Activating Circular Services in the Electric and Electronic Sector

GA NUMBER: 776714

Deliverable 5.5. Socio-cultural acceptance analysis of C-SERVEES products and services

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Version history	**#**	**Reviewer**	**Comments**
	00	PNO	First draft
	01	WP leaders	Conclusions about results and references
	02	AIMPLAS	Final
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Executive Summary

The main purpose of this deliverable is to report the insights on the social acceptance as result of the anonymous survey questionnaire launched through different channels in the development of the C-SERVEES project, during the task 5.4 "Socio-cultural acceptance analysis".

This public perception study has been carried out to analyse how end users and society are aware of and perceive the problems associated with current WEEE generation and management, as well as their acceptance of the new products and services provided by C-SERVEES.

The main objective of the dissemination and communication activities developed during this phase of the project were to achieve the largest population in order to cover a significative range of society, considering different social factors as country origin, gender, education level, age and family size.

Results gathered from the survey translated into eight different languages, succeed in covering responses from 508 people from 23 different countries from all over the world but with a significant participation of European Union countries (95% of the respondents). It has been observed a balanced number of responses in terms of gender and family size, but not harmonized number of responses in terms of age and education level, being properly considered in the conclusions below.

First insights of social acceptance are satisfactory, considering that the factors addressed were highly supported by the respondents of the survey.

The results issued by the survey indicate that despite the awareness of the respondents about different social challenges related to C-SERVEES project, there is still a traditional factor with strong influence in the purchase decision that could limit the popularity of certain products or services from Circular Economy Business Models.

This factor could, by the other way, enhance other kind of services which could have a bigger acceptance when entering the market.

Content

Acronyms and abbreviations

ALM	Advanced Link Monitoring
BM	Business Model
CE	Circular Economy
CEBM	Circular Economic Business Model
EEE	Electrical and Electronic Equipment
WEEE	Waste Electrical and Electronic Equipment

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1. Introduction

C-SERVEES is a European H2020 project that aims to boost a resource-efficient circular economy in the electrical and electronic sector through the development, testing, validation and transfer of new circular economic business models. The new circular business models, developed in WP2, are based on systemic eco-innovative services that include: (1) eco-leasing of EEE, (2) product customization, (3) improved WEEE management, and (4) ICT services to support the other eco-services. ICT tools are being developed in WP3 as a driver of the proposed eco-innovative services. Figure 1 shows a schematic overview of the C-SERVEES project and its main innovative solutions.

The new circular economic business models are being implemented and tested in WP4 by means of demonstrations involving four target products: washing machines (large household appliances), multifunctional laser printers and their toner cartridges (IT equipment), ALM products (telecommunications equipment) and TV sets (consumer electronics equipment). The demonstrations involve the whole life cycle of the four target products, their associated value and supply chains, and the proposed eco-innovative services. These environmentally improved products and services are intended to be introduced to the market so the evaluation of the socio- cultural acceptance must be evaluated.

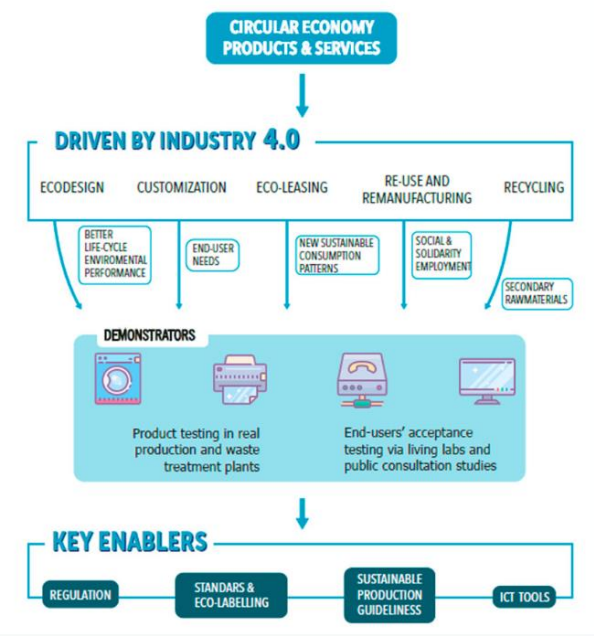

Figure 1: *Schematic overview of the C-SERVEES project.*

Included in the environmental, economic and social viability of the target product and related services developed in WP5, a public perception study was planned to analyse how end users and society are aware of and perceive the problems associated with current WEEE generation and management, as well as their acceptance of the new products and services provided by C-SERVEES.

The present report describes the results of the Socio-cultural acceptance survey of C-SERVEES products and services launched to the general society, with the objective of understanding how the C-SERVEES project will impact at a consumer and social level.

2. Methodology

2.1. Design of the survey

The Socio-cultural acceptance survey developed in Task 5.4 has based its questions according to the information gathered during WP1" Requirements for the new circular economic surveys" and Deliverable 1.1. (Survey Design and Planning). During this phase of the project, it was made a preliminary analysis of technical, economic, socio-cultural, regulatory and environmental barriers and opportunities for the eco innovative solutions proposed in the project in different aspects. Qualitative and quantitative data related to socio-cultural aspects among others, was collected from the different stakeholders:

1. Designers
2. Suppliers
3. Manufacturers
4. Retailers
5. End users
6. WM handlers
7. Researchers
8. Consumer organisations.

The main findings of this first survey have been used for designing the Socio-cultural acceptance survey of C-SERVEES products and services, considering the results about the following social aspects identified:

- Social Opportunities: Reuse and easy maintenance and repair of products and presence of product certifications and guarantees.
- Social Challenges: Social trend of replacing rather than repairing products and lack of knowledge and understanding of circular products and practices
- Social Enablers: Increasing accessibility to products' repair and replacement services

Furthermore, were also considered the results from two surveys/ interviews created during demo use phase to get customer feedback (related to WP4)

- LEXMARK (printers): Face to face interviews in living labs and product use locations
- ARÇELIK (washing machines and TVs)

All the information gathered from both WP1 and demo-phases (WP4) were taking into account for the design of the survey for the socio-cultural acceptance analysis of C-SERVEES products and services, which is described in next sections.

2.2. Survey for socio-cultural acceptance of C-SERVEES products and services content.

The survey is composed of three sections: the first gathers information related to the main social and demographic features of the sample, the second investigates the perceived opinion about the social challenges related to C-SERVEES project, and the third focuses on the purchasing habits and preferences when buying both new and re-used/ refurbished Electrical and Electronic Equipment as well as explores the opinion about some of the services developed in C-SERVEES project.

The complete survey was launched as follows through "*Google Forms*" (English version):

The purpose of this anonymous survey is to provide guidance for the development of new products and services in the Electrical & Electronic Equipment (EEE) sector, changing the traditional business models into Circular Economy ones.

