.103, p=0.036*).

In **Ireland**, by the end of the academic year, respondents mostly agreed that "Everyone including myself is responsible for climate change" (M=4.37 , SD=0.86), that "Energy conservation contributes to a reduction of climate change impacts" (M=4.30 , SD=0.67) and that "I feel morally obliged to save energy, regardless of what others do" (M=4.13 , SD=0.79). On the contrary, respondents disagreed that "Saving energy means I have to live less comfortably" (M=2.49, SD=0.97) and "Saving energy is too much of a hassle" (M=2.11, SD=0.84), presenting in fact a statistically significant increase regarding the later statement (+10%, *t(392)=-2.191, p=0.03*)

At the end of the academic year, participants from **Lithuania** agreed the most with "I feel jointly responsible for the exhaustion of energy sources" (M=4.41 , SD=0.69), "Everyone including myself is responsible for climate change" (M=4.36 , SD=0.85) and "Energy conservation contributes to a reduction of climate change impacts" (M=4.3 , SD=0.77). The statement "Saving energy is too much of a hassle" had the lowest level of agreement (M=2.45, SD=0.87). No statistically significant differences were recorded.

Follow-up respondents from **Romania** agreed the most with "Everyone including myself is responsible for climate change" (M=4.32, SD=0.8) and "Energy conservation contributes to a reduction of climate change impacts" (M=4.08, SD=0.74). In contrast, they disagreed with the statement "Saving energy is too much of a hassle" (M=2.20, SD=0.86).
Statistically significant differences were observed in the following statements:

- "Energy conservation contributes to a reduction of climate change impacts", -3% decrease in mean value in follow-up, (*t(568)=2.114, p=0.03*).
- "I can reduce my energy use quite easily", +3% increase in mean value in follow-up, (*t(566)=-2.120, p=0.03*).
- "Most people who are important to me try to pay attention to their energy use", +7% increase in mean value in follow-up, (*t(524)=-3.293, p=0.001*).

In the **UK**, follow-up participants mostly agreed with "Everyone including myself is responsible for climate change" (M=4.34 , SD=0.90), "Energy conservation contributes to a reduction of climate change impacts" (M=4.27 , SD=0.77) and with "I feel morally obliged to save energy regardless of what others do" (M=4.19 , SD=0.80). Like in most of the countries, respondents from the UK disagreed the most that "Saving energy is too much of a hassle" (M=2.09, SD=0.86). No statistically significant differences were recorded.

Table 26 Mean values and standard deviations about "I feel in complete control over how much energy I use" - Total sample and per country

I feel in complete control over how much energy I use							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.13	0.86	3.15	1.15	0.02	1%	0.923
Cyprus	3.13	0.87	3.15	0.87	0.03	1%	0.617
Greece	2.98	0.84	2.91	0.88	-0.08	-3%	0.243
Ireland	2.96	1.02	3.06	1.03	0.10	3%	0.342
Lithuania	3.34	0.88	3.28	0.89	-0.06	-2%	0.335
Romania	3.43	0.88	3.55	0.82	0.11	3%	0.120
UK	3.07	0.98	3.05	0.96	-0.02	-1%	0.650
Total	3.14	0.92	3.14	0.93	0.00	0%	0.931

Table 27 Mean values and standard deviations about "Energy conservation contributes to a reduction of climate change impacts" - Total sample and per country

Energy conservation contributes to a reduction of climate change impacts							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			

Energy conservation contributes to a reduction of climate change impacts							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	4.01	0.83	4.16	0.86	0.15	4%	0.268
Cyprus	4.40	0.70	4.31	0.73	-0.10	**-2%***	0.020
Greece	4.20	0.72	4.33	0.66	0.13	**3%***	0.015
Ireland	4.18	0.84	4.30	0.67	0.13	3%	0.105
Lithuania	4.22	0.83	4.30	0.77	0.08	2%	0.184
Romania	4.21	0.75	4.08	0.74	-0.14	**-3%***	0.035
UK	4.27	0.73	4.27	0.77	0.00	-0%	0.931
Total	4.25	0.76	4.28	0.74	0.02	1%	0.272

*: statistically significant difference

Table 28 Mean values and standard deviations about "Saving energy means I have to live less comfortably" - Total sample and per country

Saving energy means I have to live less comfortably							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.36	0.93	2.56	0.98	0.20	8%	0.211
Cyprus	2.09	0.94	2.13	0.93	0.04	2%	0.466
Greece	2.32	0.89	2.22	0.90	-0.10	-4%	0.139
Ireland	2.41	0.89	2.49	0.97	0.08	3%	0.387
Lithuania	2.70	0.93	2.67	0.97	-0.03	-1%	0.678
Romania	2.67	0.96	2.70	0.92	0.03	1%	0.749
UK	2.65	0.92	2.66	1.00	0.02	1%	0.727
Total	2.48	0.95	2.43	0.98	-0.05	-2%	0.077

Table 29 Mean values and standard deviations about "I feel jointly responsible for the exhaustion of energy sources" - Total sample and per country

I feel jointly responsible for the exhaustion of energy sources							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.70	0.88	3.60	1.06	-0.10	-3%	0.522
Cyprus	3.55	0.99	3.43	0.99	-0.12	**-3%***	0.033
Greece	3.51	0.94	3.52	0.97	0.01	0%	0.867
Ireland	3.49	0.93	3.57	0.98	0.08	2%	0.390
Lithuania	4.39	0.72	4.41	0.69	0.02	0%	0.722
Romania	3.90	0.79	3.82	0.78	-0.09	-2%	0.209
UK	3.59	0.94	3.60	0.96	0.01	0%	0.801
Total	3.72	0.95	3.66	0.98	-0.06	**-2%***	0.021

*: statistically significant difference

Table 30 Mean values and standard deviations about "Saving energy is too much of a hassle" - Total sample and per country

Saving energy is too much of a hassle							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	2.46	0.90	2.82	1.09	0.36	**15%***	0.038
Cyprus	1.94	0.81	2.04	0.86	0.10	**5%***	0.033
Greece	2.13	0.82	2.14	0.86	0.01	0%	0.894
Ireland	1.93	0.81	2.11	0.84	0.18	**10%***	0.029
Lithuania	2.51	0.91	2.45	0.87	-0.06	-2%	0.368
Romania	2.25	0.89	2.20	0.86	-0.05	-2%	0.478
UK	2.08	0.85	2.09	0.86	0.01	1%	0.780
Total	2.15	0.87	2.16	0.88	0.00	0%	0.910

*: statistically significant difference

Table 31 Mean values and standard deviations about "I can reduce my energy use quite easily" - Total sample and per country

I can reduce my energy use quite easily							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.34	0.76	3.49	0.94	0.15	5%	0.303
Cyprus	3.88	0.77	3.86	0.77	-0.02	-1%	0.666
Greece	3.64	0.76	3.63	0.79	-0.01	-0%	0.818
Ireland	3.69	0.89	3.72	0.85	0.03	1%	0.749
Lithuania	3.59	0.81	3.61	0.82	0.02	1%	0.696
Romania	3.80	0.76	3.93	0.69	0.13	**4%***	0.034
UK	3.67	0.83	3.69	0.86	0.03	1%	0.572
Total	3.69	0.81	3.75	0.81	0.06	**2%***	0.011

*: statistically significant difference

Table 32 Mean values and standard deviations about "Everyone including myself is responsible for climate change" - Total sample and per country

Everyone including myself is responsible for climate change							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	4.19	0.88	4.36	0.80	0.17	4%	0.227
Cyprus	4.40	0.77	4.30	0.81	-0.10	**-2%***	0.037
Greece	4.11	0.94	4.23	0.93	0.12	3%	0.092
Ireland	4.37	0.78	4.37	0.86	0.00	0%	0.953
Lithuania	4.27	0.89	4.36	0.85	0.09	2%	0.196
Romania	4.44	0.75	4.32	0.80	-0.11	-3%	0.083
UK	4.30	0.90	4.34	0.90	0.04	1%	0.372
Total	4.29	0.87	4.32	0.85	0.03	1%	0.261

*: statistically significant difference

Table 33 Mean values and standard deviations about "Most people who are important to me try to pay attention to their energy use" - Total sample and per country

Most people who are important to me try to pay attention to their energy use							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.06	0.86	3.27	1.19	0.21	7%	0.252
Cyprus	3.52	0.85	3.52	0.84	-0.01	-0%	0.882
Greece	3.28	0.87	3.14	0.84	-0.14	**-4%***	0.036
Ireland	3.21	1.13	3.32	0.99	0.11	4%	0.304
Lithuania	2.87	1.06	2.89	1.01	0.02	1%	0.752
Romania	3.32	0.94	3.57	0.81	0.24	**7%***	0.001
UK	3.43	0.90	3.43	0.98	0.00	0%	0.969
Total	3.30	0.95	3.36	0.94	0.06	**2%***	0.027

*: statistically significant difference

Table 34 Mean values and standard deviations about "I feel morally obliged to save energy, regardless of what others do" - Total sample and per country

I feel morally obliged to save energy, regardless of what others do							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.66	0.92	3.71	1.05	0.05	1 %	0.761
Cyprus	4.20	0.82	4.13	0.80	-0.07	-2%	0.134
Greece	4.05	0.77	4.08	0.85	0.03	1%	0.619
Ireland	3.98	0.85	4.13	0.79	0.15	4%	0.074
Lithuania	3.63	0.95	3.73	0.91	0.10	3%	0.141
Romania	3.81	0.89	3.81	0.86	0.00	0%	0.957
UK	4.15	0.83	4.19	0.80	0.03	1%	0.476
Total	4.00	0.87	4.05	0.85	0.05	**1%***	0.035

*: statistically significant difference

3.10 Important criteria when choosing home appliances

Respondents were asked to select the three most important criteria when choosing home appliances from a list provided to them. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant for each of the two groups. Findings are summarized for the total sample in Figure 9 and presented in more detail for the total sample and per country in Table 35– Table 37.

At the beginning of the academic year 86% of those surveyed stated that "Cost of appliance" was among their three most important criteria when choosing home appliances followed by "Functionality of the appliance" (77%) and "Energy efficiency and/or energy certification score of the appliance" (55%). In Bulgaria (51%) "Functionality of the appliance" was the most important criterion when choosing home appliances. In all other countries (Cyprus (38%), Greece (40%), Ireland (38%), Lithuania (34%), Romania (25%) and the UK (44 %)) "Cost of appliance" was the top criterion.

The end of year results showed that the share of respondents who stated "Cost of the appliance" was among their three most important criteria when choosing home appliances remained unaltered (86%), followed by "Functionality of the appliance" (80%) and "Energy efficiency and/or energy certification score of the appliance" (57%). In Bulgaria (45%) and Lithuania (32%), "Functionality of the appliance" was the most important criterion when choosing home appliances. In Cyprus (38%), Greece (40%), Ireland (33%) and the UK (40%),

"Cost of appliance" was the most important criterion when choosing home appliances. In Romania (34%) the "Energy efficiency and/or energy certification score of the appliance" criterion was pointed out as the primary criterion.

Statistically significant differences in respondents' choices between the baseline and the follow-up survey were noted in Cyprus, Ireland and Romania (Table 35 - Table 37).

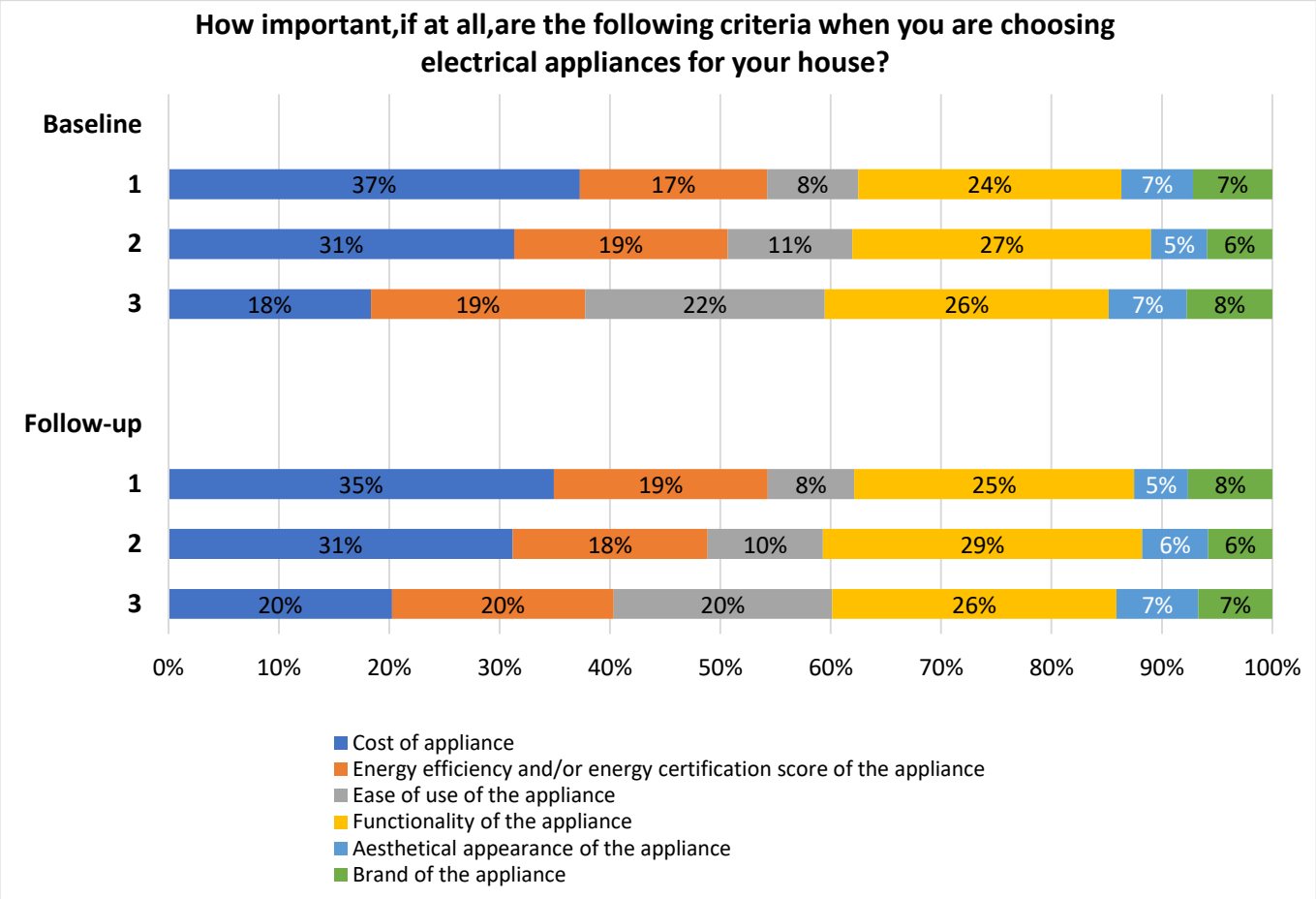

Figure 9 Ranking of criteria when choosing home appliances – Total sample

In **Romania,** at the end of the academic year, a statistically significant increase of +12% was observed in the share of respondents who considered appliances' energy efficiency and/or energy certification score as the most important criterion when choosing electrical appliances for their house (*z=-2.208, p=0.014*). In addition, a statistically significant decrease of -8% was observed on the share of respondents who considered the aesthetical appearance of the appliance as their top criterion (*z=-2.214, p=0.013*).

Similarly to Romania, in **Cyprus** the share of those considering the aesthetical appearance of the appliance as an important factor when choosing home appliances, decreased significantly by -4% (*z=-2.107, p=0.018*).

In **Ireland,** the "Brand of the appliance" criterion was reported by 10% fewer respondents, compared to the baseline with the observed difference being statistically significant (*z=-2.269, p=0.782*).

In the **UK**, a statistically significant increase of +3% was observed for "Aesthetical appearance of the appliance", the second most important determinant when selecting home appliances (*z=-2.069, p=0.019*).

Table 35 First most important criterion when choosing home appliances – Total sample and per country

RANK 1		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Cost of appliance	**Follow-up**	22.6%	37.6%	39.5%	33.1%	29.5%	20.3%	39.7%	34.9%
	Baseline	12.7%	37.6%	39.8%	37.6%	34.0%	25.2%	44.1%	37.3%
	difference from baseline	9.9%	0.0%	-0.3%	-4.6%	-4.5%	-4.8%	-4.3%	-2.4%
Energy efficiency and/or energy certification score of the appliance	**Follow-up**	19.4%	22.5%	14.6%	19.8%	16.8%	33.9%	13.5%	19.4%
	Baseline	15.9%	19.2%	17.2%	20.0%	15.1%	21.7%	14.5%	17.0%
	difference from baseline	3.5%	3.3%	-2.6%	-0.2%	1.8%	**12.2%***	-1.1%	2.4%
Ease of use of the appliance	**Follow-up**	3.2%	9.2%	3.8%	7.4%	7.4%	5.1%	9.9%	7.8%
	Baseline	3.2%	10.1%	8.5%	5.9%	6.2%	7.0%	9.7%	8.3%
	difference from baseline	0.1%	-0.9%	-4.7%	1.6%	1.2%	-1.9%	0.2%	-0.4%
Functionality of the appliance	**Follow-up**	45.2%	18.2%	31.2%	27.3%	32.1%	28.0%	24.4%	25.4%
	Baseline	50.8%	18.1%	24.6%	18.8%	31.3%	22.4%	20.3%	23.8%
	difference from baseline	-5.6%	0.1%	6.6%	8.4%	0.8%	5.6%	4.1%	1.5%
Aesthetical appearance of the appliance	**Follow-up**	6.5%	4.3%	4.5%	6.6%	5.3%	4.2%	5.1%	4.9%
	Baseline	7.9%	8.0%	4.2%	2.4%	6.6%	11.9%	6.2%	6.5%
	difference from baseline	-1.5%	**-3.8%***	0.2%	4.3%	-1.3%	**-7.7%***	-1.0%	-1.6%
Brand of the appliance	**Follow-up**	3.2%	8.3%	6.4%	5.8%	8.9%	8.5%	7.4%	7.6%
	Baseline	9.5%	7.0%	5.6%	15.3%	6.9%	11.9%	5.3%	7.2%
	difference from baseline	-6.3%	1.3%	0.7%	**-9.5%***	2.0%	-3.4%	2.1%	0.4%

*: statistically significant difference

Table 36 Second most important criterion when choosing home appliances - Total sample and per country

RANK 2		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Cost of appliance	**Follow-up**	26.3%	27.2%	28.6%	35.3%	27.8%	27.0%	38.7%	31.2%
	Baseline	34.7%	26.4%	28.2%	35.4%	29.4%	22.7%	37.6%	31.3%
	difference from baseline	-8.4%	0.9%	0.3%	-0.1%	-1.5%	4.3%	1.1%	-0.1%
Energy efficiency and/or energy certification score of the appliance	**Follow-up**	26.3%	22.3%	21.2%	19.8%	14.3%	19.0%	10.5%	17.7%
	Baseline	23.6%	28.9%	20.5%	22.0%	19.7%	13.6%	13.7%	19.3%
	difference from baseline	2.7%	-6.7%	0.7%	-2.3%	-5.3%	5.4%	-3.2%	-1.7%
Ease of use	**Follow-up**	2.6%	11.6%	9.0%	12.6%	8.3%	11.1%	10.5%	10.5%

RANK 2		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
of the appliance	**Baseline**	8.3%	12.0%	13.0%	14.2%	7.7%	16.2%	10.2%	11.3%
	difference from baseline	-5.7%	-0.4%	-4.0%	-1.6%	0.5%	-5.1%	0.3%	-0.8%
Functionality of the appliance	**Follow-up**	31.6%	27.4%	29.6%	23.4%	34.8%	31.0%	28.6%	28.9%
	Baseline	19.4%	22.3%	26.7%	19.7%	30.6%	29.9%	29.8%	27.1%
	difference from baseline	12.1%	5.1%	2.9%	3.7%	4.1%	1.1%	-1.1%	1.8%
Aesthetical appearance of the appliance	**Follow-up**	0.0%	5.0%	4.2%	3.6%	8.3%	4.8%	8.5%	6.0%
	Baseline	2.8%	4.9%	4.9%	2.4%	6.1%	5.8%	5.3%	5.1%
	difference from baseline	-2.8%	0.1%	-0.7%	1.2%	2.1%	-1.1%	**3.2%***	0.9%
Brand of the appliance	**Follow-up**	13.2%	6.5%	7.4%	5.4%	6.5%	7.1%	3.1%	5.8%
	Baseline	11.1%	5.4%	6.7%	6.3%	6.5%	11.7%	3.4%	5.9%
	difference from baseline	2.0%	1.0%	0.7%	-0.9%	0.1%	-4.5%	-0.2%	-0.1%

*: statistically significant difference

Table 37 Third most important criterion when choosing home appliances - Total sample and per country

RANK 3		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Cost of appliance	**Follow-up**	29.7%	21.0%	13.5%	17.4%	26.0%	26.4%	18.1%	20.3%
	Baseline	25.7%	18.7%	15.6%	16.9%	20.8%	21.6%	17.3%	18.3%
	difference from baseline	4.0%	2.3%	-2.1%	0.4%	5.2%	4.9%	0.8%	1.9%
Energy efficiency and/or energy certification score of the appliance	**Follow-up**	29.7%	20.3%	27.5%	18.6%	20.2%	18.2%	17.1%	20.1%
	Baseline	25.7%	19.3%	21.4%	17.7%	19.8%	17.6%	18.2%	19.4%
	difference from baseline	4.0%	1.0%	6.0%	0.9%	0.4%	0.5%	-1.2%	0.7%
Ease of use of the appliance	**Follow-up**	2.7%	20.6%	19.7%	19.8%	14.3%	20.7%	22.6%	19.8%
	Baseline	14.3%	20.7%	23.3%	22.3%	15.6%	20.3%	25.2%	21.7%
	difference from baseline	-11.6%	-0.1%	-3.6%	-2.5%	-1.2%	0.4%	-2.6%	-1.9%
Functionality of the appliance	**Follow-up**	27.0%	26.8%	23.8%	29.3%	22.4%	14.9%	28.4%	25.8%
	Baseline	21.4%	25.1%	22.8%	30.0%	26.3%	20.9%	28.2%	25.7%
	difference from baseline	5.6%	1.8%	1.1%	-0.7%	-3.9%	-6.0%	0.1%	0.0%
Aesthetical appearance of the appliance	**Follow-up**	2.7%	4.1%	8.3%	9.0%	11.2%	4.1%	9.6%	7.4%
	Baseline	2.9%	6.6%	6.1%	9.2%	9.1%	7.2%	7.0%	7.1%
	difference from baseline	-0.2%	-2.5%	2.2%	-0.2%	2.1%	-3.1%	2.6%	0.3%
Brand of the	**Follow-up**	8.1%	7.1%	7.3%	6.0%	5.8%	15.7%	4.3%	6.7%

RANK 3		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
appliance	**Baseline**	10.0%	9.5%	10.8%	3.8%	8.4%	12.4%	4.1%	7.7%
	difference from baseline	-1.9%	-2.4%	-3.6%	2.1%	-2.6%	3.3%	0.2%	-1.0%

*: statistically significant difference

3.11 Awareness of smart meters

Respondents were asked if they had heard of smart meters before. A two proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results for the total sample and per country are shown in Figure 10 and presented for each country as well as for the total sample in Table 38.

At the beginning of the academic year, almost half of the respondents (48% of the total sample) had heard of smart meters before. This share remained unaltered through the academic year.

In **Bulgaria**, in both surveys, the share of respondents that had heard of smart meters before was almost equal (38% Follow-up, 37% Baseline).

In **Cyprus**, less than one third of the follow-up respondents (31%) said that they have heard of smart meters before. Compared to the baseline survey, this share is increased by +3% but this difference was not statistically significant.

In **Greece**, 31% of the baseline respondents reported to have heard of smart meters before they took the survey. By the end of the academic year, 25% of those questioned stated that they had heard of smart meters before, presenting a statistically significant decrease of -7% (*z=-2.016, p=0.022*).

In **Ireland,** half (51%) of the follow-up respondents had heard of smart meters before whereas at the beginning of the academic year this share was 58%. The observed decrease was not statistically significant.

In **Lithuania**, 3% more respondents had heard of smart meters in the follow-up survey (38% Follow-up, 35% Baseline). The observed increase was not statistically significant.

In **Romania**, at the end of the academic year, 49% of the respondents stated that they had heard of smart meters before. The share is 10% higher than what it was in the beginning of the academic year, with the observed increase being statistically significant (*z=-2.219, p=0.013*).

In the **UK,** by the end of the academic year, 86% of those questioned stated that they had heard of smart meters before whereas in the beginning of the academic year this share was 79%. This increase of +8% was statistically significant (*z=-3.700, p<0.001*).

Table 38 Awareness of smart meters - Total sample and per country

Have you heard of smart meters before?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Yes	**Follow-up**	38.2%	31.4%	24.5%	51.4%	37.6%	48.6%	86.4%	48.4%
	Baseline	36.7%	28.0%	31.4%	58.1%	34.7%	39.2%	78.8%	48.2%
	difference from baseline	1.5%	3.4%	**-6.9%***	-6.8%	2.9%	**9.5%***	**7.6%***	0.2%
No	**Follow-up**	61.8%	68.6%	75.5%	48.6%	62.4%	51.4%	13.6%	51.6%
	Baseline	63.3%	72.0%	68.6%	41.9%	65.3%	60.8%	21.2%	51.8%

Have you heard of smart meters before?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
	difference from baseline	-1.5%	-3.4%	6.9%	6.7%	-2.9%	-9.4%	-7.6%	-0.2%

*: statistically significant difference

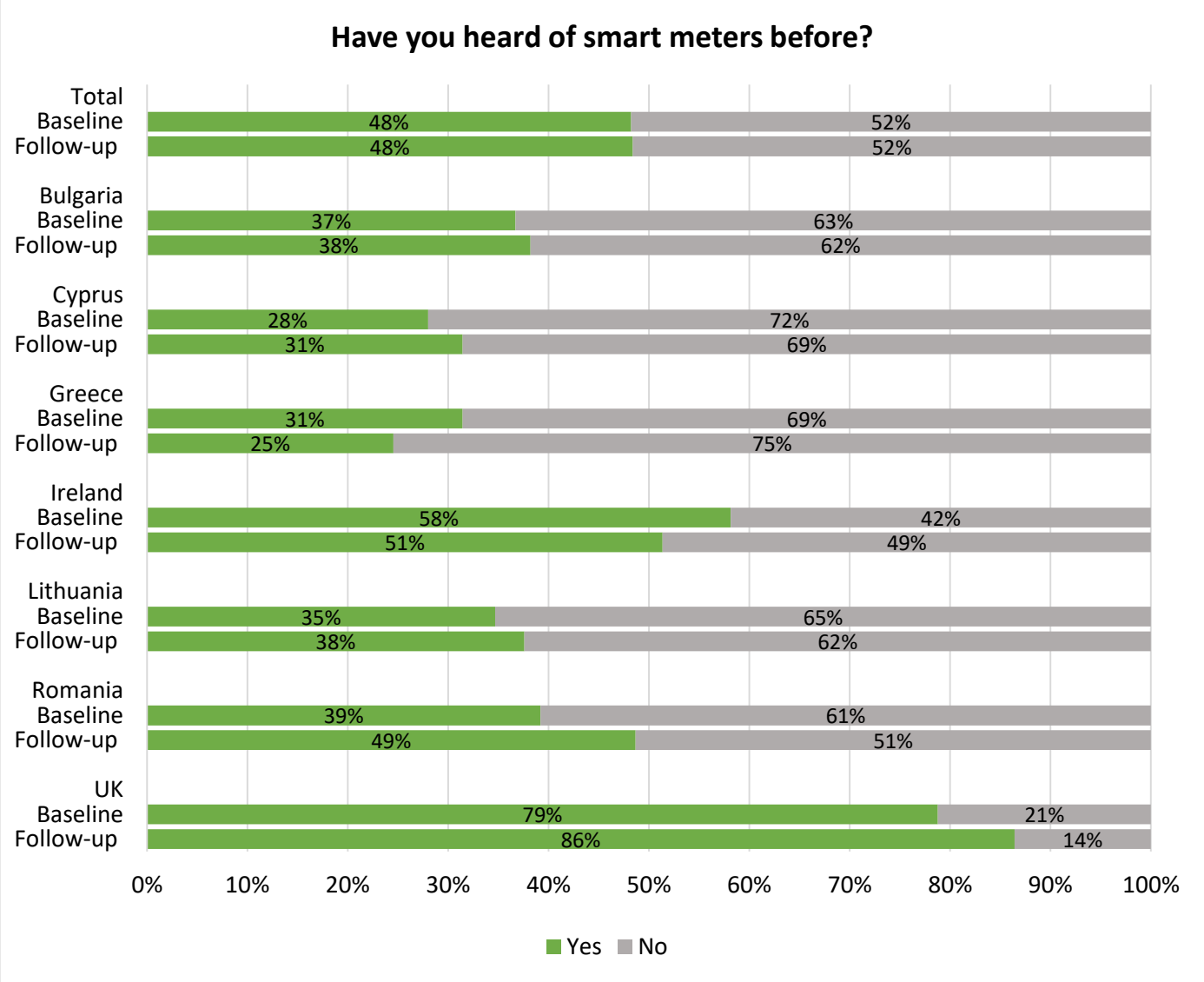

Figure 10 Awareness of smart meters - Total sample and per country

3.12 Presence of smart meters

Respondents were asked if they have a smart meter in their current accommodation. This question was not applicable to participants who replied negatively to the question "Have you heard of smart meters before". A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results per country and for the total sample are illustrated in Figure 11 and presented in Table 39.

In the baseline survey, more than a fifth of the respondents (23%) who stated that they had heard of smart meters before had a smart meter in their accommodation at that time. Thirty-one percent (31%) of the

respondents reported that they did not have a smart meter, however, 37% of those questioned stated that they would like to have one. Furthermore, 10% didn't know if they had a smart meter installed in their house.

In the follow-up survey the share of those surveyed that had a smart meter in their accommodation (25%) was close to that of the baseline survey. Thirty percent (30%) of the follow-up participants reported that they didn't have a smart meter in their current accommodation while, as in the baseline survey, 37% were willing to have a smart meter. Eventually, the share of those who didn't know if they have a smart meter in their current accommodation was decreased to 8% (-2%).

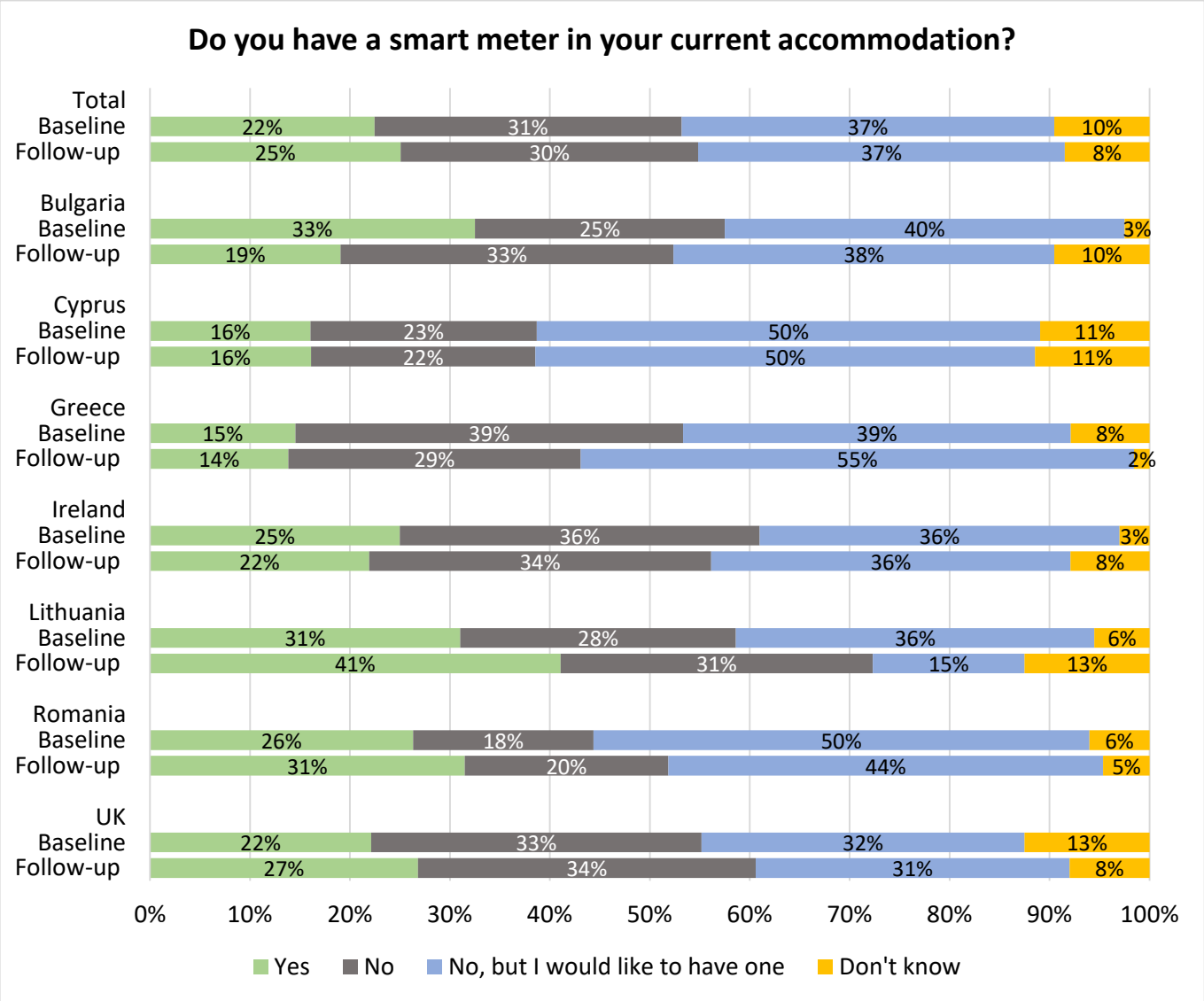

Figure 11 Presence of smart meters in respondents' accommodation - Total sample and per country

In **Bulgaria**, -14% fewer respondents stated they had a smart meter in their accommodation (19%) at the end of the academic year. In addition, in the follow-up survey, 33% of the participants stated that they didn't have a smart meter (+8% increase from baseline) whereas 38% didn't have smart meters but they would like to have one. Ten percent (10%) of those who responded in the end of the year survey didn't know if they had a smart meter in their current accommodation.

In **Cyprus,** 16% reported that they had a smart meter in their current accommodation in both surveys. Those who didn't have a smart meter installed were 22% in the follow-up survey and 23% in the baseline survey. In

both surveys, half of the participants (50%) reported a willingness to have a smart meter whereas 11% didn't know if they had a smart meter in their current accommodation.

In **Greece**, the share of those having a smart meter in their accommodation was the lowest amongst all countries in both surveys (14% Follow-up, 15% Baseline). Those questioned who didn't have a smart meter (29%) were fewer by -10% compared to the baseline. By the end of the academic year, 55% of the respondents, which was the highest share among the countries, reported that even though they didn't have a smart meter, they were willing to have one. In addition, this share presented the biggest increase (+17%) which was statistically significant (*z=-2.286, p=0.011*). Eventually, the share of those who didn't know if they had a smart meter in their current accommodation was reduced to 2%.

In **Ireland,** 22% of the follow-up respondents stated that they had a smart meter in their current accommodation while at the beginning of the academic year those were 25%. Thirty-four percent (34%) of the follow-up respondents didn't have a smart meter however this share was smaller than in the baseline survey (36%). In both surveys, an equal share of 36% stated that although they didn't have a smart meter in their accommodation, they would like to have one. Moreover, 8% of the follow-up respondents didn't know if they had one while this share was 3% in the beginning of the academic year.

In **Lithuania**, +10% more respondents had a smart meter in their accommodation (41%) at the end of the academic year compared to the beginning. In the follow-up survey 31% of the participants stated that they didn't have a smart meter (+3% increase from baseline) whereas 15% stated that they would like to have one (-21% reduction from the baseline; *z=-3.710, p=0.001*). A statistically significant increase of +7% was recorded by the end of the academic year in the share of those who didn't know if they had a smart meter in their current accommodation (13% Follow-up, 6% Baseline) (*z=-1.984, p=0.024)*

In **Romania**, at the end of the academic year, 31% of the respondents had a smart meter in their accommodation (-5% less than in the baseline) whereas 20% (compared to 18% in the baseline) stated that they didn't have a smart meter in their accommodation. Forty four percent (44%) of those surveyed in the follow-up survey stated that although they didn't have a smart meter, they would like to have one (-6% reduction from the baseline survey). Moreover, 5% of the follow-up respondents didn't know if they had one while this share was 6% in the beginning of the academic year.

In the **UK**, 27% of the follow-up respondents stated that they had a smart meter in their accommodation (was 22% in the baseline), 34% that they didn't (+1% increase from the baseline), 31% that, even though they didn't have a smart meter, they would like to have one (-1% reduction from the baseline). Finally, a statistically significant reduction of -5% (reduced from 13% to 8%) of those that didn't know if they had a smart meter was observed in the follow-up survey.

Table 39 Presence of smart meters in respondents' accommodation - Total sample and per country

Do you have a smart meter in your current accommodation?		**Bulgaria**	**Cyprus**	**Greece**	**Ireland**	**Lithuania**	**Romania**	**UK**	**Total**
Yes	**Follow-up**	19.0%	16.1%	13.8%	21.9%	41.1%	31.5%	26.8%	25.1%
	Baseline	32.5%	16.1%	14.5%	25.0%	31.0%	26.3%	22.1%	22.5%
	difference from baseline	-13.5%	0.0%	-0.7%	-3.1%	10.1%	5.2%	4.7%	2.6%
No	**Follow-up**	33.3%	22.5%	29.2%	34.2%	31.3%	20.4%	33.8%	29.8%
	Baseline	25.0%	22.6%	38.8%	36.0%	27.6%	18.0%	33.0%	30.7%
	difference from baseline	8.3%	-0.1%	-9.6%	-1.8%	3.7%	2.4%	0.8%	-0.9%
No, but I would like to	**Follow-up**	38.1%	50.0%	55.4%	36.0%	15.2%	43.5%	31.4%	36.7%
	Baseline	40.0%	50.4%	38.8%	36.0%	35.9%	49.6%	32.3%	37.3%

Do you have a smart meter in your current accommodation?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
have one	**difference from baseline**	-1.9%	-0.4%	**16.6%***	0.0%	**-20.7%***	-6.1%	-0.9%	-0.6%
Don't know	**Follow-up**	9.5%	11.4%	1.5%	7.9%	12.5%	4.6%	8.0%	8.5%
	Baseline	2.5%	10.9%	7.9%	3.0%	5.5%	6.0%	12.5%	9.5%
	difference from baseline	7.0%	0.5%	-6.4%	4.9%	**7.0%***	-1.4%	**-4.5%***	-1.0%

*: statistically significant difference

3.13 Opinions about smart meters

Respondents were asked about their level of agreement, if at all, with given statements with respect to smart meters. Results for the total sample are presented in Figure 12 on a 1 to 5 scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree), and tabulated for each country and for the total sample in Table 40 to Table 44. Mean values over 3.5 indicate agreement with the statement. This question was not applicable to participants who replied negatively in the question "Have you heard of smart meters before". A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the baseline and follow-up survey are statistically significant for each of the two groups.

Overall, respondents in both the baseline and in the follow-up survey had positive opinions about smart meters. These opinions remained unchanged over the academic year (Figure 12). In fact, in all countries, respondents in both surveys agreed (mean values close to 4.0) with the four positive statements:

- "Smart meters are an efficient way of monitoring the energy consumption of my house in real time"
- "Smart meters can help me to save money on my energy bills";
- "Smart meters make my energy easy to understand and control";
- "Smart meters make life easier by taking away the hassle of meter reads and estimated bills";

and disagreed (mean values closer to 2.0) with the one negative statement:

- "Smart meters are an invasion of privacy".

Statistically significant differences in opinions between the baseline and follow-up surveys were observed for one or more statements in Cyprus, Bulgaria, Greece and UK (Table 40 to Table 44).

The following statistically significant differences in mean values were recorded by the end of the academic year in **Cyprus**:

- "Smart meters can help me to save money on my energy bills" (M=4.16, SD=0.6). A -3% reduction in follow-up mean value suggesting a weaker agreement with the statement *(t(355)=2.162, p=0.03*)
- "Smart meters make life easier by taking away the hassle of meter reads and estimated bills" (M=3.84, SD=0.77). A -4% reduction observed in follow-up mean value suggesting a weaker agreement with the statement (*t(355)=2.066, p=0.04)*

In **Bulgaria,** a statistically significant increase of +30% in the follow-up mean value, and therefore a stronger disagreement with the statement "Smart meters are an invasion of privacy" was observed (*t(29)=-2.411, p=0.02*).

On the contrary, for the statement "Smart meters are an invasion of privacy" a statistically significant decrease of -14%, and therefore a stronger agreement, was reported in **Greece**, (*t(138)=2.865, p<0.01*).

In **UK,** a statistically significant increase of +2% in the follow-up mean value, and therefore a stronger agreement, was observed regarding the statement "Smart meters are an efficient way of monitoring the energy consumption of my house in real time" (*t(1188)=-2.223, p=0.03*).