With your answers we will know if these services and products can fit in our current society in order to reach a more successful circularity in the EEE sector. The survey is aimed to capture your opinion regarding:

- General concern about circular economy;
- Purchasing habits and preferences;
- Opinion about products and services related to circular economy.

Personal information

1. Country of residence
2. Education level * (please select)
    a. Elementary/High school
    b. Technical/vocational program
    c. Bachelor
    d. Master/PhD
    e. Other/No answer
3. Gender *
    a. Female
    b. Male
    c. No answer
4. Please select your age group *
    a. <18
    b. 18-34
    c. 34-64
    d. >65
    e. Prefer not to say
5. Family size:
    a. Single (1 person)
    b. Couple without children
    c. Family (single or couple with 1 or 2 children)
    d. Large family (>4 people at home)

General view about social challenges related to C-Servees project

6. Do you agree on the following statements? (Strongly disagree /Disagree/Neither agree nor disagree/Agree/ Strongly agree)
    a. Currently, there is a social trend of replacing products rather than repairing.
    b. Currently, there is a Growing social concern for the environment (global warming, pollution, etc.)
    c. Actual business models must change into low-carbon and circular ones
    d. Currently, there is a Lack of knowledge of society about circular economy.
    e. Environmentally friendly products/services are more expensive than others.

Purchasing habits and acceptance

7. When buying **new Electrical and Electronic Equipment** (TV, washing machine, printer, telecom product, smartphone, etc.), how do the following factors influence in your final purchasing decision? (Strong influence /Mild influence/No influence)
    a. Price
    b. Brand reputation
    c. Consumption of water and/or energy and/or other consumables (paper, detergent, coffee…)
    d. Quality certifications and duration of guarantee
    e. Appearance of the product

8. Having information about the following factors, please rate whose would influence in your final purchasing decision of EEE? (Strongly disagree /Disagree/Neither agree nor disagree/Agree/ Strongly agree)
    a. Recycled content of components (for instance plastics).
    b. Low maintenance and easy repairability of products.
    c. Eco-design: easy recycling and reuse.
    d. Life-cycle assessment (environmental and social impacts of the product).

9. Which of the following **options** would you choose (avoiding costs factors) when needing a new EEE *Please sort according to your preference, being 1 the mostly preferable and 5 the least one*.
    a. To buy a re-used/ refurbished EEE product
    b. To rent (Eco-leasing)
    c. To pay when you use the EEE (Pay-per-use model)
    d. To buy a new product with maintenance service (included replacement of parts)
    e. To buy a new product without any additional service included

10. If you bought **a re-used/ refurbished EEE product**, how the following factors would influence your decision? (Strong influence /Mild influence/No influence)
    a. Price
    b. Brand reputation
    c. Consumption of water and/or energy and/or other consumables (paper, detergent, coffee…)

d. Certifications and duration of guarantee
e. Cosmetic damages

11. Which of the following equipment will you more likely purchase as **re-used or refurbished**? (*Please choose 2*)
    a. TV and TV sets
    b. Large household appliances (washing machine, refrigerator, etc)
    c. Small electronic equipment (cell phone, computer, printer, etc.)
    d. Small household appliances (coffee machine, microwave oven, etc.)

12. Which of the following equipment would you more likely acquire in an **eco-lease or pay-per-use model**? (*Please choose 2*)
    a. TV and TV sets
    b. Large household appliances (washing machine, refrigerator, etc)
    c. Small electronic equipment (cell phone, computer, printer, etc.)
    d. Small household appliances (coffee machine, microwave oven, etc.)

13. Please give any additional comments.

2.3. Survey promotion

The C-SERVEES socio cultural-acceptance survey was launched the 31st January and closed the 8th June with the objective of gathering the biggest number of responses from the society as a whole, with independence of the gender, educational level, age or other circumstances.
For that reason, the survey was translated into 8 different languages with the collaboration of the partners and third parties participating in C-SERVEES project.

- **ENGLISH:** SURVEY FOR SOCIO-CULTURAL ACCEPTANCE OF C-SERVEES PROJECT PRODUCTS AND SERVICES. https://forms.gle/M35Ld18kC9sufhSt6

- **FRENCH** : ENQUÊTE SUR L'ACCEPTATION SOCIO-CULTURELLE DES PRODUITS ET SERVICES DU PROJET C-SERVEES.
  https://docs.google.com/forms/d/e/1FAIpQLSdOHl-IGHm1INMRm_JEzEAvD8Y_vTWOgO0oLwVMyjQokDdq4w/viewform

- **GERMAN:** UMFRAGE ZUR SOZIO-KULTURELLEN AKZEPTANZ DER C-SERVEES PRODUKTE UND DIENSTLEISTUNGEN.
  https://docs.google.com/forms/d/e/1FAIpQLSfBEl7smaFuDpQpaQinSukUjBEetXQILuYsyg0ttVb6cn_ovQ/viewform

- **ITALIAN:** QUESTIONARIO PER LA VERIFICA DELL'ACCETTAZIONE SOCIO-CULTURALE DEI SERVIZI E DEI PRODOTTI SVILUPPATTI DAL PROGETTO C-SERVEES
  https://docs.google.com/forms/d/e/1FAIpQLSdrrGbBYlyiDHl7OstS8rsBDxGEncyIrXi8Uvd9o3fBHB_Rbg/viewform

- **SPANISH**: ENCUESTA DE ACEPTACIÓN SOBRE LOS PRODUCTOS Y SERVICIOS DEL PROYECTO C-SERVEES

https://docs.google.com/forms/d/e/1FAIpQLSfEqlWSWk4NlwXyBjjcwYuD-jDwK919Ab93O4mF5O2Qj6MyRw/viewform

- CROATIAN: ANKETA O SOCIO-KULTURNOM PRIHVAĆANJU C-SERVEES PROIZVODA I USLUGA https://docs.google.com/forms/d/e/1FAIpQLSelSPsxU_Dv35wRrfNPZEjUpJvwdDCRR_iMNOEcy1sdYaLYcw/viewform

- ROMANIAN: SONDAJ PENTRU ACCEPTAREA SOCIO-CULTURALA A PRODUSELOR SI SERVICIILOR C-SERVEES https://docs.google.com/forms/d/e/1FAIpQLSdebybYEZ3_pqcjqD5VEGSg8B1V_UShJ-AX63eBAek7ob5d0g/viewform

- TURKISH: C-SERVEES PROJESİ ÜRÜN VE HİZMETLERİNİN SOSYO-KÜLTÜREL KABUL ANKETİ https://docs.google.com/forms/d/e/1FAIpQLSd4hIBPm0GNGsFh8MI6Ajz4btsitn4H5etp0CWzTc30OrlonQ/viewform

In order to get representative results, all the partners and linked 3rd parties were requested to get involved in the promotion. Different channels for promotion activities were developed:

- E-mailing:

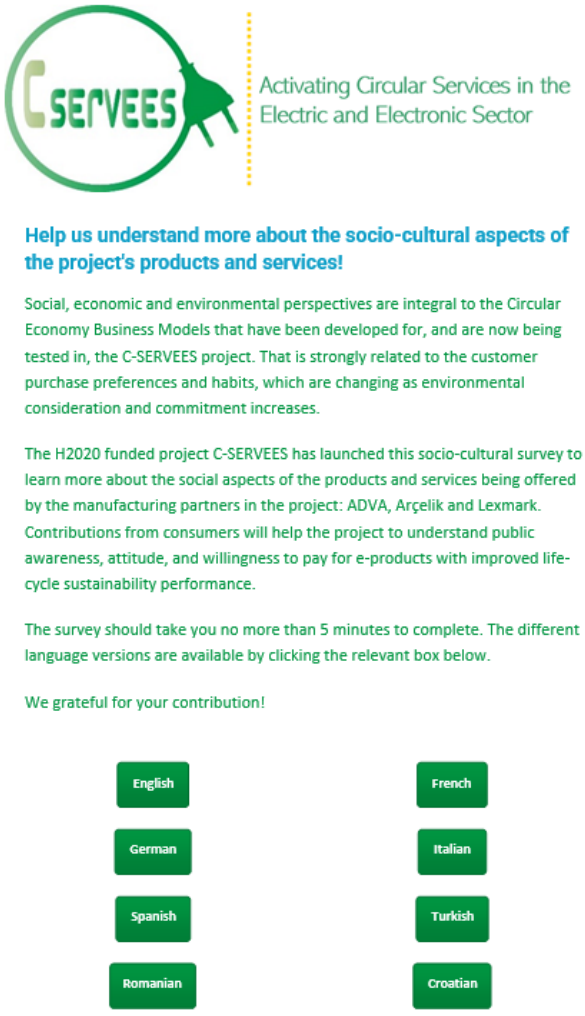

Figure 2.- Image of the C-SERVEES survey promotional e-mail.

- C-SERVEES website:
  The official C-SERVEES website placed a dedicated banner and news for the promotion of the Socio-cultural acceptance survey

https://c-serveesproject.eu/detail_new.php?id_pub=431

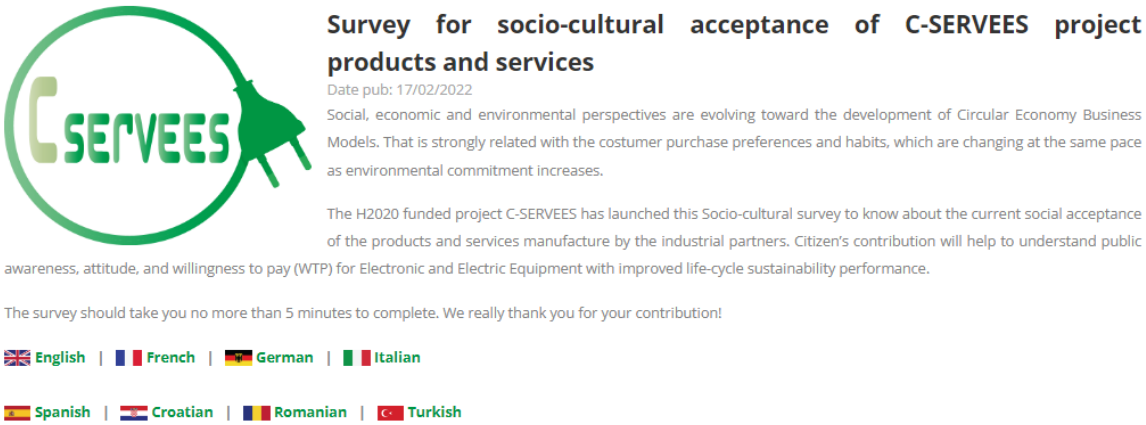

Figure 3. Dedicated post in the news section.

- Social Media:

Different posts publishing the surveys in the 8 different languages were launched through LinkedIn and Twitter C-SERVEES official accounts.

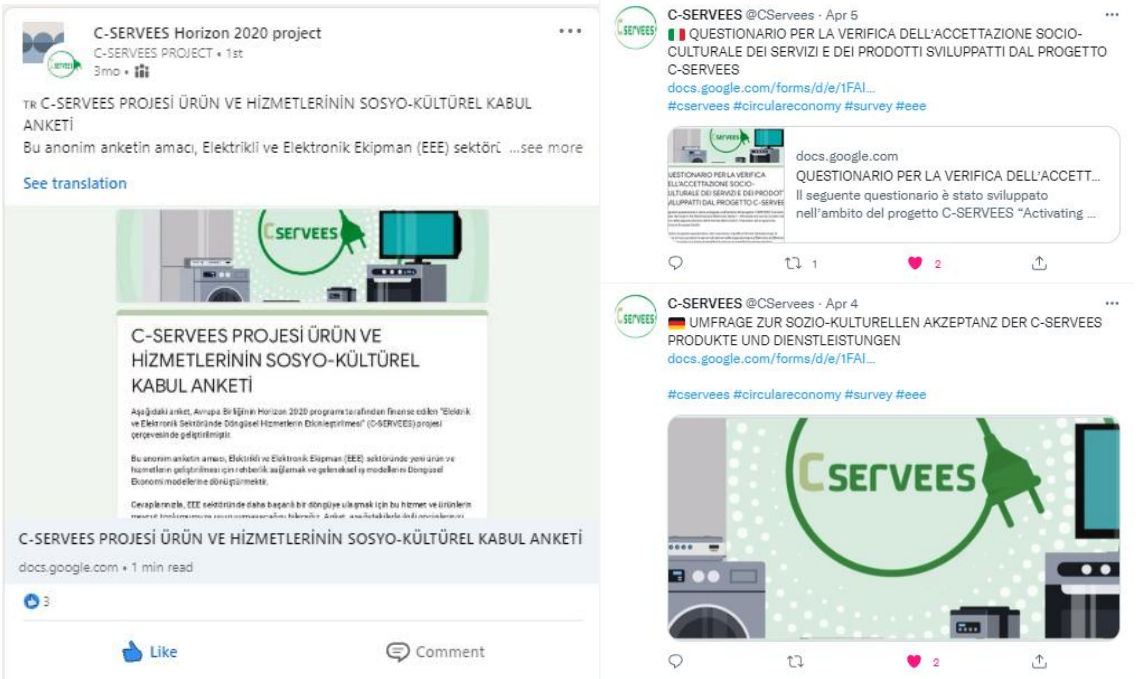

Figure 4.- Posts published in LinkedIn and Twitter accounts

In the table below there are shown some figures related to the communication activities developed by SAT, WP leader of Communication and Dissemination:

Post/Language	Impressions	Likes	Engagements
General Link to Survey	28	1	1
Romanian	79	2	2
Croatian	106	3	3
Turkish	102	3	3
Spanish	179	3	3
Italian	147	4	4
German	107	4	4
French	148	4	4
English/general link	368	5	5

Table 1. LinkedIn analytics

Post/Language	Impressions	Likes	Retweet	Engagements
General Survey	148	2	2	6
Turkish	129	1	1	4
Croatian	66	2	0	3
Spanish	192	2	0	6
Italian	181	2	1	17
German	103	1	0	4
Romanian	51	1	0	2
French	44	2	0	4
English/General Link	419	6	4	20

Table 2. Twitter analytics

- Other channels:

As the target audience of the survey was the society as a whole, other channels were used to promote the survey like WhatsApp, Messenger etc.
Dedicated messages were distributed among personal and professional environments thanks to the collaboration of C-SERVEES partners.