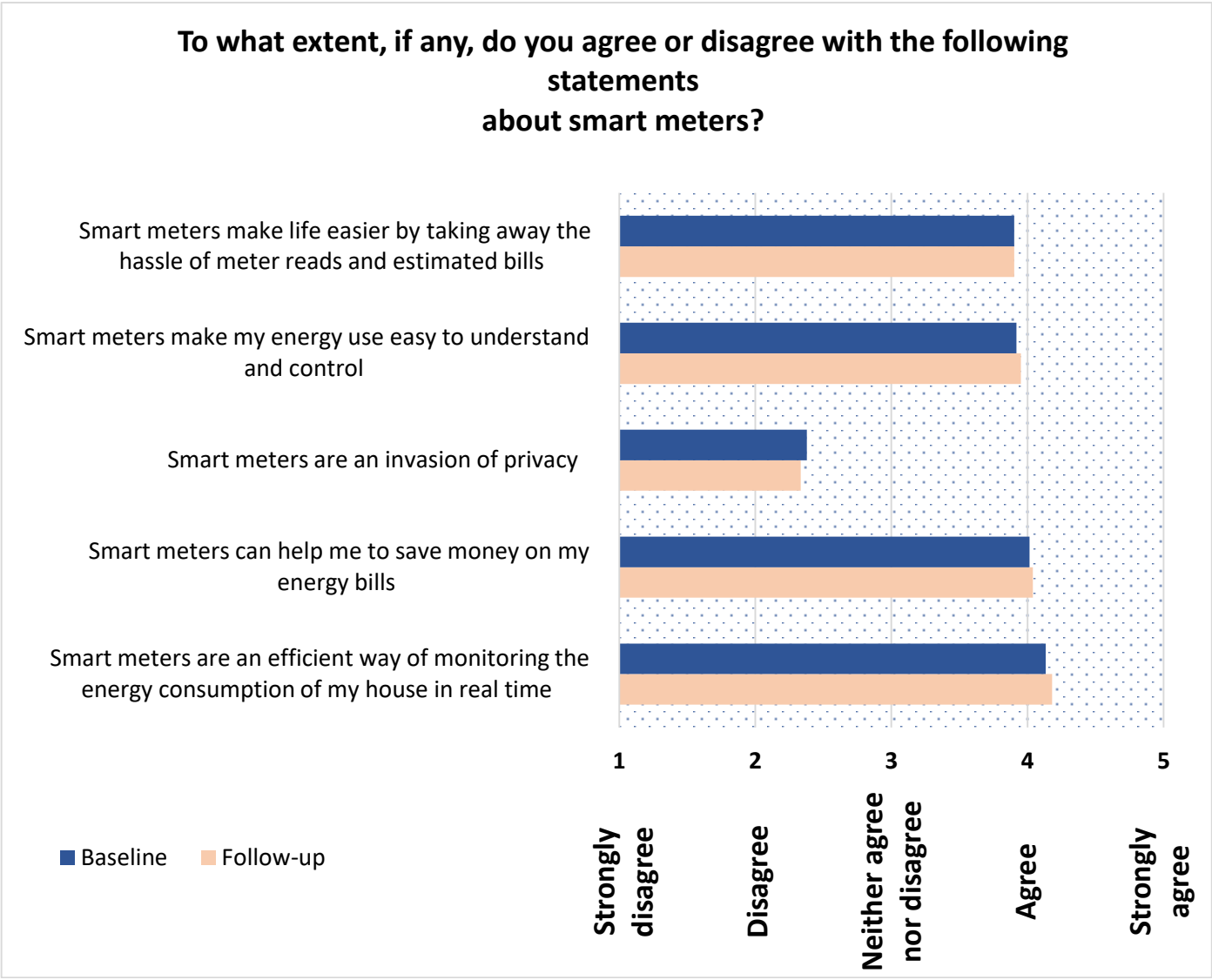

Figure 12 Opinions about smart meters - Total sample

Table 40 Mean values and standard deviations about "Smart meters are an efficient way of monitoring the energy consumption of my house in real time" - Total sample and per country

Smart meters are an efficient way of monitoring the energy consumption of my house in real time							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.98	0.70	3.90	0.94	-0.07	-2%	0.742
Cyprus	4.32	0.61	4.19	0.66	-0.13	-3%	0.063
Greece	4.12	0.64	4.23	0.53	0.11	3%	0.196
Ireland	4.22	0.73	4.17	0.68	-0.05	-1%	0.605
Lithuania	4.15	0.74	4.17	0.70	0.02	1%	0.790
Romania	4.38	0.69	4.38	0.64	0.00	0 %	0.969
UK	4.05	0.74	4.15	0.73	0.10	**2%***	0.026

Smart meters are an efficient way of monitoring the energy consumption of my house in real time							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Total	4.13	0.72	4.18	0.70	0.05	1%	0.093

*: statistically significant difference

Table 41 Mean values and standard deviations about "Smart meters can help me to save money on my energy bills" – Total sample and per country

Smart meters can help me to save money on my energy bills							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.93	0.69	3.76	0.89	-0.16	-4 %	0.432
Cyprus	4.30	0.65	4.16	0.60	-0.15	**-3%***	0.031
Greece	4.03	0.61	4.08	0.59	0.06	1%	0.533
Ireland	4.07	0.90	4.12	0.76	0.04	1%	0.698
Lithuania	3.90	0.85	3.99	0.85	0.09	2 %	0.411
Romania	4.22	0.79	4.20	0.76	-0.02	-1%	0.850
UK	3.94	0.81	3.96	0.86	0.02	0%	0.734
Total	4.01	0.79	4.04	0.79	0.03	1%	0.407

*: statistically significant difference

Table 42 Mean values and standard deviations about "Smart meters are an invasion of privacy" - Total sample and per country

Smart meters are an invasion of privacy							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	1.98	0.66	2.57	1.03	0.60	**30%***	0.022
Cyprus	2.22	0.85	2.30	0.88	0.08	4%	0.387
Greece	2.49	0.93	2.15	0.73	-0.34	**-14%***	0.005
Ireland	2.48	0.95	2.35	0.93	-0.13	-5%	0.334
Lithuania	2.62	0.91	2.45	0.93	-0.17	-7%	0.141
Romania	2.40	0.99	2.47	1.07	0.07	3%	0.615
UK	2.34	0.89	2.30	0.93	-0.04	-2%	0.471
Total	2.38	0.91	2.33	0.93	-0.05	-2%	0.214

*: statistically significant difference

Table 43 Mean values and standard deviations about "Smart meters make my energy easy to understand and control" - Total sample and per country

Smart meters make my energy easy to understand and control							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.93	0.89	3.67	1.06	-0.26	-7%	0.318
Cyprus	4.12	0.65	3.99	0.66	-0.14	-3%	0.061
Greece	3.83	0.73	3.95	0.72	0.13	3%	0.252
Ireland	4.04	0.79	3.96	0.81	-0.08	-2%	0.443

Smart meters make my energy easy to understand and control							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Lithuania	3.98	0.70	4.01	0.70	0.03	1%	0.738
Romania	4.18	0.76	4.21	0.70	0.02	1%	0.811
UK	3.82	0.78	3.88	0.77	0.06	2%	0.186
Total	3.92	0.77	3.95	0.75	0.03	1%	0.268

*: statistically significant difference

Table 44 Mean values and standard deviations about "Smart meters make life easier by taking away the hassle of meter reads and estimated bills" - Total sample and per country

Smart meters make life easier by taking away the hassle of meter reads and estimated bills							
	Baseline		Follow-up		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Bulgaria	3.85	0.80	3.81	0.98	-0.04	-1%	0.863
Cyprus	4.02	0.77	3.84	0.77	-0.18	**-4%***	0.040
Greece	3.76	0.79	3.85	0.63	0.09	2%	0.378
Ireland	3.95	0.85	3.99	0.77	0.04	1 %	0.709
Lithuania	4.04	0.84	4.03	0.75	-0.01	0%	0.883
Romania	4.02	0.82	4.07	0.74	0.06	2%	0.563
UK	3.86	0.78	3.86	0.86	-0.01	0 %	0.914
Total	3.90	0.80	3.90	0.81	0.00	0%	0.981

*: statistically significant difference

3.14 Foreknowledge of Energy Performance Certificates (EPCs)

Respondents were asked if they had heard of energy performance certificates (EPCs) before. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey proportions are statistically significant. The results for each country and for the total sample are shown on Figure 13 and tabulated in Table 45.

In the baseline survey, less than half of the respondents (47% of baseline respondents) had heard of an EPC before. At the end of the academic year this share was +7% higher (54% of follow-up respondents). This increase was statistically significant (*z=-5.403, p<0.001*). In all countries, respondents had some knowledge about EPCs in both surveys.

In **Bulgaria**, 31% of the follow-up respondents stated that they had heard of an EPC before while this share was 39% in the baseline survey.

In **Cyprus**, the share of respondents that had heard of an EPC increased from 40% in the baseline to 43% in the follow-up survey.

In **Greece**, a +12% increase was observed in the follow-up survey which was in fact statistically significant (*z=-3.333, p<0.001*). At the end of the academic year, 44% of the respondents stated that they had heard of an EPC before compared to 32% at the beginning of the academic year.

In **Ireland,** the proportion of those who had heard of an EPC before remained unchanged among the two surveys (66%).

In **Lithuania**, the share of those that had heard of an EPC before increased from 51% to 55% in the follow-up survey.

In **Romania**, the biggest difference (+18%) in knowledge about EPCs was observed over the academic year (*z=-4.306, p<0.001*). At the end of the academic year, 53% of the respondents stated that they had heard of an EPC before compared to 34% at the beginning.

The highest share of follow-up respondents who had heard of EPCs before were recorded in the **UK**. At the end of the academic year 71% of respondents had heard of an EPC. This share was +12% higher than the baseline share and the increase was statistically significant (*z=-4.306, p<0.001*).

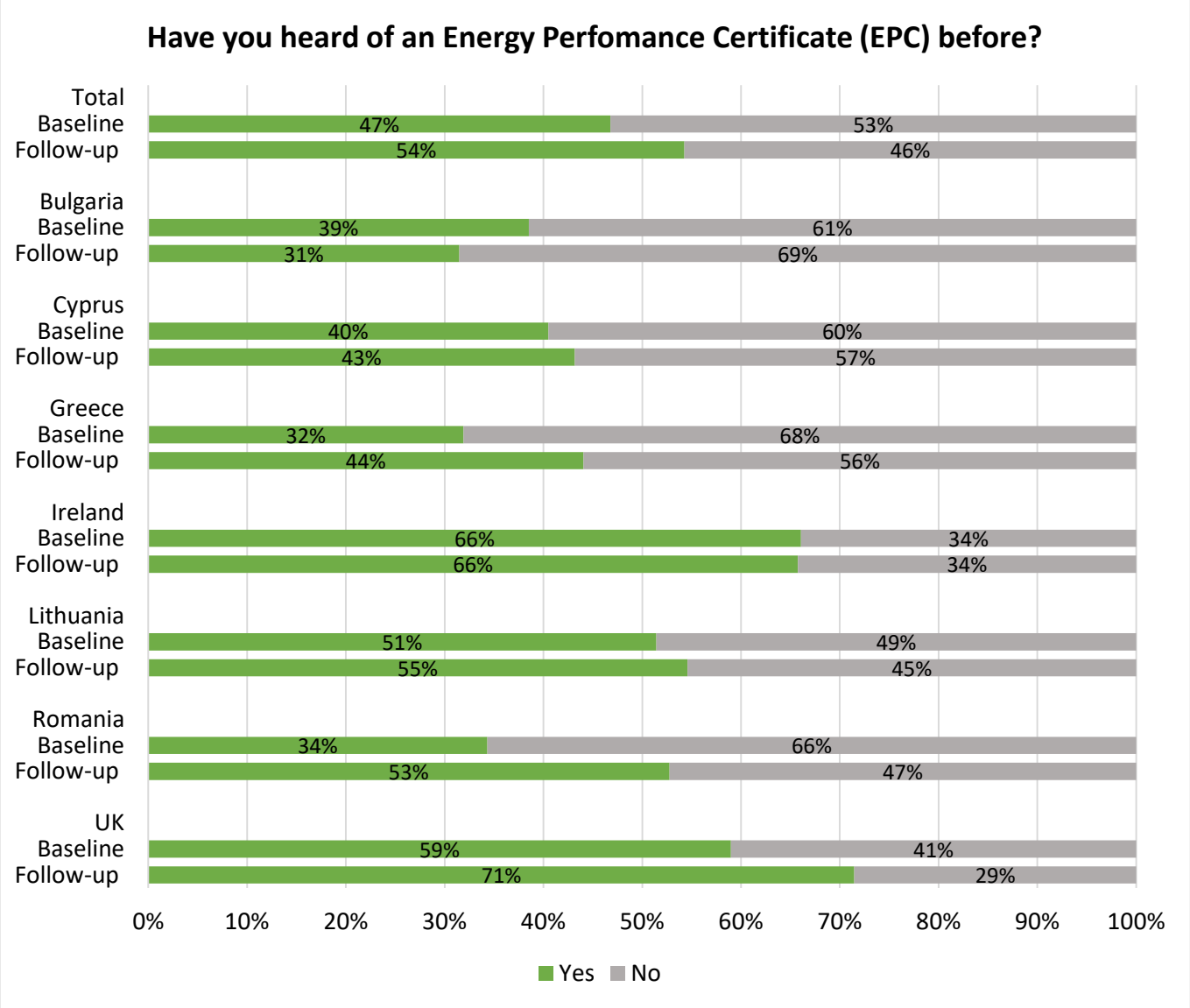

Figure 13 Awareness of Energy Performance Certificate - Total sample and per country

Table 45 Awareness of Energy Performance Certificate - Total sample and per country

Have you heard of an Energy Performance Certificate (EPC) before?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Yes	**Follow-up**	31.5%	43.2%	44.1%	65.8%	54.6%	52.8%	71.5%	54.3%
	Baseline	38.5%	40.5%	31.9%	66.1%	51.4%	34.3%	59.0%	46.8%

Have you heard of an Energy Performance Certificate (EPC) before?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
	difference from baseline	-7.1%	2.7%	**12.1%***	-0.3%	3.1%	**18.4%***	**12.5%***	**7.5%***
No	**Follow-up**	68.5%	56.8%	55.9%	34.2%	45.4%	47.2%	28.5%	45.7%
	Baseline	61.5%	59.5%	68.1%	33.9%	48.6%	65.7%	41.0%	53.2%
	difference from baseline	7.0%	-2.7%	-12.2%	0.3%	-3.2%	-18.5%	-12.5%	-7.5%

*: statistically significant difference

3.15 EPC viewing before moving into new accommodation

Respondents were asked if they saw the energy performance certificate (EPC) of their current property before they moved in. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey are statistically significant. The results for each country and for the total sample are illustrated in Figure 14 and tabulated in Table 46.

Overall, 24% of the respondents in both surveys stated that they saw the EPC score of their current property before they moved in, while 44% in the baseline and 41% in the follow-up survey stated that they didn't see the respective certificate. Twenty three percent (23%) of the respondents in the baseline survey couldn't remember if they saw the EPC of their current accommodation before moving in, with this share reaching 24% in the follow-up survey. Furthermore, the share of the respondents who answered that the EPC of the accommodation was not available increased (9% Baseline, 11% Follow-up), reporting a significant statistical increase of +2% ($z=-1.961$, $p=0.025$). Finally, those who stated that they asked the landlord for a copy of the EPC but their request was denied, didn't exceed 1% in any survey in any of the countries.

In **Bulgaria,** 64% of the respondents in the follow-up survey and 59% in the baseline survey did not see the EPC of their current property before moving in while only 6% and 9%, respectively, stated that they did. Eleven percent (11%) of the follow up respondents couldn't remember if they had seen the EPC of their current property before moving in (12% in the baseline) whereas 20% in both surveys reported that the EPC of the accommodation was not available.

In **Cyprus**, in both surveys, almost half of the respondents (49%) did not see the EPC of their current property before moving in. On the contrary, 14% of the follow-up participants saw the EPC of their current property before moving in, while this share was 13% in the baseline survey. Similarly to the baseline survey, 21% of those surveyed at the end of the year couldn't remember if they saw the EPC of their property before moving in. Finally, 15% of the respondents in the baseline and 16% in the follow-up survey answered that the EPC was not available for their current property.

Thirteen percent (13%) of the follow-up respondents in **Greece** (2% more than in the baseline) had seen the EPC of their current property before they moved in while 54% had not in both surveys. Eighteen percent (18%) in the follow-up and 28% in the baseline could not remember seeing it or not. This reduction of -10% was statistically significant ($z=-2.909$, $p=0.002$). In addition, in the end of the year survey a statistically significant increase of +7% ($z=-3.440$, $p<0.001$) was observed with regard to those who stated that the EPC of the accommodation was not available (14% Follow-up, 7% Baseline).

In **Ireland**, in the follow-up survey, 21% of the respondents (18% in the baseline) saw the EPC of their current property before they moved in. On the other hand, 38% of the follow-up respondents (37% in the baseline) didn't see the EPC of their current property before they moved in. Furthermore, 26% of those surveyed in the follow-up survey couldn't remember if they saw the EPC of their current accommodation (21% in the baseline). Finally, in both surveys, 9% of those questioned stated that the EPC of the accommodation was not available.

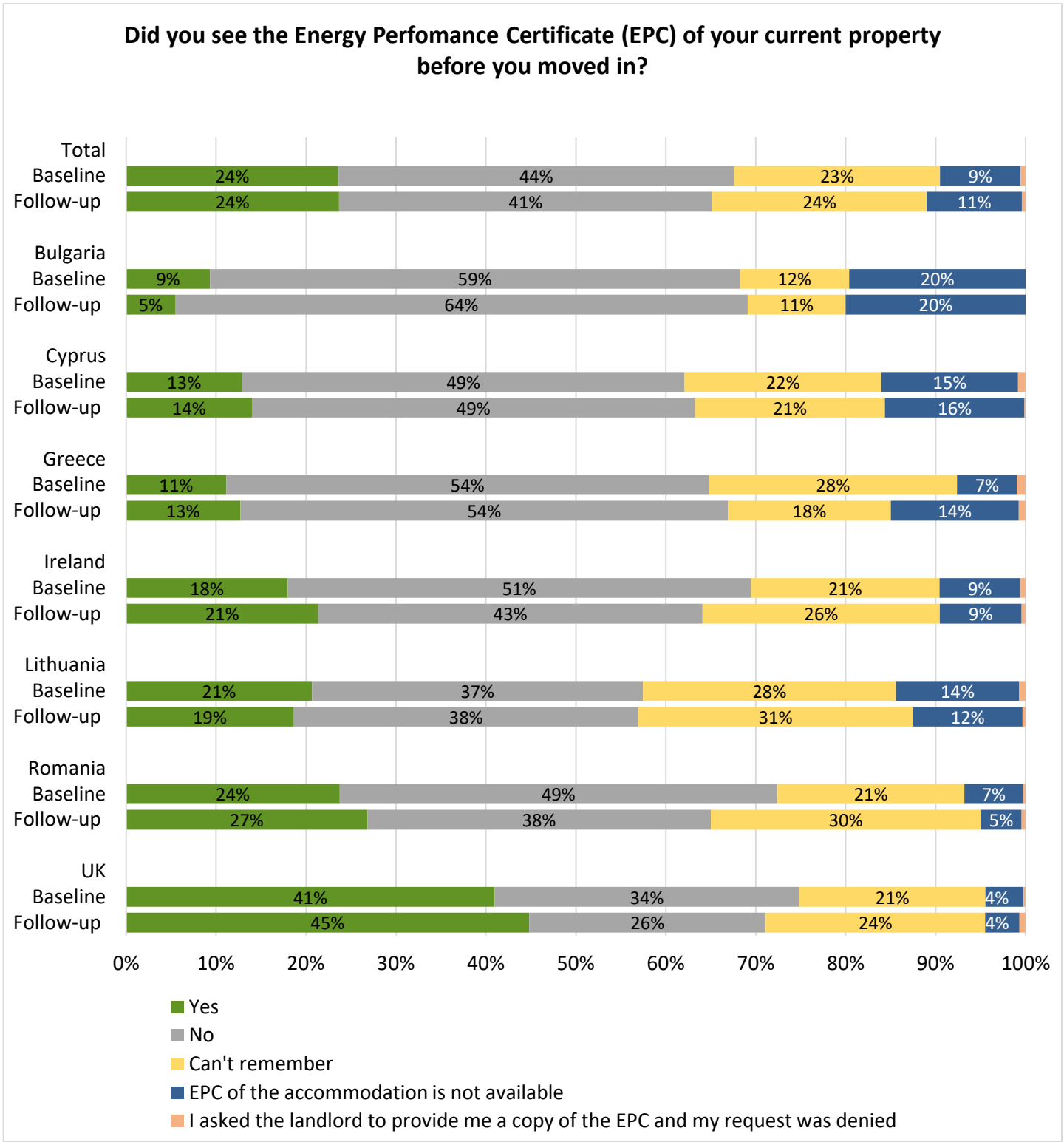

Figure 14 EPC viewing of current property before moved in – Total sample and per country

Nineteen percent (19%) of the follow-up respondents from **Lithuania** had seen the EPC of their current accommodation before moving in (21% in the baseline). Thirty-eight percent (38%) of the follow-up respondents answered negatively in this question (+1% increase from the baseline survey). Moreover, in the follow-up survey, 31% of respondents, as opposed to 28% in the baseline, couldn't remember if they had seen

it or not, whereas the share of those who stated that the EPC of the property was not available dropped to 12% in the follow-up survey (14% in the baseline survey).

Twenty-seven percent (27%) of the follow-up respondents in **Romania**, compared to 24% in the baseline, saw the EPC of their current accommodation before they moved in. Furthermore, a statistically significant decrease of -11% (*z=-2.433, p=0.007*) was observed in the share of those who did not see the EPC of their property before moving in and 38% of follow-up respondents, as opposed to 49% in the baseline, did not see it before they moved in. In addition, 30% of the follow-up respondents (21% in the baseline) couldn't remember seeing the EPC before they moved in their current property with this observed difference of +9% being statistically significant (*z=-2.478, p=0.007*). Finally, 7% of the respondents in the baseline and 5% in the follow-up survey answered that the EPC was not available for their current property.