3. Analysis of the results

After gathering for 4 months (from February to June 2022) the responses of the public, next step was the survey data analysis. This is a crucial step for the socio-cultural acceptance analysis which is intended to understand how end users and society are aware of and perceive the problems associated with current WEEE generation and management, as well as their acceptance of the new products and services provided by C-SERVEES.

3.1. Sample description

In many studies, sociodemographic aspects are also considered variables that can directly influence consumer behaviours and have indirect effects on these behaviours through influences on psychological factors. The sociodemographic aspects generally analysed include gender, age, educational qualification and annual income, for that reason almost all of them have been considered in this survey. Kurisu[1] examined several research on the relationships between sustainable behaviours and sociodemographic aspects. However, there is no consistent trend between these.

First, the influence of sociodemographic aspects varies according to time, social situation, and reference behaviour and secondly, it has also been pointed out by many studies that the ability to explain environmentally sustainable behaviour through sociodemographic variables is quite limited ([2],[3]).

However, C-SERVEES partners displayed their effort to cover the biggest amount of population among their countries in order to have a representative sample and consequently, comparative results. At the same time, promotion efforts were also focused to gather the biggest number of responses all over the world. Finally, it was reached a final number of 508 responses.

In the following paragraphs, it has been described the sample of respondents who participated in this anonymous survey. This will enable to be aware of the limitations and coverage of the conclusions developed in the las part of this deliverable.

The sample description will be determined for the following aspects: country of residence, gender, age, education level and family size.

[1] Kurisu, K. Pro-Environmental Behaviors; Springer: Tokyo, Japan, 2015.
[2] Raudsepp, M. Some Socio-Demographic and Socio-Psychological Predictors of Environmentalism. Trames 2001,5, 355–367.
[3] Patel, J.; Modi, A.; Paul, J. Pro-Environmental Behavior and Socio-Demographic Factors in an Emerging Market. Asian J. Bus. Ethics 2017,6, 189–214.

A. Geographical distribution

The following figures represent the geographic distribution of the 508 responses gathered, where the 95% of the responses corresponded to European Union countries but also with the participation of other non-European countries:

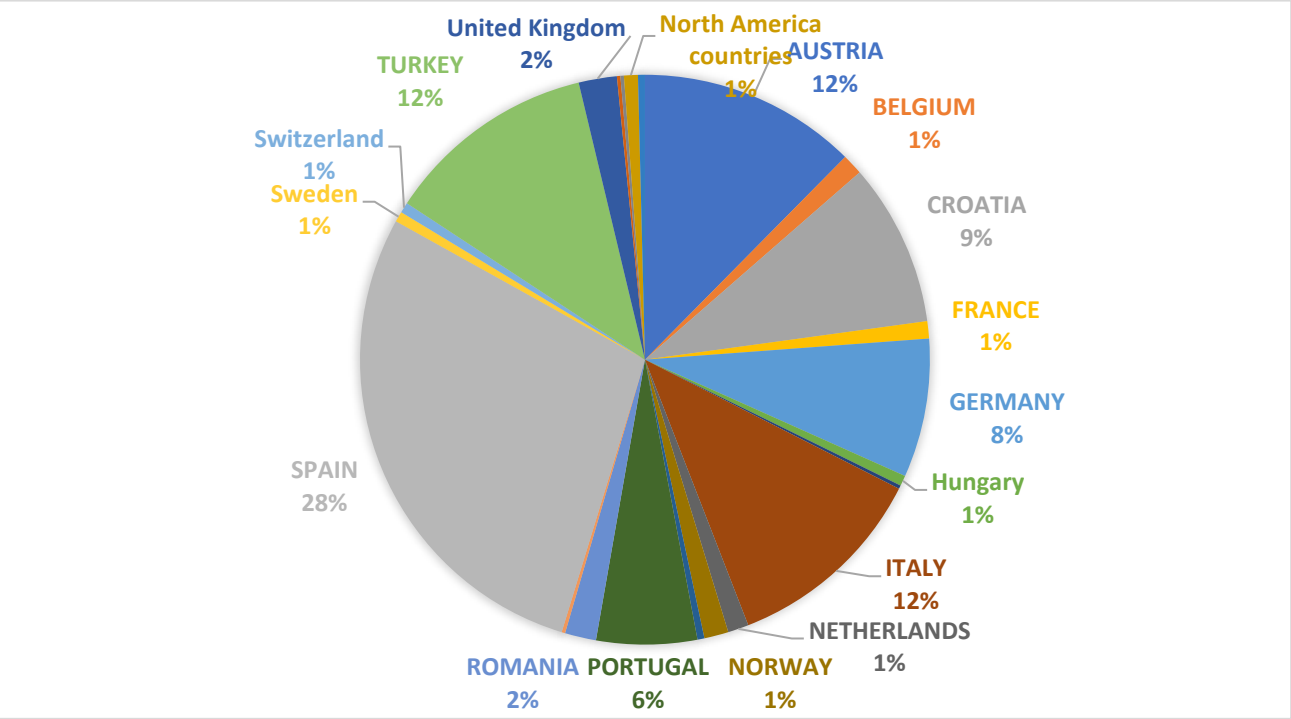

Figure 5: Sample description: Geographic distribution

Figure 6 shows the participation in the different European countries, being the most participative Spain with the 28% of the overall responses.