In the **UK**, in the follow-up survey, 45% of the respondents (41% in the baseline) saw the EPC of their current property before they moved in. On the other hand, 26% of the follow-up respondents (34% in the baseline) didn't see the EPC of their current property before moving in with this observed decrease of -8% being statistically significant (*z=3.057, p=0.001*). Moreover, 24% of those surveyed in the follow-up (21% in the baseline) couldn't remember if they saw the EPC of their current accommodation before they moved in. Finally, in both surveys, 4% of those questioned stated that the EPC of the accommodation was not available.

Table 46 EPC viewing before moving into current property - Total sample and per country

Did you see the Energy Performance Certificate (EPC) of your current property before you moved in?		**Bulgaria**	**Cyprus**	**Greece**	**Ireland**	**Lithuania**	**Romania**	**UK**	**Total**
Yes	**Follow-up**	5.5%	14.0%	12.7%	21.4%	18.6%	26.8%	44.8%	23.7%
	Baseline	9.3%	12.9%	11.2%	18.0%	20.7%	23.7%	41.0%	23.6%
	difference from baseline	-3.9%	1.1%	1.5%	3.4%	-2.0%	3.1%	3.8%	0.1%
No	**Follow-up**	63.6%	49.2%	54.2%	42.7%	38.3%	38.2%	26.3%	41.5%
	Baseline	58.9%	49.2%	53.6%	51.5%	36.8%	48.7%	33.9%	44.0%
	difference from baseline	4.8%	0.1%	0.6%	-8.8%	1.5%	**-10.5%***	**-7.6%***	-2.5%
Can't remember	**Follow-up**	10.9%	21.1%	18.1%	26.4%	30.5%	30.0%	24.4%	23.8%
	Baseline	12.1%	21.9%	27.6%	21.0%	28.1%	20.8%	20.7%	22.9%
	difference from baseline	-1.2%	-0.8%	**-9.5%***	5.4%	2.4%	**9.2%***	3.7%	1.0%
EPC of the accommodation is not available	**Follow-up**	20.0%	15.5%	14.2%	9.1%	12.2%	4.5%	3.8%	10.6%
	Baseline	19.6%	15.2%	6.7%	9.0%	13.7%	6.5%	4.2%	9.0%
	difference from baseline	0.4%	0.3%	**7.6%***	0.1%	-1.5%	-2.0%	-0.4%	**1.6%***
I asked the landlord to provide me a copy of the EPC and my request was denied	**Follow-up**	0.0%	0.1%	0.8%	0.5%	0.3%	0.5%	0.7%	0.4%
	Baseline	0.0%	0.8%	1.0%	0.6%	0.7%	0.3%	0.2%	0.6%
	difference from baseline	0.0%	-0.7%	-0.2%	-0.1%	-0.4%	0.2%	0.5%	-0.1%

*: statistically significant difference

3.16 Energy Performance Certificate as a criterion when selecting current accommodation

Respondents were asked if they were influenced by the Energy Performance Certificate (EPC) score of their current accommodation before they moved in. A two-proportion z-test was used to determine whether the differences between the baseline and follow-up survey are statistically significant. The results for each country and for the total sample are illustrated in Figure 15 and tabulated in Table 47.

In the follow-up survey, more than one third of the respondents (36%) stated that they were influenced by the EPC score of the property for selecting their current accommodation. On the other hand, 48% of the respondents answered that the EPC score was not a criterion for selecting their current accommodation while 17% of those surveyed were uncertain if the EPC score influenced their current accommodation choice. Similar answers were given in the baseline survey without any statistically significant difference recorded.

In **Bulgaria**, where the highest percentage of positive answers was reported for both surveys, at the beginning of the academic year 90% of the respondents stated that they were influenced by the EPC score of the property for their current accommodation selection while at the end of the academic year this share decreased to 67%. This decrease, although not being statistically significant might be attributed to the fact that student respondents of the follow-up survey might consider other factors (i.e. cost of rent, location of the accommodation etc.) of higher importance when they chose their current accommodation.

In **Cyprus**, according to the follow-up survey, 50% of the respondents stated that they were influenced by the property's EPC score for selecting their current accommodation while in the baseline survey this share was 56%. On the other hand, a decrease of -7% was reported for the share of follow-up respondents who weren't sure if their current accommodation selection was affected by the EPC score (31% in the baseline). Interestingly, in the follow-up survey, the percentage of the respondents who didn't take into consideration the EPC score for selecting their current accommodation, doubled to 26% against 13% in the baseline survey. This difference was statistically significant (*z=-1.990, p=0.023*). As in Bulgaria, this might be attributed to the fact that student respondents might considered other factors (i.e. cost of rent, location of the accommodation etc.) as more important when they selected their current accommodation.

In **Greece**, 36% of those surveyed in the follow-up survey were influenced by the EPC score of the property before moving in (46% in the baseline) whereas 42% of the respondents didn't consider the EPC score as a criterion for the selection of their current accommodation (37% in the baseline). In addition, 21% of those questioned at the end of the year did not know if the EPC score of the property influenced their decision to select their current accommodation (18% in the baseline).

Thirty eight percent (38%) of the follow-up respondents in **Ireland** (+1% more than the baseline) stated that they were influenced by the EPC for selecting their current accommodation while 43% were not (-4% less than the baseline) and 19% did not know (+2% more than the baseline).

In **Lithuania,** 56% of the respondents in the follow-up survey took into consideration the EPC score of the property when selecting their current accommodation, 29% weren't influenced by the EPC score and 15% of the participants did not know. In the baseline survey, half of the respondents (50%) were influenced by the EPC score of the property, 40% of them stated that they were not influenced by the EPC score and 10% didn't know if the EPC score of the property influenced them when selecting their current property.

A fair share of the respondents in **Romania** reported to have been influenced by the property's EPC score when selecting their current accommodation in both surveys (37% in the follow-up survey and 39% in the baseline). Twenty-nine percent (29%) of the respondents in the end of the academic year survey did not take into account the EPC score when choosing their current accommodation, while this share was 39% in the baseline survey. Twenty-three per cent (23%) of those questioned in the baseline and 34% in the follow-up survey were uncertain about whether they were influenced by the EPC score when selecting their current accommodation.

The respondents who were the least influenced by the EPC score of the property when selecting their current accommodation were in the **UK** with about two thirds of the respondents (60% in the baseline and 67% in the follow-up survey) stating that EPC score of the property was not among their criteria when selecting their

current accommodation. On the other hand, 24% of the respondents took into consideration the EPC score in both surveys while the share of those who stated "don't know" reduced to 9% in the follow-up survey from 16% in the baseline survey. The latter reduction of -7% was statistically significant *(z=2.496, p=0.994)*.

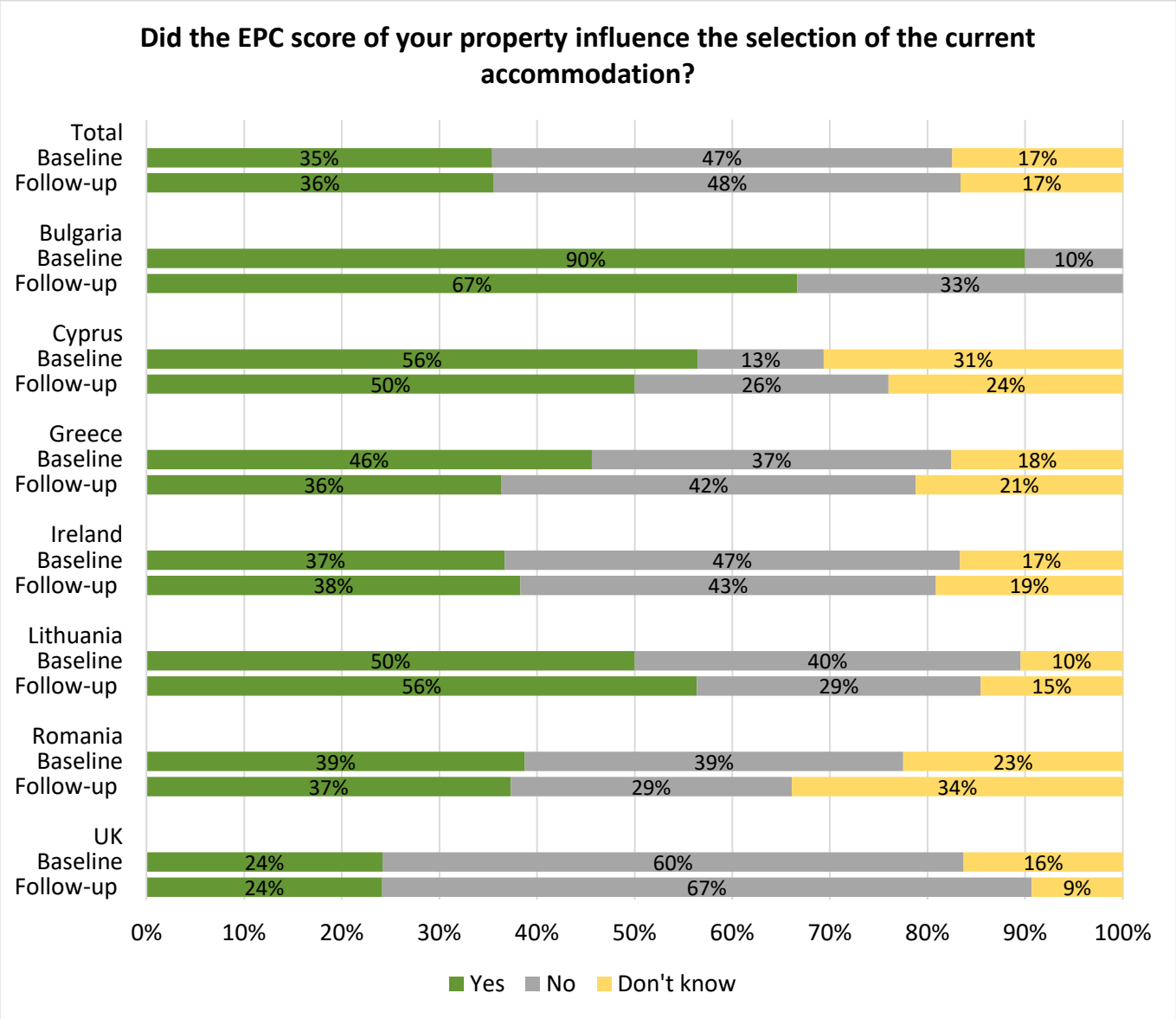

Figure 15 Energy Performance Certificate as a criterion when selecting current accommodation – Total sample and per country

Table 47 Energy Performance Certificate as a criterion when selecting current accommodation – Total sample and per country

Did the EPC score of your property influence the selection of the current accommodation?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
Yes	**Follow-up**	66.7%	50.0%	36.4%	38.3%	56.4%	37.3%	24.1%	35.6%
	Baseline	90.0%	56.5%	45.6%	36.7%	50.0%	38.8%	24.2%	35.4%
	difference from	-23.3%	-6.5%	-9.3%	1.6%	6.4%	-1.5%	-0.03%	0.2%

Did the EPC score of your property influence the selection of the current accommodation?		Bulgaria	Cyprus	Greece	Ireland	Lithuania	Romania	UK	Total
	baseline								
No	**Follow-up**	33.3%	26.0%	42.4%	42.6%	29.1%	28.8%	66.5%	47.8%
	Baseline	10.0%	12.9%	36.8%	46.7%	39.5%	38.8%	59.6%	47.1%
	difference from baseline	23.3%	**13.1%***	5.6%	-4.1%	-10.4%	-9.9%	7.0%	0.7%
Don't know	**Follow-up**	0.0%	24.0%	21.2%	19.1%	14.5%	33.9%	9.3%	16.6%
	Baseline	0.0%	30.6%	17.5%	16.7%	10.5%	22.5%	16.3%	17.5%
	difference from baseline	0.0%	-6.6%	3.7%	2.5%	4.1%	11.4%	**-7.0%***	-0.9%

*: statistically significant difference

3.17 Energy Performance Certificate as a criterion when selecting next accommodation

Respondents were asked if they would take the EPC score into account when selecting their next accommodation. This question was available only in the follow-up survey. The results for each country and for the total sample are illustrated in Figure 16.

According to the results, the most keen to take the Energy Performance Certificate into consideration were the respondents from **Cyprus** (88%), where only 12% of those surveyed wouldn't consider the EPC score as a criterion for selecting their next accommodation. Closely following were **Romania** and **Lithuania**, with 85% and 83% of the respondents respectively, while over 70% of those surveyed in **Greece** (77%), **Bulgaria** (75%) and **Ireland** (72%) would take into account the EPC score for choosing their next accommodation. Finally, in the **UK**, 58% of those questioned would take the EPC score into account when selecting their next accommodation, whereas 42% would not. The lower percentage of positive answers reported in the UK compared to those in the other countries, might be a consequence of the unbalanced relation between increased demand and limited supply of private student accommodation in the country. In addition, other factors than the EPC score of the property such as the cost of rent or the location of the accommodation might be important for respondents when selecting their next accommodation.

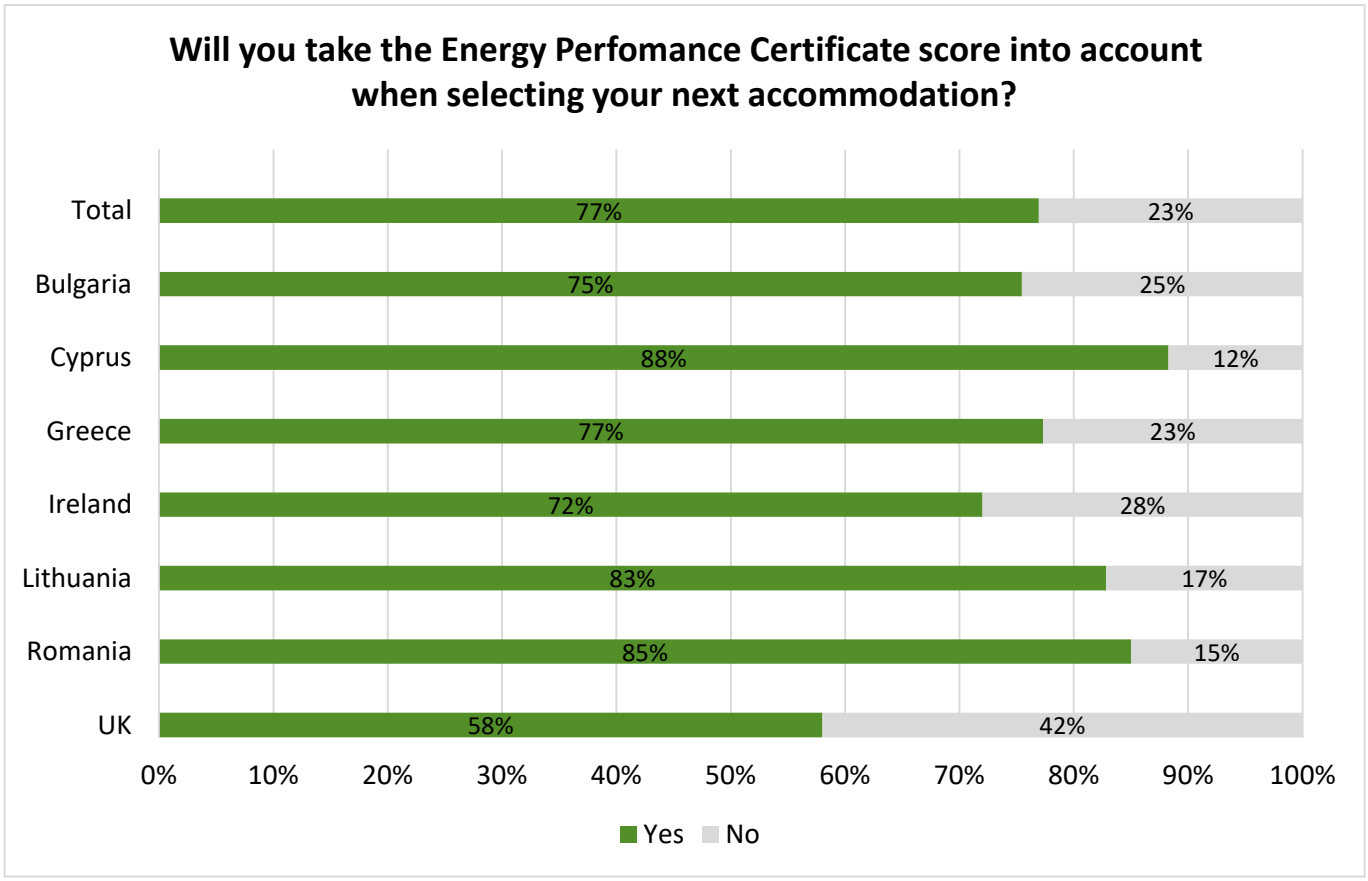

Figure 16 Energy Performance Certificate as a criterion when selecting next accommodation - Total sample and per country

4 Influence of the Student Switch Off campaign

Student Switch Off (SSO) and Student Switch Off+ (SSO+) are energy awareness campaigns addressing students that aim to help establish new energy behaviours and achieve valuable energy savings. The two campaigns are brought together through the H2020 funded SAVES 2 project (https://saves.nus.org.uk/).

While the Student Switch Off+ (SSO+) campaign addresses students living in private accommodation, the Student Switch Off (SSO) campaign is an inter-dormitory energy-saving campaign that focuses on a set of activities, encouraging students to save energy within their university dormitories.

In this chapter, students who were aware of the SSO campaign through living in dormitories in past years, but in this academic year (2019-20) lived in private rented accommodation (in a privately rented house/flat or rent a room in their landlord's house/flat) are separated from the total sample and compared against students who were not aware of the SSO campaign. The differences in the energy awareness levels of the two groups are assessed in order to allow the study of any occurrences of rebound or spillover effects of the SSO campaign. The sample of this analysis involves only the end of academic year survey. The actual number of responses to individual questions for each group are tabulated in Annex II.

4.1 Perceived level of information about energy and environmental issues – SSO influence

Respondents were asked to rate how well informed they felt about a number of issues that involved the energy and environmental performance of their home. Results are on a 1 to 5 scale (1= Very badly informed, 2 = Fairly badly informed, 3 = Neither well nor badly informed, 4 = Fairly well informed, 5 = Very well informed). The higher the mean value (M) the better informed the respondents feel. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the two studied groups are statistically significant. P-values smaller than 0.05 indicate statistically significant differences in the mean value. The results are summarized in Table 48 and illustrated in Figure 17.

Table 48 Pereceived level of information about energy and environmental issues - SSO influence

How well informed do you feel about the following?							
	Aware of SSO		Unaware of SSO		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
The energy you personally consume in your accommodation	3.00	1.23	2.92	1.22	0.09	3%	0.5156
What you can personally do to save energy in your accommodation	3.79	0.98	3.47	1.00	0.32	**8%***	0.0028
The impact your energy saving measures have on your energy bill	3.23	1.23	3.20	1.13	0.03	1%	0.8128
The impact that energy saving solutions can have to help reduce global warming	3.94	1.05	3.70	1.00	0.24	**6%***	0.0313
The rights you have in choosing and changing your energy provider	2.78	1.27	2.28	1.21	0.50	**18%***	0.0002
The choices of tariffs that you have with your energy provider	2.59	1.27	2.21	1.14	0.38	**15%***	0.0049
The impact of cold homes on your health and well-being	3.06	1.24	2.80	1.18	0.27	**9%***	0.0426

*: statistically significant difference

Overall, respondents who were aware of the SSO campaign felt better informed about all the issues in question compared to those who were unaware of the SSO campaign. The smallest observed difference in mean values

between the two groups was +1% with regard to the level of information about "The impact your energy saving measures have on your energy bill" while the biggest observed difference recorded was +18% with regard to "The rights you have in choosing and changing your energy provider".