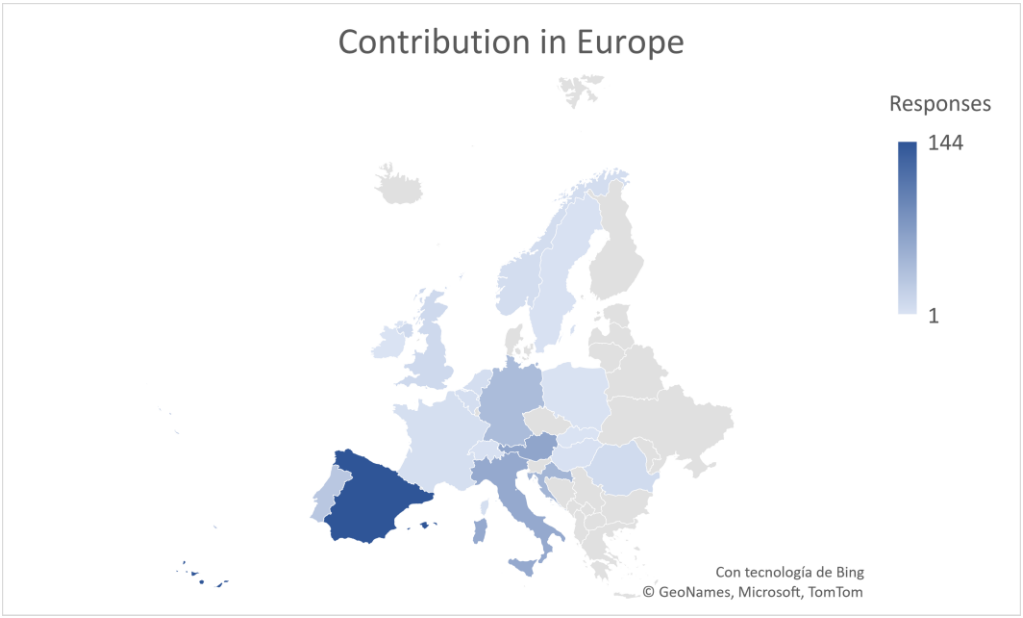

Figure 6: Distribution of responses in Europe

B. Gender

As showed in the next figure, responders of the survey have been **balanced in terms of gender equality** with the participation of 255 men, 249 women and 4 nonbinary/no answer.

This avoids possible gender biases to the results of the C-SERVEES socio-cultural analysis. Furthermore, potential differences (if any) in gender perspective will be analysed in following sections of this deliverable.

Figure 7.- Gender distribution of the survey.

C. Age

Society perception about social challenges have been changed drastically during the last generations. It has been translated into different purchasing habits that may influence in the future business models. The analysis of the sample shows in *Figure 8*, that every range of age has been represented in this survey, with a main participation of the range of people from **35 to 65 years old** which probably is the age range with the highest capacity of electric and electronic equipment acquisition, special of household appliances.

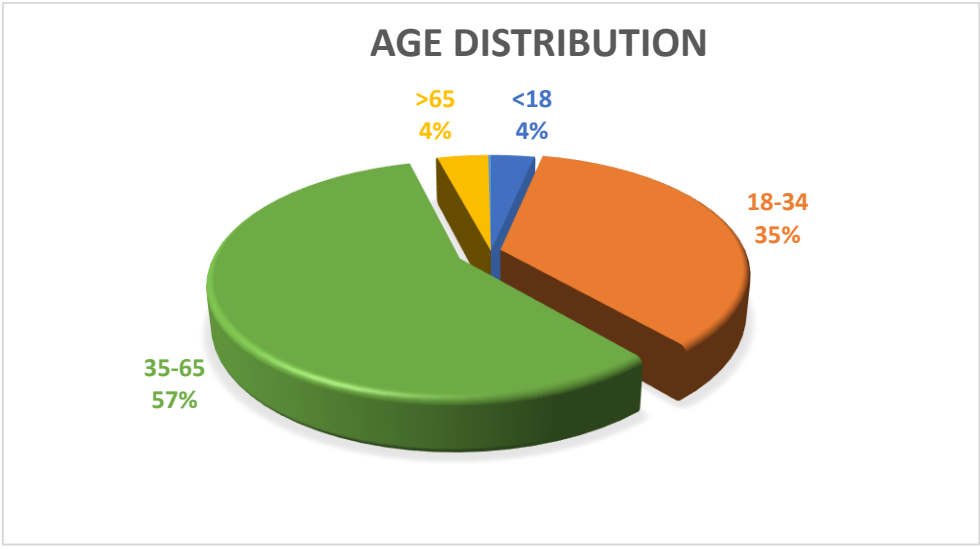

Figure 8.- Age distribution of the survey

D. Education level

Although the public socio-cultural acceptance survey was aimed and promoted for the whole society, it has been detected that finally it reached a high-level education target: 79% of the respondents had Bachelor or Master/PhD level.
It could be probably due to the fact that C-SERVEES social media (main channel for the survey promotion) reaches principally the scientific, educational and industrial sector, which has probably a higher education than the general citizenship.

This sample bias will be taken into consideration in the final conclusions.

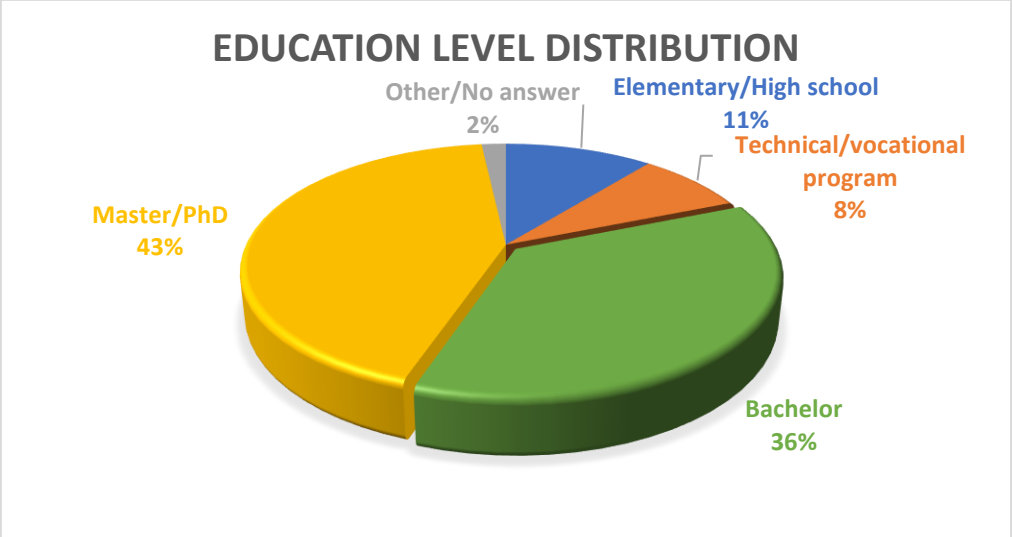

Figure 9.- Education level distribution of respondents

E. Family size

Regarding the distribution of responses according to the family size, there is an equal distribution among the different types of families (with children vs without children) but with the highest participation of people (43%) having a family (single or couple having 1 or 2 children).

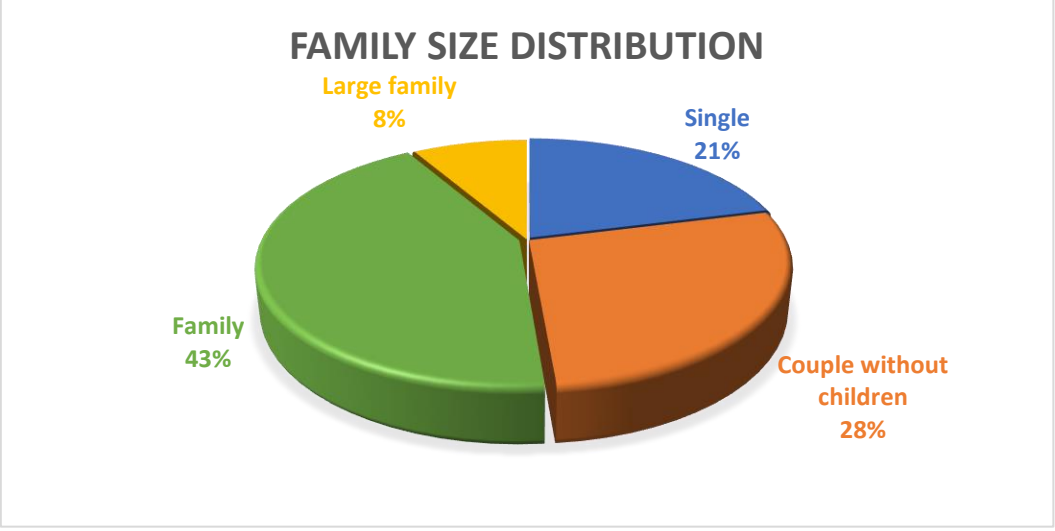

Figure 10.- Family size distribution of respondents

3.2. Social challenges

Knowledge of a problem significantly affects the decision-making process even in the purchasing phase. The main objective of this section is to analyse what is the general perception of the respondents of the survey about some of the social challenges that are identified as barriers of the development of Circular Economy Business Models.

In the question related to the general view about some social challenges related to C-SERVEES products and services: "*Do you agree on the following statements?*". In general, it is showed a general commitment about environmental issues, but also was showed the perception of the respondents that the society has **a lack of knowledge about Circular Economy**, with a **78%** of the responses agreeing. This is particularly interesting considering that the perspective of the results it is from a high-level education public, that would be intended to be more familiarized with this kind of concepts.

Regarding the question *"Actual business models must change into low-carbon and circular ones"*, 61% of the answers strongly agree, with a total of **91% of positive answers**. This result supports the need of change and improvement of the current business models, main objective of C-SERVEES project.

It is also remarkable that **78%** of the respondents somehow agreed that there is a **social trend of replacing products rather than repairing**, but this question had fewer positive answers than the others what could show a change in the general perspective.

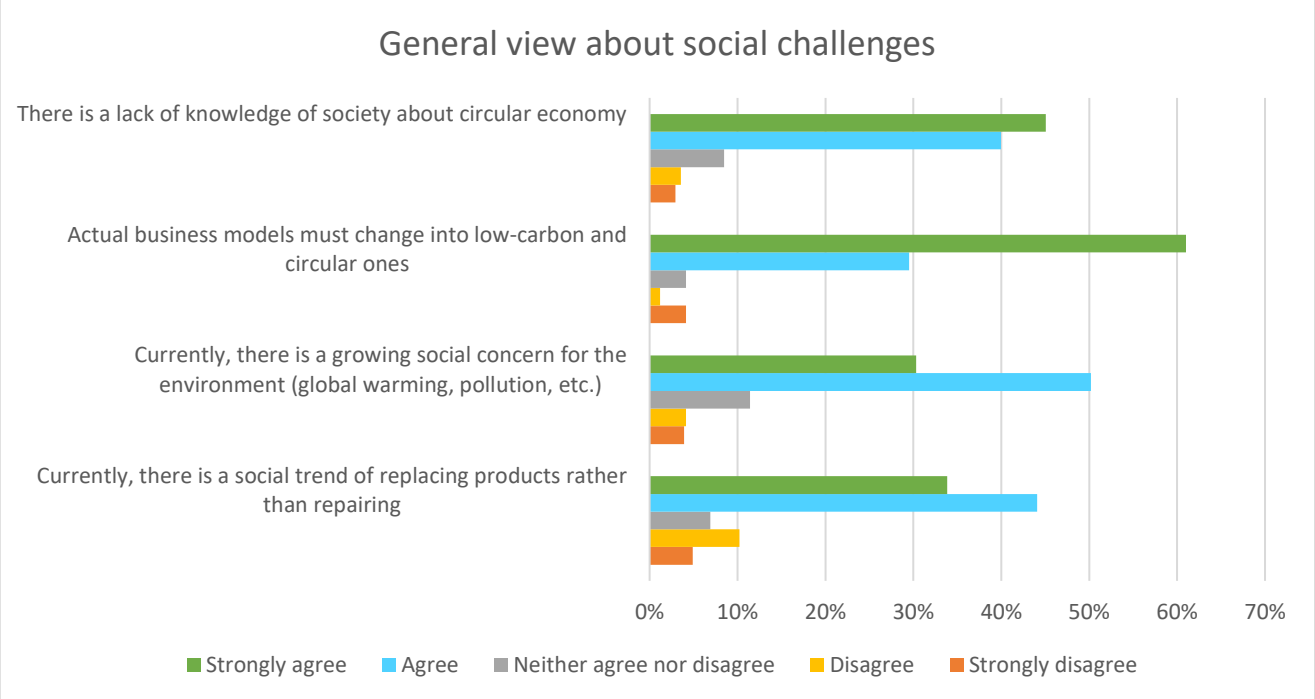

Figure 11.- General view about social challenges

3.3. Purchasing habits and acceptance

This section of the survey was dedicated not only to know what the principal aspects are when buying new Electric and Electronic Equipment but also to understand if these aspects would be different when buying a refurbished or re-used EEE. Differences in the decision aspects will imply a different attitude and willingness to pay (WTP) depending on different products and services.

A. Purchasing habits when buying a new Electric and Electronic Equipment

In this section the respondents were asked about the way in how the different aspects considering at the time of purchase affect in their final decision. Two different questions were asked related to the aspects that influence in the final purchase decision when buying a new EEE.
On one hand, respondents were asked about the aspects that are currently showed and labelled at the appliance stores or online stores and that impact traditionally in the purchasing decision (*Figure 12*).

All the aspects appointed in the survey seemed to have somehow influence for the surveyed. The less scored aspect when buying a EEE was the *"Appearance of the product/design"* with 47% of answers with "Mild influence" but also the "*Consumption of water and/or energy and/or other consumables*" that had the high number of responses with "No influence" (11%).

In the other hand, **the concept *"Price"* was the highest scored by the respondents** (71% answered with "Strong influence"), showing that still the price is a very important aspect to be treated when buying a new EEE. Second in importance, according to the results gathered, the "***quality certifications and duration of warranty***" seems to have a strong influence for the respondents in their purchasing decision with 58% of answers.