Independent-samples t-test showed that the increased levels of information recorded for those who were aware of the SSO campaign were statistically significant for the following topics:

- "What you can personally do to save energy in your accommodation", +8% increase in mean value (*t(558)=2.997, p=0.003*)
- "The impact that energy saving solutions can have to help reduce global warming", +6% increase (*t(558)=2.159, p=0.03*)
- "The rights you have in choosing and changing your energy provider", +18% increase (*t(558)=3.699, p<0.001*)
- "The choices of tariffs that you have with your energy provider", +15% (*t(556)=2.826, p=0.005*)
- "The impact of cold homes on your health and well-being", +9 % increase (*t(558)=2.033, p=0.043*)

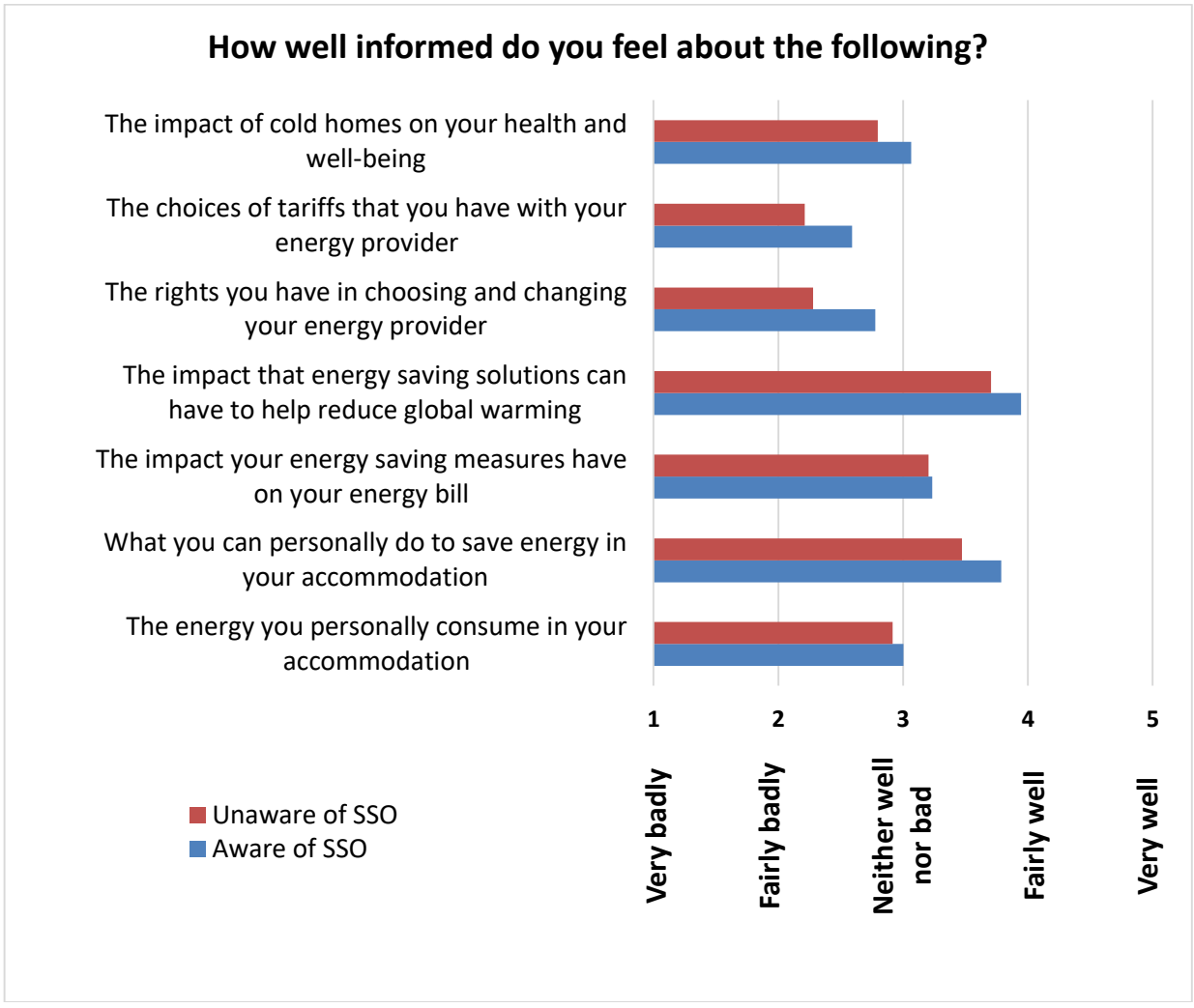

Figure 17 Perceived level of information about energy and environmental issues - SSO influence

4.2 Feelings about saving energy – SSO influence

Respondents were asked to describe their feelings about saving energy from a predefined list of words. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 18.

Fifty eight percent (58%) of those who were aware of the SSO campaign selected words with a positive meaning (Content to Optimistic) while 32% selected words with a negative meaning (Guilty to Frustrated) and 11% stated that they felt indifferent about saving energy. On the other hand, 57% of those who were unaware of the SSO campaign had positive feelings, 31% had negative feelings and 11% felt indifferent. Optimism and contentment were the most popular feelings in both groups.

In particular, a higher share of those who were aware of the SSO campaign felt optimistic (31%, +2% more than those who were not aware of the SSO campaign), proud (8%, +2% difference), guilty (13%, +2% difference) and frustrated (8%, +4% difference) about saving energy. On the other hand, a smaller share of those who were aware of the SSO campaign, compared to those who were not aware, felt content (19%, -3% difference), anxious (11%, -5% difference) and indifferent (11%, -1% difference). None of the aforementioned differences were statistically significant.

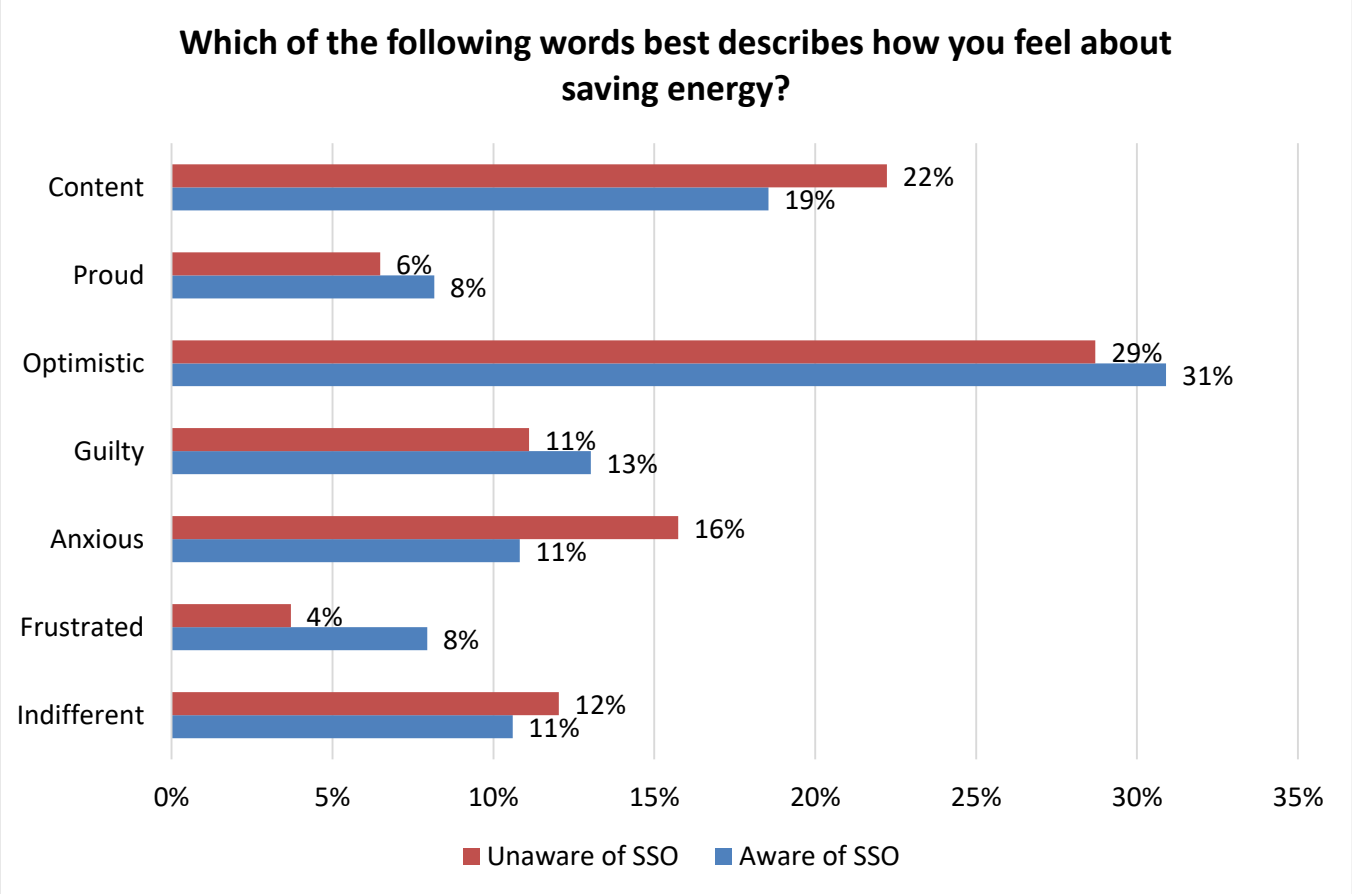

Figure 18 Feelings about saving energy - SSO influence

4.3 Habits and practices – SSO influence

Respondents were asked to rate the extent in which they undertook a number of energy saving actions on a 1 to 5 scale (1= Never, 5 = Always). The higher the mean value (M) the higher the frequency in which the action is performed. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values

recorded between the two studied groups are statistically significant. The results are illustrated in Figure 19 and tabulated in Table 49.

Table 49 Mean values and standard deviations on the extent respondents undertake targeted energy saving actions-SSO influence

To what extent do you undertake the following actions?							
	Aware of SSO		Unaware of SSO		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Wash clothes at 30 degrees centigrade or less	3.68	1.11	3.31	1.27	0.37	**10%***	0.008
Leave the heating on when you go out for a few hours	2.11	1.08	1.88	1.19	0.22	11%	0.066
Leave your PC or TV on standby for long periods of time at home	2.64	1.30	2.68	1.35	-0.04	-2%	0.780
Switch off lights and appliances when not in use	4.45	0.79	4.46	0.79	-0.01	0%	0.920
Leave a mobile phone charger switched on at the socket when not in use	3.21	1.47	3.47	1.44	-0.25	-8%	0.107
Not overfill the kettle with water	3.60	1.21	3.43	1.19	0.18	5%	0.185
Put lids on pans when cooking on the hob	3.54	1.19	3.43	1.23	0.11	3%	0.400
Only wash clothes when you have a full load	4.68	0.62	4.45	0.88	0.23	**5%***	0.013
Defrost the fridge frequently	1.85	0.94	2.01	0.98	-0.16	-9%	0.128
Allow cooked food to cool down before putting it in the fridge	4.28	0.98	4.08	1.22	0.19	5%	0.128

*: statistically significant difference

The findings of the analysis revealed that respondents who were aware of the SSO campaign undertook all the listed energy saving actions, except for defrosting the fridge frequently and switching off lights and appliances when not in use, more often than those who were not aware of the SSO campaign. The most frequent action respondents who were aware of the SSO undertook was to wash their clothes only when they had a full load. In fact, this action recorded a statistically significant higher mean value of +5% in the frequency it was undertaken by those who were aware of the SSO campaign compared to those who were not. On the contrary, the least frequent action undertaken by those who were aware of the SSO campaign was to defrost the fridge regularly which in fact was undertaken -9% less than it was undertaken from those who were unaware of the SSO campaign; however, this difference was not statistically significant. It should be noted that students living in dormitories usually do not have to defrost the fridge or freezer and this action is not a focus of the SSO campaign. Another observation was that both groups of respondents switched off lights and appliances when not in use as often.

Statistically significant differences between the two groups were observed in the following actions:

- "Wash clothes at 30 degrees centigrade or less", +10% higher mean value of those who were aware of the SSO campaign suggesting a more frequent undertaking of this action, (*t(139)=2.697, p=0.008*)
- "Only wash clothes when they have a full load", +5% higher mean value of those who were aware of the SSO campaign suggesting a more frequent undertaking of this action, (*t(129)=2.529, p=0.013*)

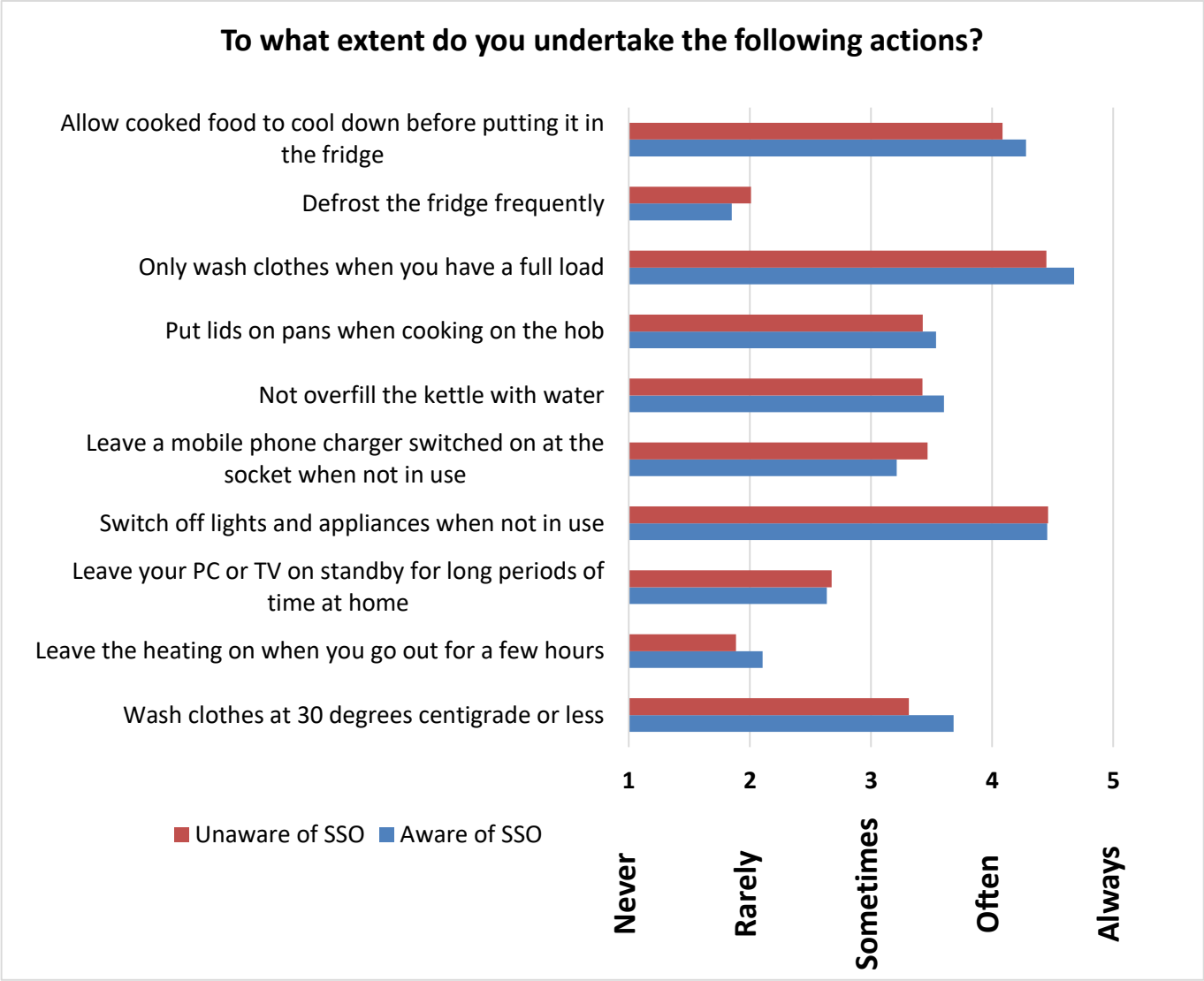

Figure 19 Mean values of the extent respondents undertake targeted energy saving actions – SSO influence

4.4 Actions taken to reduce the energy costs – SSO influence

Respondents were asked which of the mentioned targeted actions, if any, were taken whilst in their current accommodation in order to reduce the cost of their energy bills. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 20 .

Higher shares of those who were aware of the SSO campaign took actions to reduce their energy costs compared to those who were not, except for approaching their landlord to buy more energy efficient appliances or bought some themselves. The most popular responses in both groups of respondents were "Took actions to reduce my energy usage" (69% Aware of SSO, 45% Unaware of SSO) and "Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep the heating down in your home" (66% Aware of SSO, 50% Unaware of SSO). The third most popular response for those who were aware of the SSO campaign was "switched energy supplier or tariff in the last 6 months" (15%) while for those who were unaware of the SSO campaign it was to approach their landlord to buy more energy efficient appliances or buy some themselves (12%). Interestingly, 24% of those unaware of the SSO campaign did not take any of the mentioned actions to reduce their energy costs while this share was -16% less for those who were aware of the SSO campaign (8%).

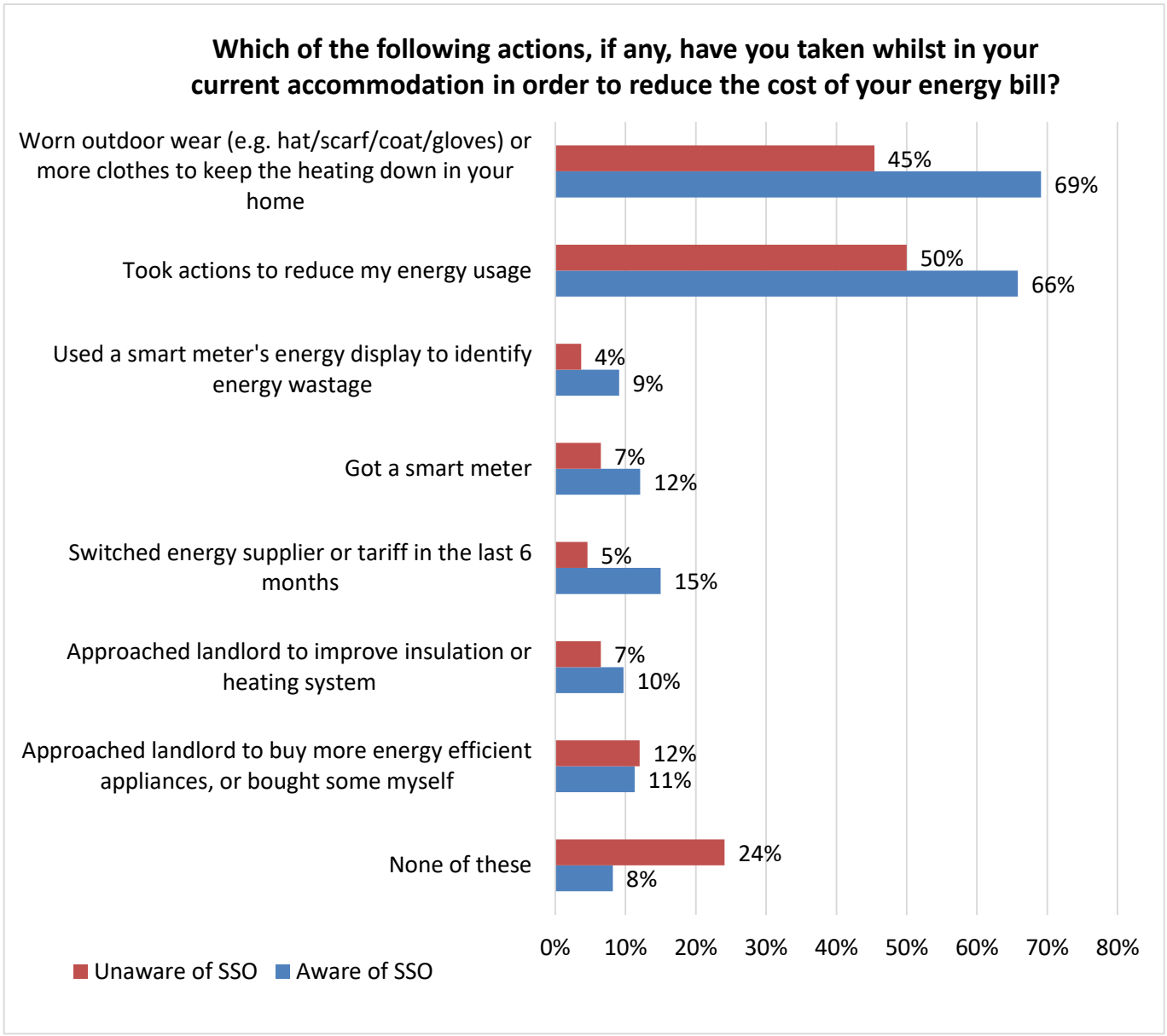

Figure 20 Actions taken by respondents to reduce their energy costs whilst in their current accommodation - SSO influence

Statistically significant differences between the two groups were observed for the following actions:

- Switched supplier or tariff in the last 6 months, (15% Aware of SSO, 5% Unaware of SSO) +10% more respondents who were aware of the SSO campaign took this action, (*z=3.049, p=0.002*)
- Took actions to reduce my energy usage, (66% Aware of SSO, 50% Unaware of SSO) +16% more respondents who were aware of the SSO campaign took this action, (*z=-2.014, p=0.001*)
- Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in your home, (69% Aware of SSO, 45% Unaware of SSO) +24% more respondents who were aware of the SSO campaign took this action, (*z=4.631, p<0.001*)
- None of these, (8% Aware of SSO, 24% Unaware of SSO) -16% less respondents who were aware of the SSO campaign stated that they did not take any of the mentioned actions to reduce their energy costs, (*z=-4.705, p<0.001*)

4.5 Behavioural antecedents – SSO influence

Respondents were asked about the level of agreement, if at all, with given statements about energy related issues. Results are on a 1 to 5 scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree). Mean values (M) over 3.5 indicate agreement with the statement. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the two studied groups are statistically significant. The results are illustrated in Figure 21 and tabulated in Table 50.

Table 50 Behavioral antecedents - SSO influence

Please consider each of the statements below and indicate to what extent do you agree or disagree with it.							
	Aware of SSO		**Unaware of SSO**		**Change in mean value**	**% change in mean value**	**p value**
	mean	**SD**	**mean**	**SD**			
I feel in complete control over how much energy I use	3.07	0.96	3.00	0.99	0.07	2%	0.507
Energy conservation contributes to a reduction of climate change impacts	4.28	0.77	4.26	0.82	0.02	0%	0.821
Saving energy means I have to live less comfortably	2.62	0.96	2.39	0.96	0.23	**9%***	0.026
I feel jointly responsible for the exhaustion of energy sources	3.59	0.95	3.66	1.11	-0.07	-2%	0.541
Saving energy is too much of a hassle	2.05	0.82	2.27	0.89	-0.22	**-11%***	0.015
I can reduce my energy use quite easily	3.73	0.86	3.62	0.86	0.11	3%	0.248
Everyone including myself is responsible for climate change	4.33	0.91	4.32	0.95	0.00	0%	0.991
Most people who are important to me try to pay attention to their energy use	3.43	0.97	3.08	0.94	0.34	**10%***	0.001
I feel morally obliged to save energy, regardless of what others do	4.20	0.78	3.94	0.95	0.26	**6%***	0.008

Those who were aware of the SSO campaign showed a higher level of agreement with most of the given statements compared to those who were unaware of the campaign. On the other hand, a stronger disagreement with the statements "Saving energy is too much of a hassle" and "I feel jointly responsible for the exhaustion of energy sources" were reported from those who were aware of the SSO campaign. Interestingly, those who were aware of the SSO campaign agreed more than the other surveyed group on that saving energy means they have to live less comfortably. Finally, the two surveyed groups of respondents showed the same levels of agreement for the statements "Energy conservation contributes to a reduction of climate change impacts" and "Everyone including myself is responsible for climate change".

Statistically significant differences between the two groups were found in the following statements:

- "Saving energy means I have to live less comfortably", +9% higher mean value of those who were aware of the SSO campaign suggesting a stronger agreement with the statement (*t(5354)=2.306, p=0.02*)
- "Saving energy is too much of a hassle", -11% lower mean value of those who were aware of the SSO campaign suggesting a stronger disagreement with the statement (*t(5355)=-2.541, p=0.01*).
- "Most people who are important to me try to pay attention to their energy use", +10% higher mean value of those who were aware of the SSO campaign suggesting a stronger agreement with the statement (*t(5366)=-2.211, p=0.027*).
- "I feel morally obliged to save energy, regardless of what others do", +6% higher mean value of those who were aware of the SSO campaign suggesting a stronger agreement with the statement (*t(5365)=-2.112, p=0.03)*

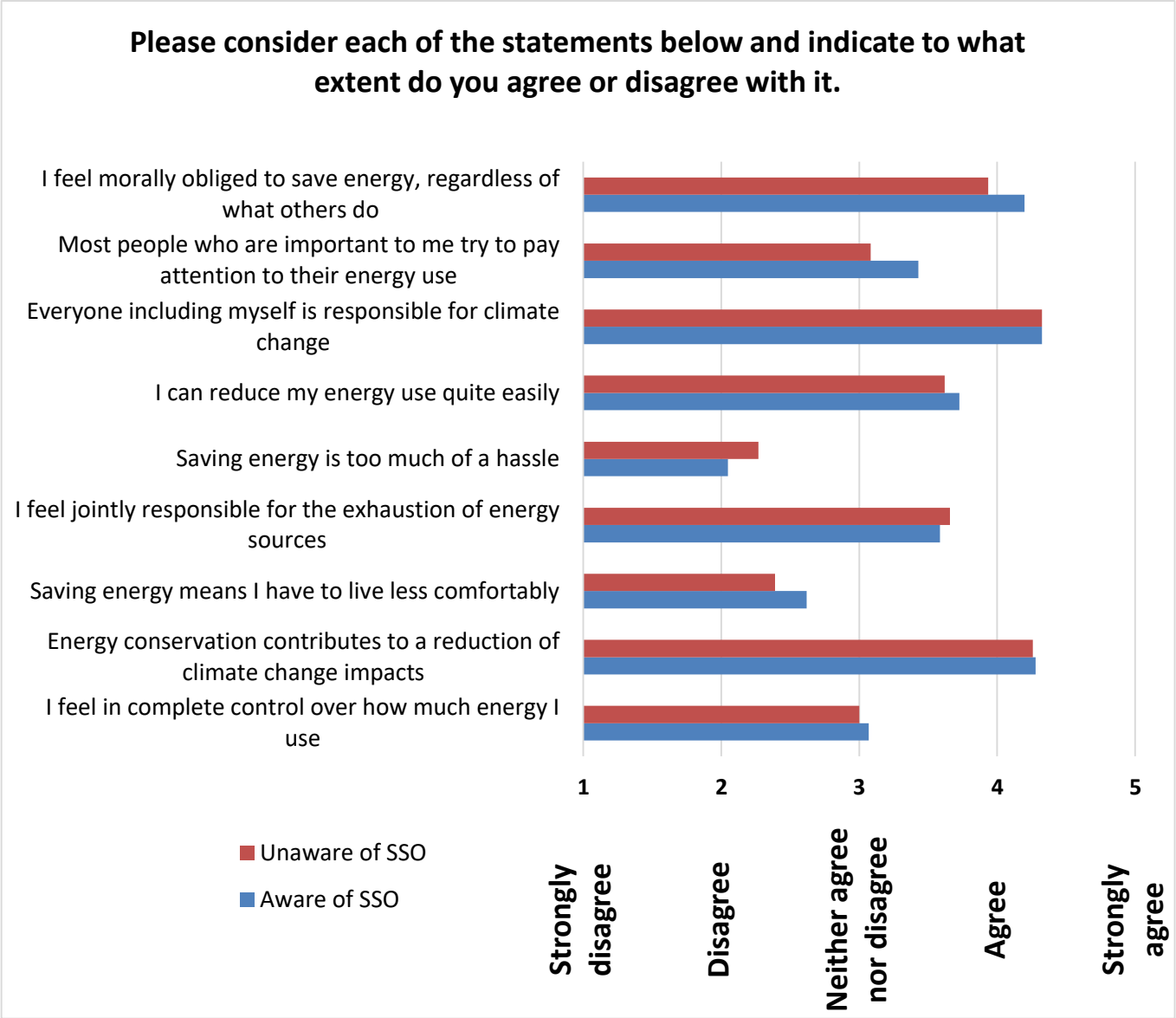

Figure 21 Behavioral antecedents - SSO influence

4.6 Important criteria when choosing home appliances – SSO influence

Respondents were asked to select the three most important criteria when choosing home appliances from a list provided to them. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 22.

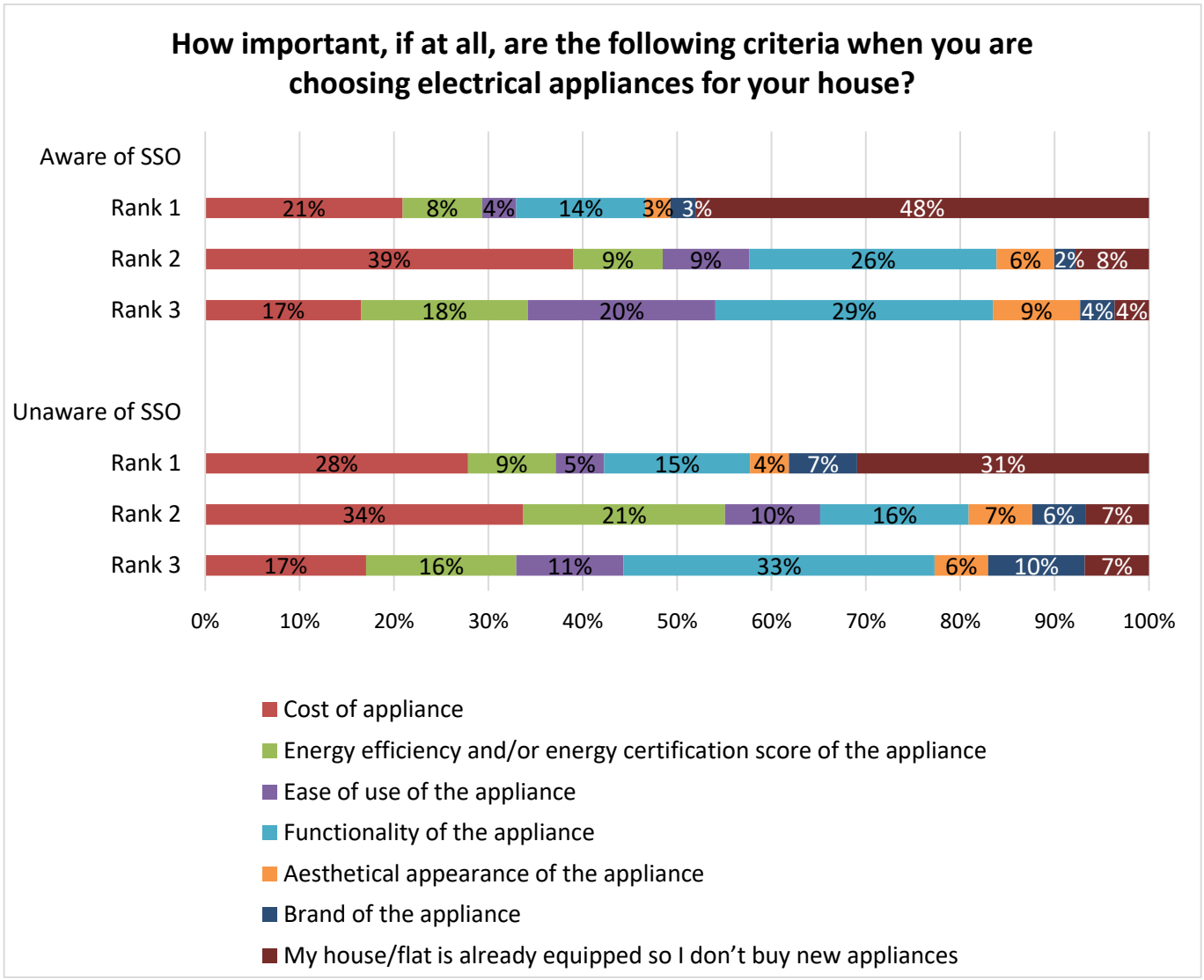

Figure 22 Ranking of criteria when choosing home appliances - SSO influence

The ranking of criteria when choosing home appliances was the same for both groups. Seventy seven percent (77%) of those who were aware of the SSO campaign (-2% less than those not aware of the campaign) stated that "Cost of appliance" was among their three most important criteria when choosing home appliances followed by "Functionality of the appliance" (69%, +5% more than those not aware of the campaign) and "Energy efficiency and/or energy certification score of the appliance" (35%, -11% less than those not aware of the campaign). However, it should be noted that a larger share of those who were aware of the SSO campaign had their flat already equipped so they didn't buy new appliances.

The following statistically significant difference was observed for the first most important criterion when choosing home appliances:

- "Brand of the appliance", (3% Aware of SSO, 7% Unaware of SSO), -4% less SSO aware respondents *(z=-2.203, p=0.014)*

The following statistically significant differences were observed for the second most important criterion when choosing home appliances:

- "Energy efficiency and/or energy certification score of the appliance", (9% Aware of SSO, 21% Unaware of SSO), -12% less SSO aware respondents (*z=-3.106, p<0.001*).

- "Functionality of the appliance", (26% Aware of SSO, 16% Unaware of SSO), +10% more SSO aware respondents *(z=2.064, p=0.02).*
- "Brand of the appliance", (2% Aware of SSO, 6% Unaware of SSO), -4% less SSO aware respondents *(z=2.064, p=0.02)*.

The following statistically significant difference was observed for the third most important criterion when choosing home appliances:

- "Brand of the appliance", (4% Aware of SSO, 10% Unaware of SSO), -6% less SSO aware respondents *(z=-2.552, p=0.005)*.

4.7 Awareness of smart meters – SSO influence

Respondents were asked if they had heard of smart meters before. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 23.

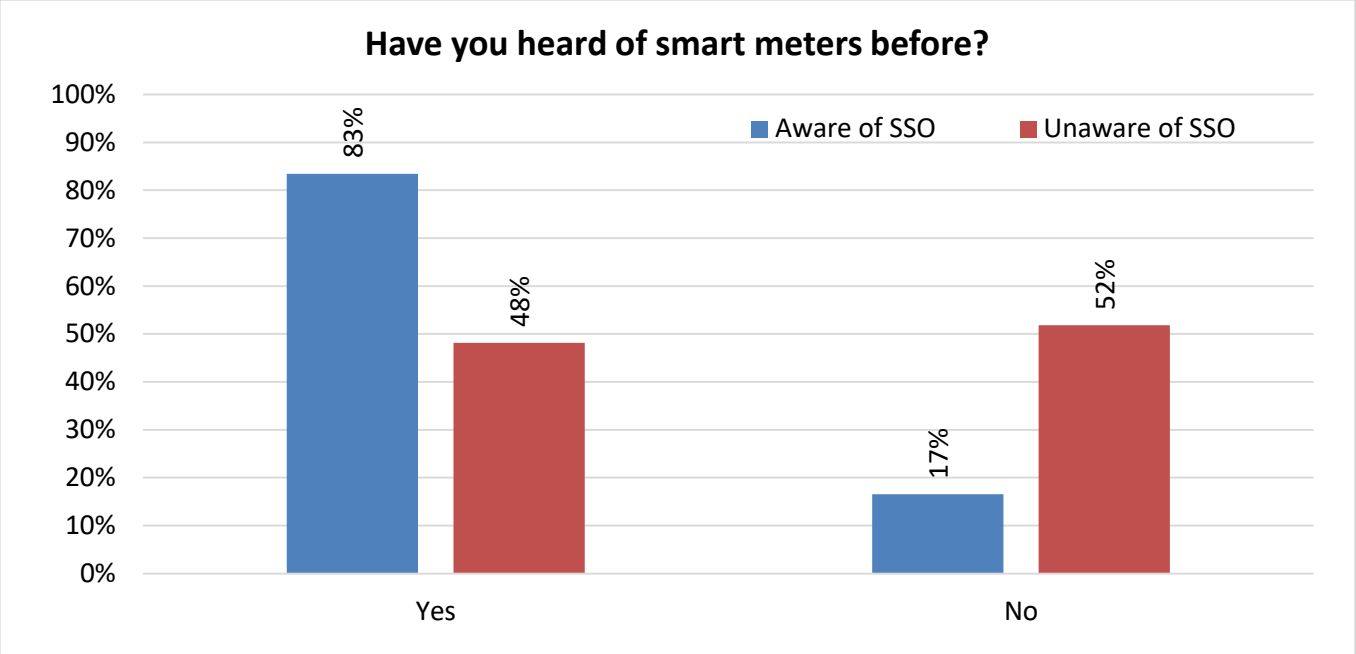

Figure 23 Awareness of smart meters - SSO influence

Eighty three percent (83%) of those who were aware of the SSO campaign, +35% more than those who were unaware of the campaign, stated that they had heard of smart meters before. Only 17% of those aware of the SSO campaign had not heard of smart meters before (-35% less than those who were unaware of the campaign). The observed difference of 35% is statistically significant *(z=7.791, p<0.001)*

4.8 Presence of smart meters – SSO influence

Respondents were asked if they have a smart meter in their current accommodation. This question was not applicable to participants who replied negatively in the question "Have you heard of smart meters before". A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 24.

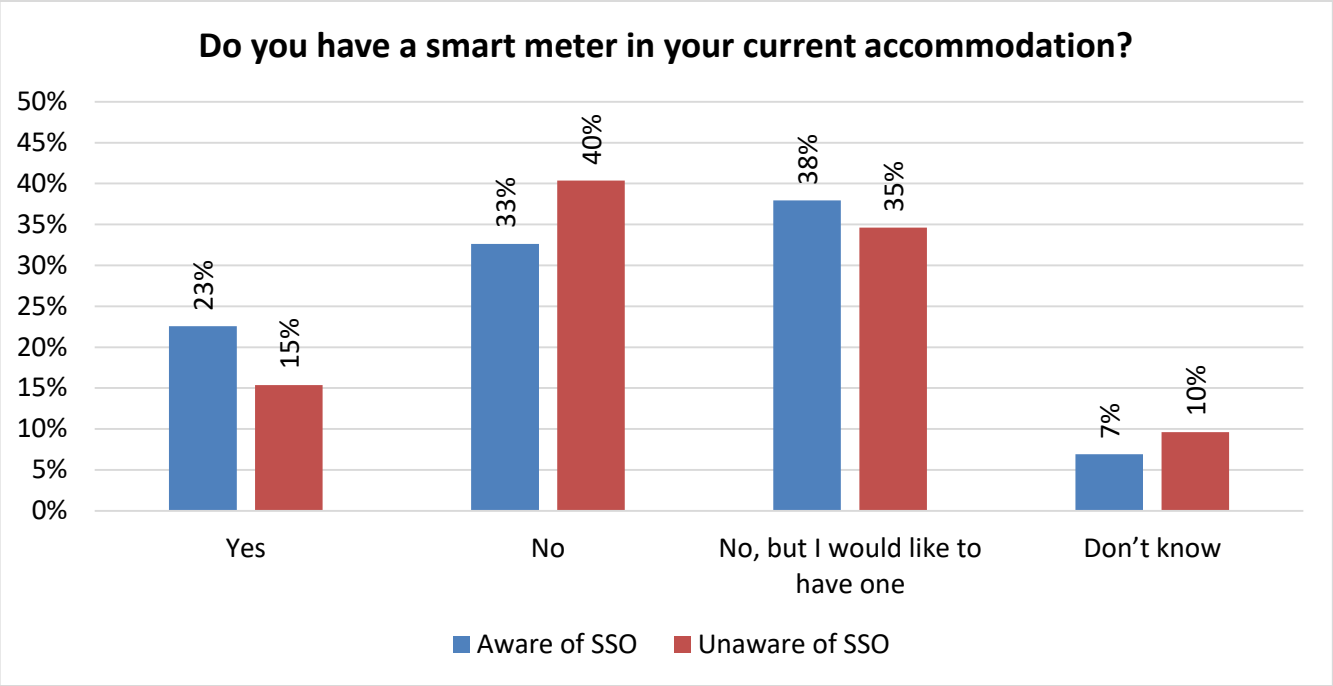

Figure 24 Presence of smart meters in respondents' accommodation - SSO influence

Twenty-three (23%) of those who were aware of the SSO campaign (+8% more than those who were not), stated that they had a smart meter in their current accommodation. On the contrary, those who didn't have a smart meter in their current property, but were aware of the SSO campaign, represent the 33% of this sample group (-7% less than those who were unaware of the campaign).

Furthermore, 38% of those who were aware of the SSO campaign reported that they didn't have a smart meter but would like to have one installed in their accommodation (+3% more than those who were unaware of the SSO campaign). Finally, 7% of those who were aware of the SSO campaign stated that they didn't know if they had a smart meter in their accommodation (-3% less than those that were unaware of the campaign). The observed differences were not statistically significant.

4.9 Opinions about smart meters – SSO influence

Respondents were asked about their level of agreement, if at all, with given statements with respect to smart meters. This question was not applicable to participants who replied negatively to the question "Have you heard of smart meters before". Results are on a 1 to 5 scale (1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree). Mean values over 3.5 indicate agreement with the statement. A low standard deviation (SD) indicates that the given answers tend to be close to the mean value, while a high standard deviation indicates that the given answers are spread out over a wider range of values. An independent samples t-test was used to determine whether the differences in the mean values recorded between the two studied groups are statistically significant. The results are illustrated in Figure 25 and tabulated in Table 51.

Both groups of respondents showed the same levels of agreement with all given statements except for "Smart meters are an invasion of privacy". Those who were aware of the SSO campaign disagreed more than those who were unaware of the campaign with this statement (M=2.23 Aware of SSO, M=2.48 Unaware of SSO) and the mean value of the former group was -11% less than the mean value of the latter group without this difference being statistically significant. Apart from the aforementioned difference, all the other observed differences are minor. Both groups agreed that smart meters are an efficient way of monitoring the energy consumption of their house in real time, smart meters can help them to save money on their energy bills, smart meters make their energy use easy to understand and control and that smart meters make life easier by taking away the hassle of meter reads and estimated bills. None of the differences were statistically significant.