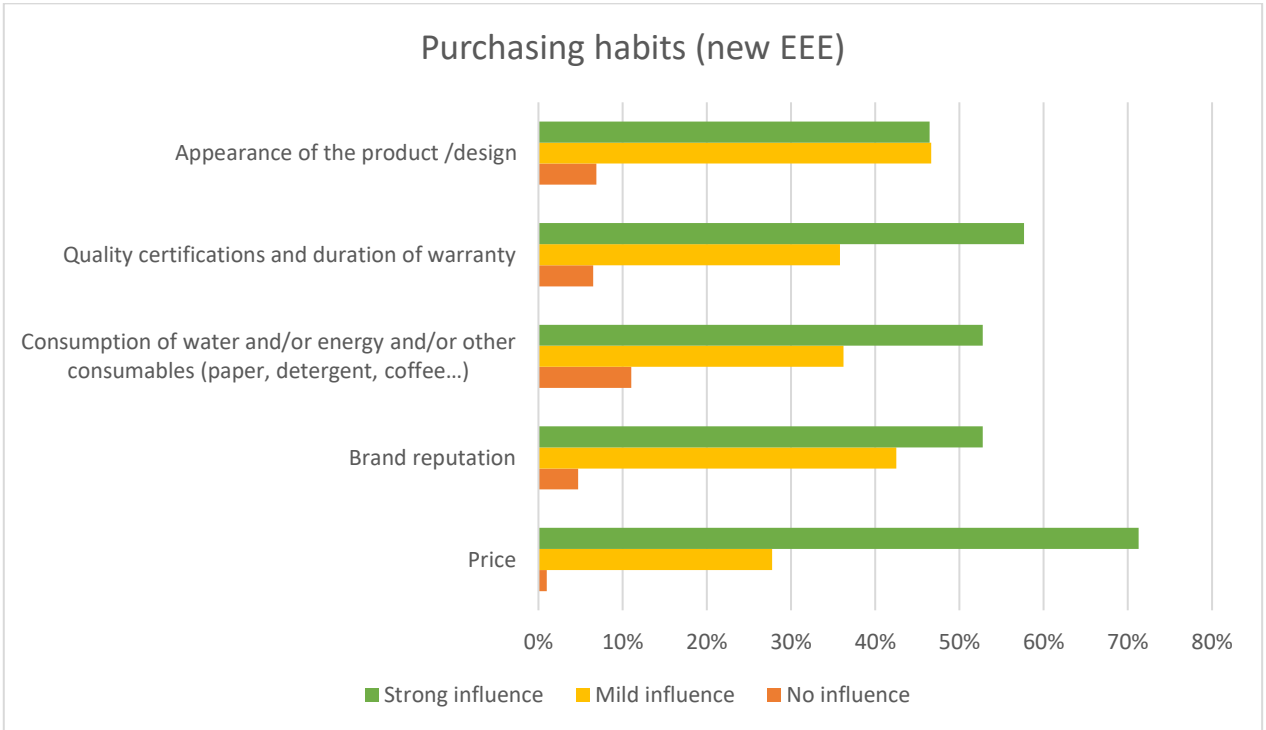

Figure 12.- Influence in purchasing decision when buying new EEE.

By the other hand, respondents were also asked about the information which is aimed to be displayed in the product information proposed if the new services explored by C-SERVEES project reach the market (*Figure 13*).

It is clearly showed that one of **the most valuable information that could be appreciated by the costumers is the one referred to the "*low maintenance and easy reparability of products*",** with 77% of the respondents answering with a "strong influence" in their purchasing decision.

On the opposite side, the aspect concerning the "*recycled content of components (for instance plastics)"* had a lower rate with just 32 % of strong influence, 54% of mild influence and 14% of no influence answers from the respondents.

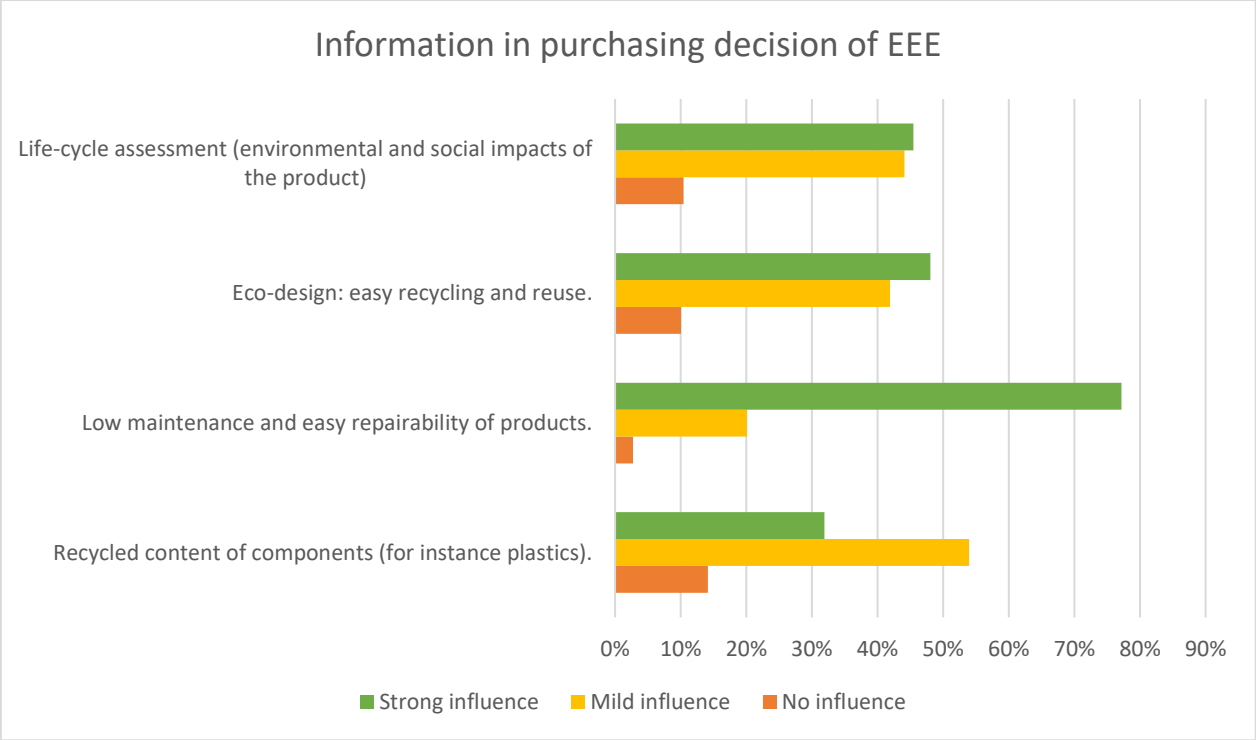

Figure 13.- Other valuable information in purchasing decision.