Table 51 Mean values and standard deviations about shared opinions about smart meters - SSO influence

To what extent do you agree or disagree with the following statements about smart meters?							
	Aware of SSO		Unaware of SSO		Change in mean value	% change in mean value	p value
	mean	SD	mean	SD			
Smart meters are an efficient way of monitoring the energy consumption of my house in real time	4.17	0.70	4.21	0.67	-0.04	-1%	0.618
Smart meters can help me to save money on my energy bills	3.98	0.85	4.00	0.89	-0.02	-1%	0.616
Smart meters are an invasion of privacy	2.23	0.90	2.48	0.90	-0.25	-11%	0.083
Smart meters make my energy use easy to understand and control	3.92	0.78	3.90	0.78	0.02	0%	0.851
Smart meters make life easier by taking away the hassle of meter reads and estimated bills	3.90	0.86	3.94	0.85	-0.04	-1%	0.429

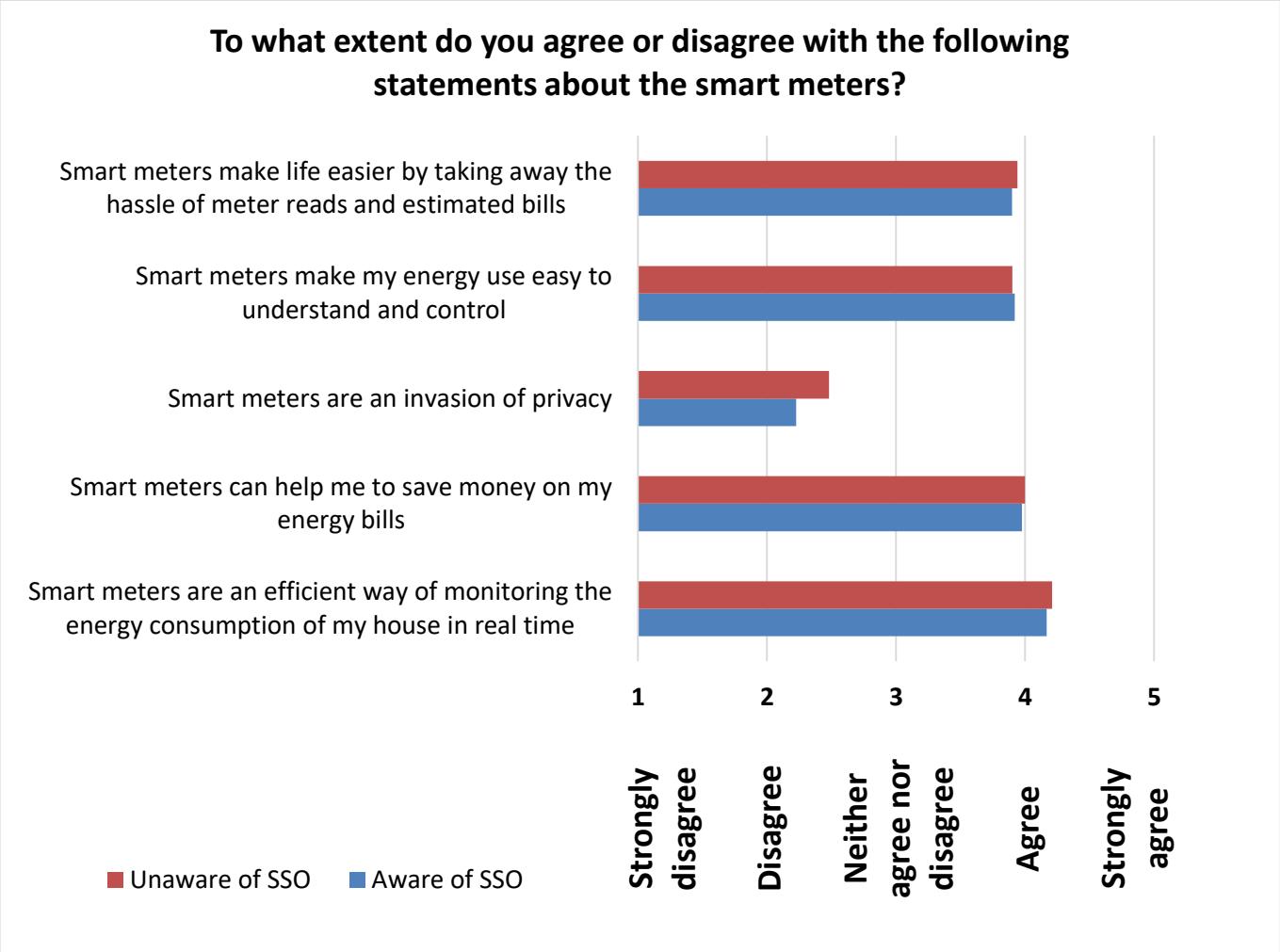

Figure 25 Shared opinions about smart meters - SSO influence

4.10 Foreknowledge of Energy Performance Certificates (EPCs) – SSO influence

Respondents were asked if they had heard of energy performance certificates (EPC) before. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 26.

Seventy four percent (74%) of those who were aware of the SSO campaign, +25% more than those who were unaware of the SSO campaign, stated that they had heard of an EPC before. On the contrary, those who had not heard of an EPC before, but were aware of the SSO campaign represent the 26% of this sample group (-25% less than those who were unaware of the campaign). The observed difference of 25% is statistically significant (*z=5.112, p<0.001*).

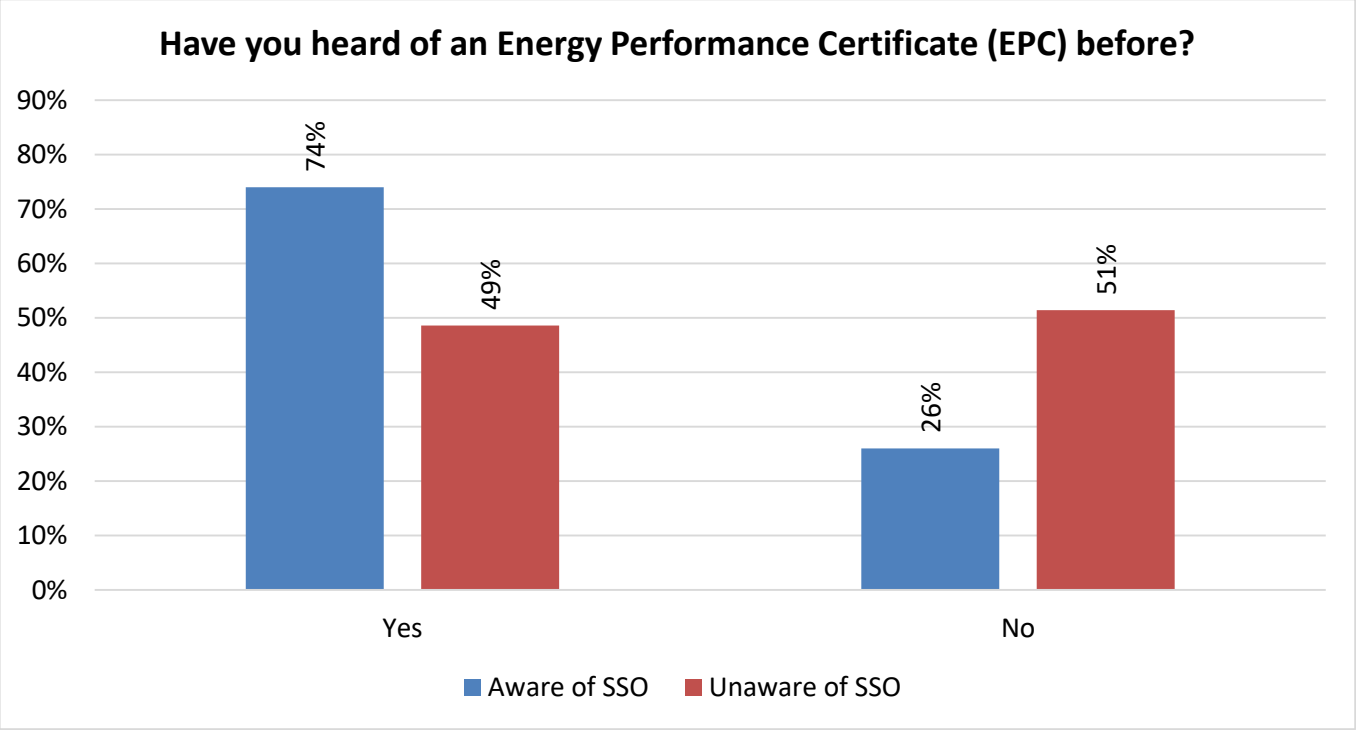

Figure 26 Awareness of Energy Performance Certificate - SSO influence

4.11 EPC viewing before moving into new accommodation – SSO influence

Respondents were asked if they saw the energy performance certificate (EPC) of their current property before they moved in. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 27.

Forty five percent (45%) of those who were aware of the SSO campaign, +20% more than those who were unaware of the campaign, stated that they saw the EPC of their current property before they moved. On the contrary, those who did not see the EPC of their current property but were aware of the SSO campaign represent the 25% of this sample group (-24% less than those who were unaware of the campaign).

Furthermore, 23% of those who were aware of the SSO campaign reported that they couldn't remember if they saw the EPC of their current property (+5% more than those who were unaware of the SSO campaign). In addition, 6% of those who were aware of the SSO campaign stated that the EPC of the accommodation was not available (-1% less than those who were unaware of the SSO campaign). Finally, 1% of those who were aware of the SSO campaign reported that although they asked their landlord to provide them a copy of the EPC, their request was denied (-1% less than those who were unaware of the SSO campaign).

All the aforementioned differences were statistically significant with a p value close to 0.

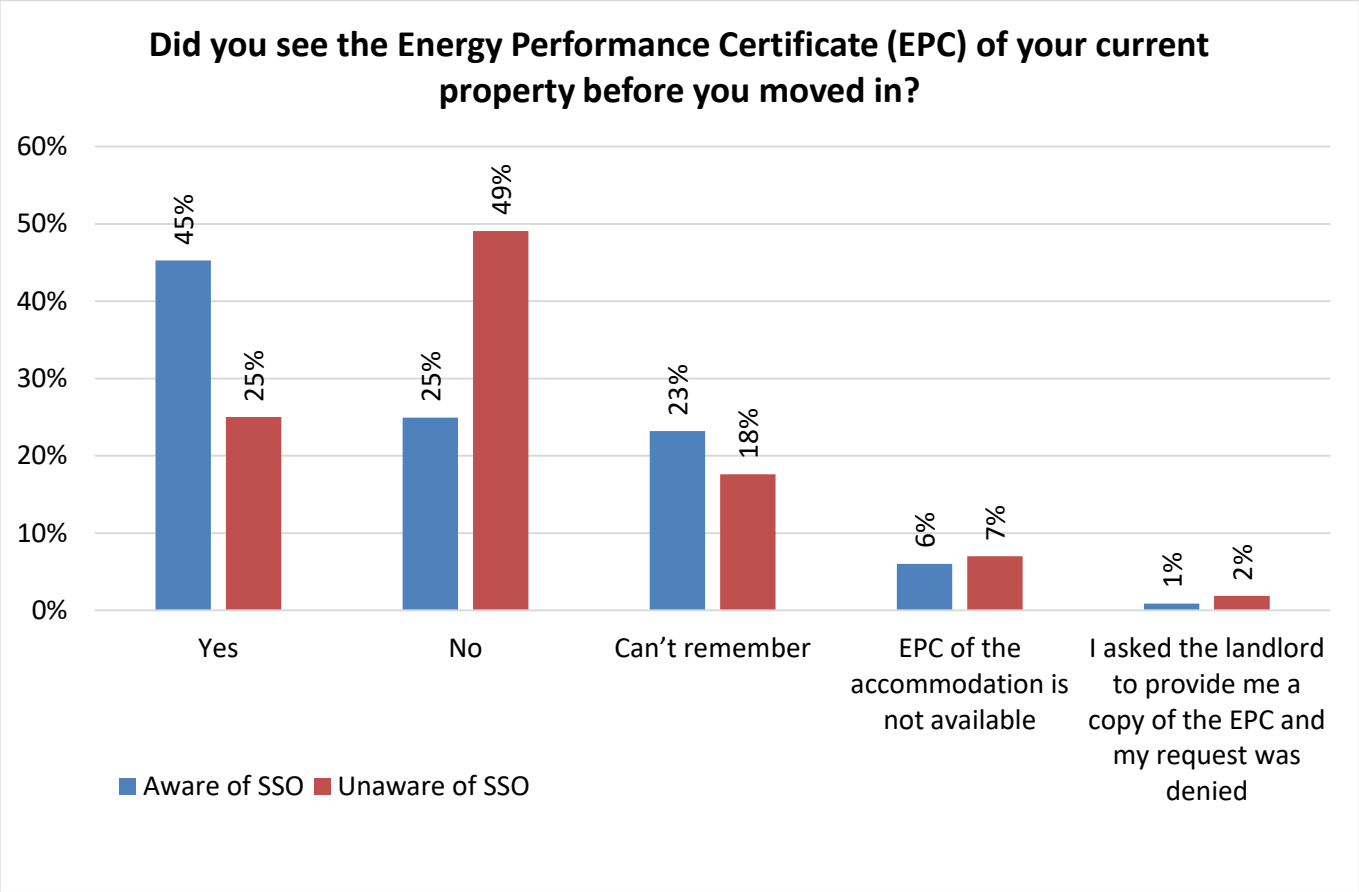

Figure 27 EPC viewing of current property before moved in - SSO influence

4.12 Energy Performance Certificate as a criterion when selecting current accommodation – SSO influence

Respondents were asked if they were influenced by the Energy Performance Certificate (EPC) score of their current accommodation before they moved in. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 28.

Twenty-six percent (26%) of those who were aware of the SSO campaign (-6% less than those who were unaware of the SSO campaign) stated that the EPC score of their current property influenced the selection of their current accommodation. Those who were not influenced by the EPC score of their current property but were aware of the SSO campaign represent the 66% of this sample group (+7% more than those who were unaware of the campaign). This observation,in which UK respondents were the majority, might be attributed to that other factors than the EPC score of the property, such as the cost of rent or the location of the property, were more important for respondents when they selected their current accommodation. Those who stated "don't know" if the EPC score of their property influenced the choice of their current accommodation while being aware of the SSO campaign represent 8% of this sample group (just +1% more than those who were unaware of the SSO campaign). None of the observed differences were statistically significant.

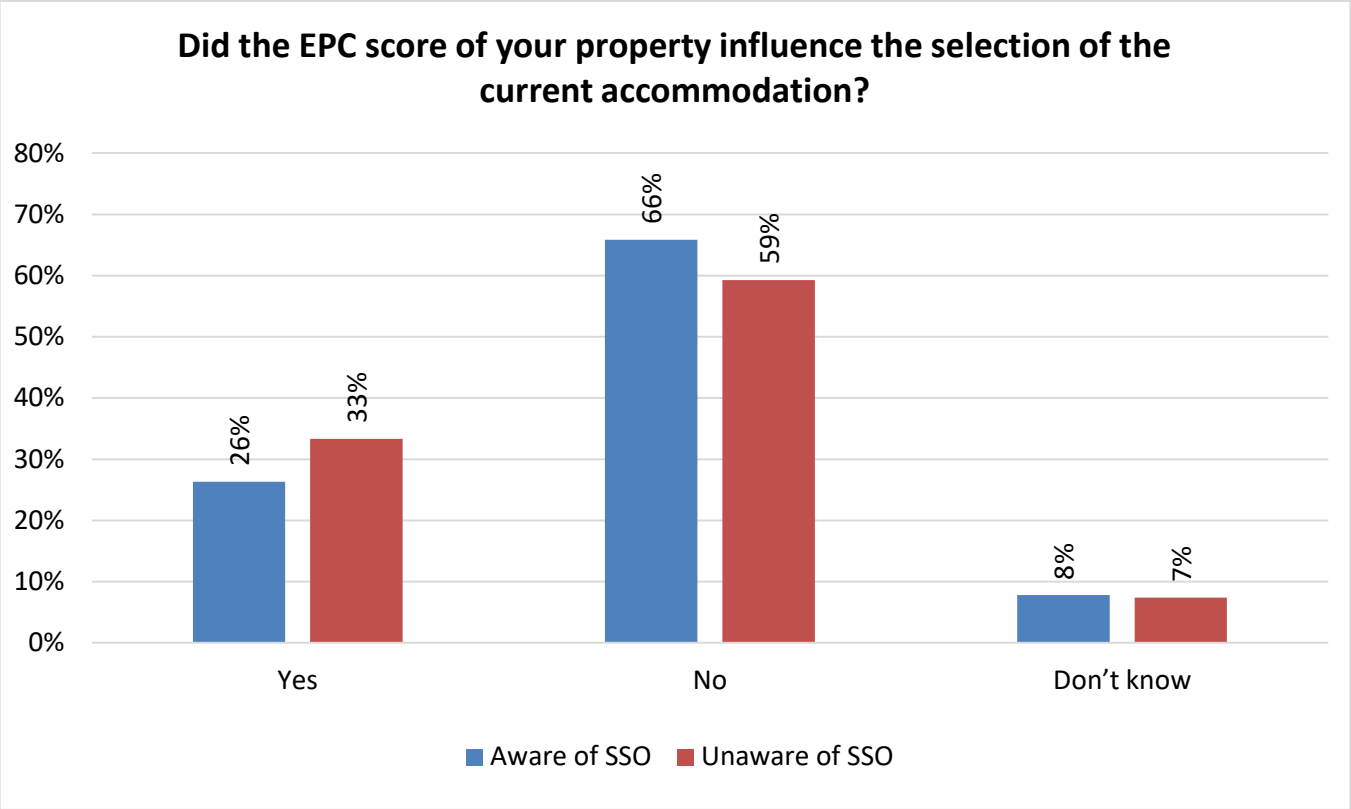

Figure 28 Energy Performance Certificate as a criterion when selecting current accommodation – SSO influence

4.13 Energy Performance Certificate as a criterion when selecting next accommodation – SSO influence

Respondents were asked if they would take the EPC score into account when selecting their next accommodation. A two-proportion z-test was used to determine whether the differences between the two studied groups are statistically significant. The results are illustrated in Figure 29.

Fifty-nine percent (59%) of those who were aware of the SSO campaign (-6% less than those who were unaware of the SSO campaign) reported that they will take the EPC score of the property into account when selecting their next accommodation. On the other hand, 41% of those who were aware of the campaign stated that they won't take the EPC score of the property into account when choosing their next accommodation (+6% more than those who were unaware of the SSO campaign). This observation might be attributed to that other factors than the EPC score of the property, such as the cost of rent or the location of the property, might be more important for respondents when selecting their accommodation. The observed differences were not statistically significant.

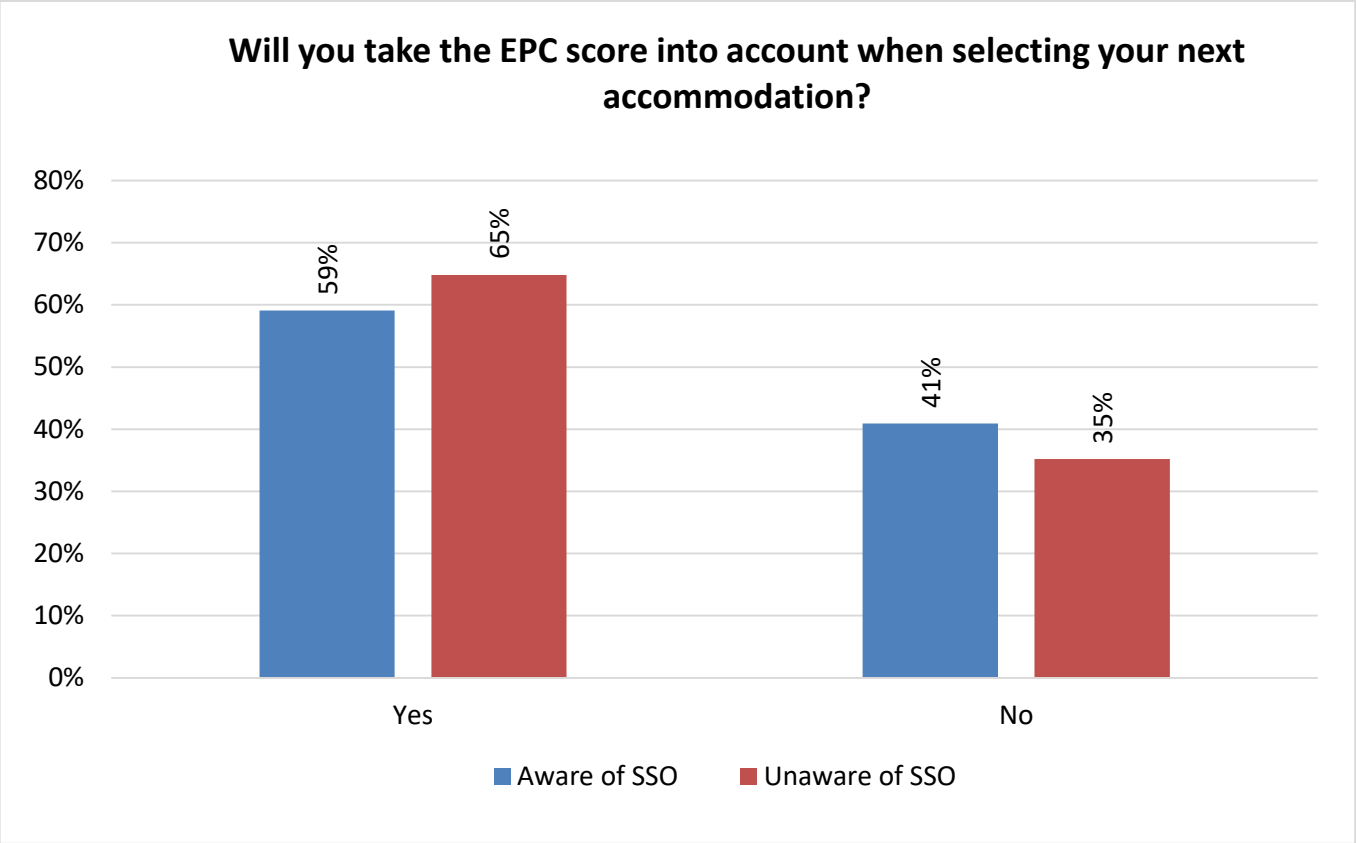

Figure 29 Energy Performance Certificate as a criterion when selecting next accommodation – SSO influence

5 Discussion and Conclusions

The impact of the SSO+ campaign on students living in private accommodation was evaluated through the level of increased energy awareness; namely on smart meters and on housing choices that can minimize exposure to fuel poverty. Changes in the awareness levels of students were evaluated through pre- (baseline) and post-intervention (follow-up) questionnaire surveys.

Six thousand two hundred and fifty-eight (6,258) students from seven EU countries (Bulgaria, Cyprus, Greece, Ireland, Lithuania, Romania and the UK) that lived in private accommodation and answered at least one SSO+ specific question were considered in the analysis. Three thousand four hundred and thirty-two (3,432) of these students were considered for the baseline survey analysis and two thousand eight hundred and twenty-six (2,826) for the follow-up survey.

The Student Switch Off+ (SSO+) campaign provided information and advice on energy saving to students who lived in private accommodation. Information involved tips for saving energy at home, energy performance certificates (EPCs), energy efficiency and smart energy meters. Evidence of the research presented in this report suggests that a good proportion of students retained many of the messages of the campaign.

In addition, students aware of the SSO campaign through living in dormitories in past years, but in this academic year (2019-20) lived in private rented accommodation (in a privately rented house/flat or rent a room in their landlord's house/flat), were separated from the follow-up survey sample and compared against students who were not aware of the SSO campaign. The differences in the energy awareness levels of the two respondent groups were assessed in order to allow the study of any occurrences of rebound or spillover effects of the SSO campaign.

Familiarization with the SSO+ campaign

At the end of the academic year a statistically significant increased share of respondents (+3%) had heard about the SSO+ campaign compared to the beginning of the academic year. The share of respondents that had heard of the SSO+ campaign was 48% in the follow-up survey and 45% in the baseline. At the end of the academic year, statistically significant increased proportions of students from Cyprus (+17%), Ireland (+12%) and Lithuania (+6%) had heard of the SSO+ campaign compared to the beginning of the academic year.

Sources of information about the SSO+ campaign

At the end of the academic year the most popular sources of information about the SSO+ campaign were emails (54%), social media (37%) and posters (30%). On the contrary 15% of those questioned were informed from seminars while only 7% of those surveyed reported they had heard about the SSO+ campaign from a friend or from a classmate. The sources of information with the most important positive difference over the academic year were emails (+11%) and social media (+4%).

The study also showed that classmates (-1% decrease from baseline survey) and friends (-2%) were the least popular sources of SSO+ information in both surveys and their popularity decreased further over the year. The decrease observed for "friends" as a source of information is also statistically significant.

Influence of SSO+ campaign

Overall, the majority of the follow-up respondents (81%) stated that the SSO+ campaign had a positive impact on their attitude towards energy saving. Two-thirds of the respondents (66%) were made aware of how to reduce their energy costs and 41% were made aware on how to be energy efficient. On the other hand, the influence of the campaign on the awareness of the follow-up survey respondents about Energy Performance Certificates (EPCs) (18%), smart meters (18%), the options on energy-efficient house appliances (18%) and on the fact that they had a choice of energy providers and tariffs (12%) was lower. In addition, about one fifth of the respondents (19%) were not influenced by the campaign.

Perceived level of information

Respondents of both surveys felt rather neutrally informed about the energy they personally consume in their home, about the impact their energy saving measures have on their energy bill and about the impact of cold

homes on their health and wellbeing. Respondents' perceived level of information about the impact that energy saving solutions can have to help reduce global warming and about what they can do to personally save energy in their accommodation was rather positive, while improvements could be made to the level of information about their tariff choices and rights for choosing and changing their energy provider.

Significant differences were observed in the total sample's level of information over the academic year about the impact that energy saving solutions can have to help reduce global warming (+4% increase in follow-up mean value) as well as about the choices of tariffs that respondents had (+3% increase in follow-up mean value). Moreover, at the end of the year the perceived level of information regarding the impact of cold homes on their health and well-being, has increased significantly by +3%.

Habits and practices

The frequency that any action was taken did not change drastically over the academic year. The actions taken more frequently at the end of the academic year were: "Switched off lights and appliances when not in use", "Only wash clothes when you have a full load" and "Allow food to cool down before putting it in the fridge". Actions taken less frequently were: "Leave the heating on when you go out for a few hours", "Defrost the fridge frequently", and "Leave your PC or TV on standby for long periods of time at home".

A statistically significant increase compared to the beginning of the academic year was observed in the frequency that respondents, left their PC or TV on standby for long periods of time at home (+6%), did not overfill the kettle with water (+3%) and washed clothes only when they had a full load (+3%).

Moreover, the findings of the follow-up survey revealed some practices that respondents from different countries have in common. According to the follow-up survey, the most frequent action respondents from Ireland, Lithuania and the UK undertook, was to wash their clothes only when they had a full load. In Cyprus and Greece, respondents switched off lights and appliances when not in use while in Bulgaria and Romania respondents allowed cooked food to cool down before putting it in the fridge. On the other hand, respondents from Cyprus, Greece and Ireland, rarely left the heating on when they were out of their homes for a few hours.

Actions taken to reduce energy costs

The most popular responses in both surveys were "Took actions to reduce my energy usage" (51% Follow-up, 46% Baseline) and "Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep the heating down in your home" (43% Follow-up, 40% Baseline). Both actions noted a statistically significant increase of +5% and +3% respectively over the academic year. Moreover, even though there was a fair share of the respondents in the baseline survey that didn't take any action towards energy saving (24%), a statistically significant decrease of -3% in this share was observed at the end of the academic year. On the other hand, the least undertaken action that was observed in both surveys was the use of a smart meter to identify energy wastage (~6%).

The biggest share of follow-up respondents in Bulgaria (53%) Cyprus (49%), Greece (36%), Ireland (63%), Romania (55%) and Lithuania (33%) reduced their energy costs by reducing their energy usage, while in the UK (67%), the majority of respondents reduced their energy costs by wearing outdoor wear.

Feelings about saving energy

By the end of the academic year, 58% of the total sample selected words with a positive meaning (Content to Optimistic) and 17% selected words with a negative meaning (Guilty to Frustrated) while in the baseline survey, 57% of the total sample had positive feelings and 16% had negative feelings. The share of those that felt indifferent didn't change drastically between the surveys (+0.2% from baseline). The highest share of respondents in both the follow-up (35%) and the baseline (36%) surveys felt optimistic about energy saving. The second most popular answer, which also presented a statistically significant increase (+2%) at the end of the year was contentment (23% Follow- up; 21% Baseline) suggesting that, overall, respondents have positive feelings towards saving energy.

At the end of the academic year, 67% of respondents from Bulgaria, 71% from Cyprus, 62% from Lithuania, 53% from Ireland, 56% from the UK as well as 66% and 85% from Greece and Romania respectively, described their feelings about saving energy in a positive manner [Optimistic, Proud, Content]. Furthermore, in Bulgaria (33%), Cyprus (33%), Greece (35%) Ireland (32%), Lithuania (44%) Romania (46%) and the UK (28%) the biggest share of follow-up respondents felt optimistic about saving energy. On the other hand, the

word "Frustrated" was the least selected in Bulgaria (4%), Cyprus (2%), Greece (2%), Ireland (6%), Romania (1%) and the UK (8%) while in Lithuania (2%) "Proud" was the least selected option.

Behavioral antecedents

In all countries, respondents in both surveys agreed on a) energy conservation contributes to a reduction of climate change impacts, b) everyone including their self is responsible for climate change, and c) they feel morally obliged to save energy, regardless of what others do. By the end of the academic year, the total sample of respondents agreed the most with the statements "Everyone including myself is responsible for climate change" and "Energy conservation contributes to a reduction of climate change impacts". In contrast, the total sample of those surveyed disagreed the most with the statement "Saving energy is too much of a hassle".

In Bulgaria, Ireland, Romania and the UK, respondents agreed the most on that "everyone including myself is responsible for climate change". In Greece and Cyprus, respondents agreed the most that "energy conservation contributes to a reduction of climate change impacts". In Lithuania respondents agreed the most with the statement "I feel jointly responsible for the exhaustion of energy sources". Furthermore, in all individual countries respondents disagreed with the statement "saving energy is too much of a hassle''.

Statistically significant differences in agreement levels between the baseline and follow-up survey findings were found for the following statements:

- "I feel jointly responsible for the exhaustion of energy sources" (-2% decrease in mean value in follow-up)
- "I can reduce my energy use quite easily" (+2% increase in mean value in follow-up)
- "Most people who are important to me try to pay attention to their energy use" (+2% increase in mean value in follow-up)
- "I feel morally obliged to save energy, regardless of what others do" (+2% increase in mean value in follow-up).

Important criteria when choosing appliances

The top three criteria for choosing appliances were the same in both the baseline and the follow-up survey. Those were: first "Cost of appliance", second "Functionality of the appliance" and third "Energy efficiency and /or energy certification score of the appliance". The proportion of respondents that would choose an appliance based on its functionality was increased by +3% at the end of the academic year while +2% more respondents of the follow-up survey would choose an appliance based on its energy efficiency and/or its energy certification score.

By the end of the academic year, in Bulgaria (45%) and Lithuania (32%), "Functionality of the appliance" was the most important criterion when choosing home appliances. In Cyprus (38%), Greece (40%), Ireland (33%) and the UK (40%), "Cost of appliance" was the most important criterion when choosing home appliances. In Romania (34%), the "Energy efficiency and/ or energy certification score of the appliance" criterion was pointed out as the primary selection criterion.

Smart meters

The number of respondents that had heard of smart meters before was the same between the beginning and end of year survey (48% of the total sample). The highest share of follow-up respondents who had heard of smart meters before was recorded in the UK (86%). This share was increased by +8% compared to the baseline survey.

In both surveys respondents that had a smart meter represented almost one quarter of the surveyed sample (25% Follow-up, 23% Baseline). The share of the participants who reported that they didn't have a smart meter slightly changed at the end of the year (-1% from baseline) while the proportion of those who although didn't have a smart meter were willing to have one remained unchanged (37%). Eventually, the share of those who didn't know if they have a smart meter installed in their current accommodation reduced by -2% (8% Follow-up, 10% Baseline).

Overall, respondents in both the baseline and the follow-up survey had positive opinions about smart meters. These opinions remained unchanged over the academic year. In fact, in all countries, respondents in both surveys agreed with the four positive statements:

- Smart meters are an efficient way of monitoring the energy consumption of my house in real time
- Smart meters can help me to save money on my energy bills
- Smart meters make my energy easy to understand and control
- Smart meters make life easier by taking away the hassle of meter reads and estimated bills

and disagreed with the one negative statement:

- Smart meters are an invasion of privacy.

Energy Performance Certificate

In the baseline survey, less than half of the respondents (47% of baseline respondents) had heard of an Energy Performance Certificate (EPC) before. At the end of the academic year this share was +7% higher (54% of follow-up respondents). This increase was in fact statistically significant. In all countries, respondents had some knowledge about EPC in both surveys. In all countries except for Bulgaria the share of respondents that had heard of EPC's before was higher at the end of the academic year. The increase was statistically significant in Greece (+12%), Romania (+18%) and the UK (+12%).

Overall, 24% of the respondents, in both surveys, stated that they saw the EPC score of their current property before they moved in while 41% in the follow-up survey (-3% less than in baseline) stated that they didn't see the respective certificate. Interestingly, 24% of the respondents in the follow-up survey couldn't remember if they saw the EPC of their current accommodation before moving in (+1% more than in baseline) whereas the share of the respondents who answered that the EPC of the accommodation was not available, increased (9% Baseline; 11% Follow-up) reporting a significant statistical increase of +2%.

Regarding the influence of the EPC score when selecting their current accommodation, more than one third of the respondents in both surveys (36% follow-up, 35% baseline) stated that they were influenced by the property's EPC score for selecting their current accommodation whereas less than half of the participants in both surveys, (48% follow-up, 47% baseline) answered that the EPC score was not a criterion for selecting their current accommodation. In addition, 17% of those surveyed in both surveys were uncertain if the EPC score influenced their current accommodation choice.

Finally, in most countries, the percentage of respondents who will consider the EPC score when selecting their next accommodation is encouraging. More than 70% of the respondents in each country except in the UK (58%), who had heard of the EPC before, stated that they will take the EPC into account when selecting their next accommodation.

Rebound and spillover effects of the SSO campaign

Overall, respondents who were aware of the SSO campaign felt better informed about all **issues that involved the energy and environmental performance of their home** compared to those who were unaware of the SSO campaign. The increased levels of information recorded for those who were aware of the SSO campaign were statistically significant for the topics described below:

- "What you can personally do to save energy in your accommodation", +8%
- "The impact that energy saving solutions can have to help reduce global warming", +6%
- "The rights you have in choosing and changing your energy provider", +18%
- "The choices of tariffs that you have with your energy provider", +15%
- "The impact of cold homes on your health and well-being", +9 %

Respondents who were aware of the SSO undertook all questioned **energy saving practices** except for defrosting the fridge frequently and switching off lights and appliances when not in use, more often than those who were not aware of the SSO campaign. Statistically significant differences were observed in the frequency that those who were aware of the SSO campaign:

- "Wash clothes at 30 degrees centigrade or less"; +10% higher mean value of those who were aware of the SSO campaign suggesting a more frequent undertaking of this action,
- "Only wash clothes when they have a full load"; +5% higher mean value of those who were aware of the SSO campaign suggesting a more frequent undertaking of this action

In addition, higher share of those who were aware of the SSO campaign took **actions to reduce their energy costs whilst in their current accommodation** compared to those who were not aware of the SSO campaign except for approaching their landlord to buy more energy efficient appliances or bought some themselves.

Statistically significant differences between the two groups were observed for the following actions:

- "Switched supplier or tariff in the last 6 months", +10% more respondents who were aware of the SSO campaign took this action,
- "Took actions to reduce my energy usage", +16% more respondents who were aware of the SSO campaign took this action
- "Worn outdoor wear (e.g. hat/scarf/coat/gloves) or more clothes to keep warm in your home", +24% more respondents who were aware of the SSO campaign took this action
- "None of these" -16% less respondents who were aware of the SSO campaign stated that they did not take any of the mentioned actions to reduce their energy costs

Furthermore, those who were aware of the SSO campaign showed a stronger agreement with most of the given **statements about energy related issues** compared to those who were unaware of the SSO campaign. On the other hand, those being aware of the campaign didn't feel jointly responsible for the exhaustion of energy sources as much as those who were unaware of the SSO campaign. What is more, those who were aware of the SSO campaign agreed more than the other surveyed group on that saving energy means they have to live less comfortably.

Statistically significant differences between the two groups were found in the following items:

- "Saving energy means I have to live less comfortably". +9% higher mean value of those who are aware of the SSO campaign suggesting a stronger agreement of this group with the statement
- "Saving energy is too much of a hassle". -11% reduced mean value of those who are aware of the SSO campaign suggesting a stronger disagreement of this group with the statement.
- "Most people who are important to me try to pay attention to their energy use". +10% higher mean value of those who are aware of the SSO campaign suggesting a stronger agreement of this group with the statement.
- "I feel morally obliged to save energy, regardless of what others do", +6% higher mean value of those who are aware of the SSO campaign suggesting a stronger agreement of this group with the statement

In general, both groups of participants in the survey would describe their **feelings about saving energy** as positive. The majority of both groups (58% "Aware of SSO", 57% "Unaware of SSO")) selected words with positive meaning (Content to Optimistic) while 32% of those aware and 31% of those unaware of the SSO campaign selected words with a negative meaning (Guilty to Frustrated).

Another similarity between the two groups was observed with regard to the top three **criteria for choosing home appliances** which were the same in both groups. Those were: 1st "Cost of appliance", 2nd "Functionality of the appliance" and 3rd "Energy efficiency and /or energy certification score of the appliance". Interestingly, concerning all top three criteria, statistically significant lower shares of those who were aware of the SSO campaign would choose an appliance based on its brand.

When it comes to smart metering, 83% of those who were aware of the SSO campaign, recording a statistically significant difference of+35% more than those who were unaware of the SSO campaign, stated that they had heard of **smart meters** before. In addition, 23% of those who were aware of the SSO campaign, +8% more than those who were unaware of the SSO campaign, stated that they had a smart meter in their current accommodation. Furthermore, both groups of respondents showed the same levels of agreement with all given statements about smart meters except for that "Smart meters are an invasion of privacy". Those who were aware of the SSO campaign disagree more than those who were unaware of the SSO with regard to this statement and a -11% difference between the two groups was observed without being statistically significant.

The analysis ends with questions about the **Energy Performance Certificates**. Seventy four percent (74%) of those who were aware of the SSO campaign stated that they had heard of an EPC before recording a statistically significant difference of +25% more than those who were unaware of the SSO campaign. In addition, 45% of those who were aware of the SSO campaign, +20% more than those who were unaware of the SSO campaign, stated that they saw the EPC of their current property before they moved in. On the contrary, those who did not see the EPC of their current property but were aware of the SSO campaign were -24% less than those who were unaware of the campaign. Furthermore, 26% of those who were aware of the SSO campaign, -6% less than those who were unaware of the SSO campaign, stated that the EPC score of the property influenced the selection of their current accommodation while 66% of those who were aware of the campaign, were not influenced by the EPC score of their current property, +7% more than those who were

unaware of the campaign. Finally, 59% of those who were aware of the SSO campaign and 65% of those who were not aware, reported that they will take the EPC score of the property into account when selecting their next accommodation.

Annex I

Table 52 Country specific number of responses received per question in baseline and follow-up surveys (B: baseline; F: follow-up)

	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F
How old are you?	126	73	584	867	566	346	224	274	502	355	400	237	1030	674
Which of these best describes your current accommodation?	126	73	584	867	566	346	224	274	502	355	400	237	1006	664
Please tell us the field which you are currently studying. To complete the survey we need to know which type of subject you are studying.	125	73	554	849	558	345	223	272	501	354	379	234	1025	670
Which of the following best describes your gender identity.	126	73	582	865	566	345	222	273	502	355	399	236	1028	672
Have you heard of the Student Switch Off+ (SSO+) campaign? It is an energy information campaign for students living in the private rented sector.	126	73	584	867	566	346	224	274	502	355	400	237	1030	674
Where did you hear about the Student Switch Off+ (SSO+) campaign?	22	13	115	317	130	79	65	111	73	72	288	187	865	576
In what ways has Student Switch Off+ (SSO+) influenced you?	*n/a*	13	*n/a*	317	*n/a*	791	*n/a*	111	*n/a*	72	*n/a*	187	*n/a*	576
How well informed do you feel about the following?	112	58	524	786	542	287	192	241	439	318	368	227	934	615
To what extent do you undertake the following actions?	110	58	523	779	539	284	191	239	438	315	365	226	930	615
Which of the following actions, if any, have you taken in order to reduce the cost of your energy bill?	113	58	530	789	543	289	192	243	443	321	370	229	936	617
Which of the following words best describes how you feel about saving energy?	109	55	498	751	523	268	175	221	424	301	345	224	889	593
Please consider each of the statements below and indicate to what extent you agree or disagree with it?	109	55	495	751	527	267	175	221	425	301	346	224	886	592
How important, if at all, are the following criteria when you are choosing electrical appliances for your house?	72	38	349	533	386	193	130	167	310	230	154	126	659	469
Have you heard of smart meters before?	109	55	493	751	525	265	172	222	421	298	342	222	886	581
Do you have a smart meter in your current accommodation?	40	21	137	236	165	65	100	114	145	112	133	108	696	500
To what extent, if any, do you agree or disagree with the following statements about the smart	40	21	132	225	160	61	100	113	144	112	130	107	692	499

	Bulgaria		Cyprus		Greece		Ireland		Lithuania		Romania		UK	
	B	F	B	F	B	F	B	F	B	F	B	F	B	F
meters?														
Have you heard of an Energy Performance Certificate (EPC) before?	109	54	484	748	517	261	168	219	418	295	438	218	875	575
Did you see the Energy Performance Certificate (EPC) of your current property before you moved in?	107	55	480	729	511	260	167	220	416	295	337	220	874	578
Did the EPC score of your property influence the selection of the current accommodation?	10	3	62	100	57	33	30	47	86	55	80	59	356	257
Will you take, the Energy Performance Certificate score into account when selecting your next accommodation?	*n/a*	53	*n/a*	743	*n/a*	260	*n/a*	218	*n/a*	291	*n/a*	220	*n/a*	574

Annex II

Table 53 Number of responses received per question and per group - SSO influence on respondents living in private rented accommodation

	Aware of SSO	Unaware of SSO
How well informed do you feel about the following?	452	108
To what extent do you undertake the following actions?	451	108
Which of the following actions, if any, have you taken in order to reduce the cost of your energy bill?	453	108
Which of the following words best describes how you feel about saving energy?	453	108
Please consider each of the statements below and indicate to what extent you agree or disagree with it?	452	108
How important, if at all, are the following criteria when you are choosing electrical appliances for your house?	416	97
Have you heard of smart meters before?	453	108
Do you have a smart meter in your current	377	52

accommodation?		
To what extent, if any, do you agree or disagree with the following statements about the smart meters?	377	52
Have you heard of an Energy Performance Certificate (EPC) before?	450	107
Did you see the Energy Performance Certificate (EPC) of your current property before you moved in?	453	108
Did the EPC score of your property influence the selection of the current accommodation?	205	27
Will you take, the Energy Performance Certificate score into account when selecting your next accommodation?	450	108