B. Purchasing habits in re-used and/or refurbished Electric and Electronic Equipment

Taking into consideration that there could be a difference between the perspective and influence when buying new EEE and buying re- used/ refurbished EEE, the same questions were made for this kind of equipment adapted to the reality of this market.

As showed in *Figure 14,* the respondents would be **mainly influenced by the price** (88% with strong influence), at happened with the new EEE but even with high importance. In the second place, according to the results gathered, the factor "*Brand reputation*" would influence when buying a re-used or refurbished EEE.

In the opposite side, the factor "*Cosmetic damages*" was the less rated by the audience in comparison with the rest of the analysed factors.

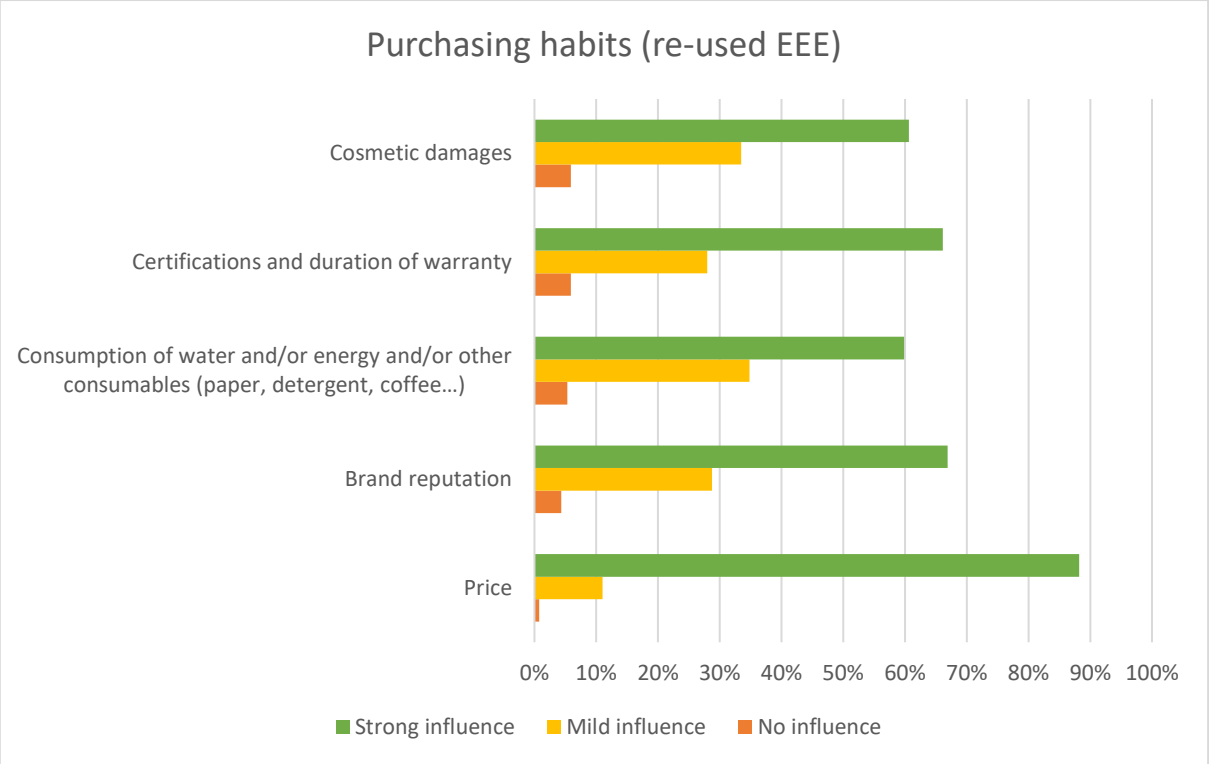

Figure 14.- Purchasing habits in re-used and refurbished EEE

C. Social acceptance in C-SERVEES products and services

In this last section of the survey, the objective was to know if the typology of the EEE would influence in the acceptance of new products or services related with Circular Economy Business Models. It will help to understand if the social acceptance depends on the type of equipment.

According to the results gathered, there is a balanced distribution among the 4 types of products specified: TV and TV sets, large household appliances (washing machines, fridges, etc), Small electronic equipment (cell phones, domestic printers, etc) and small household appliances (coffee machine, microwave oven, etc).

In the question "*Which of the following equipment will you more likely purchase as* ***re-used or refurbished****?", as it is showed in Figure 15, there is a slight difference between the preference of the products no higher than 8 points. The most selected product to be bought as reused or refurbished is Small electronic equipment.*

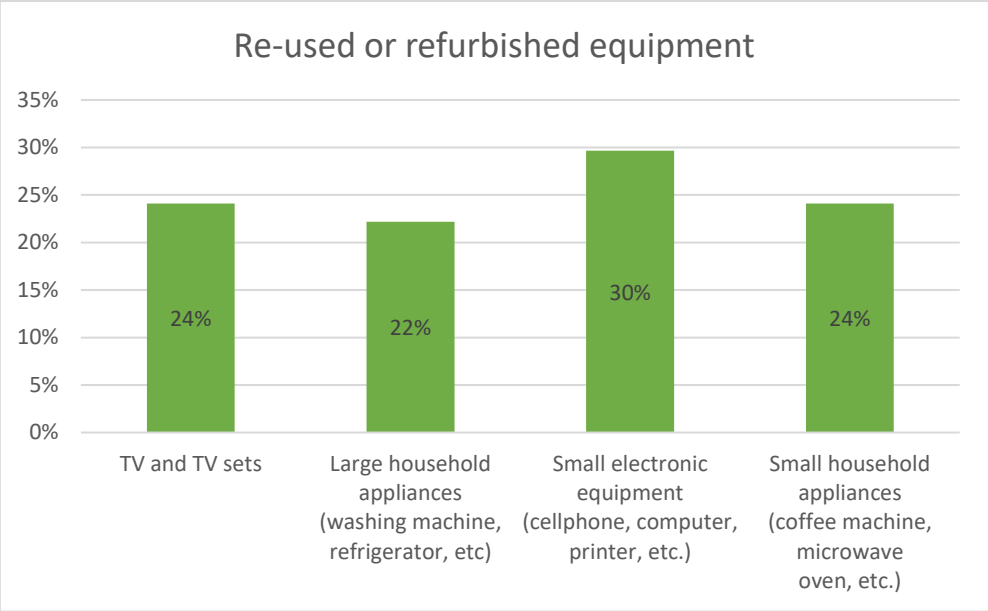

Figure 15. Social acceptance of re-used or refurbished EEE /type of product

In reference at the preference of eco-leasing or pay-per use models, as it is showed in *Figure 16,* it has been declared a **preference for these services in large household appliances** (washing machines, refrigerators, etc). with a 33% of the respondents selecting this kind of products. In second place, with the same percentage (24%), TV and TV sets and Small electronic equipment.

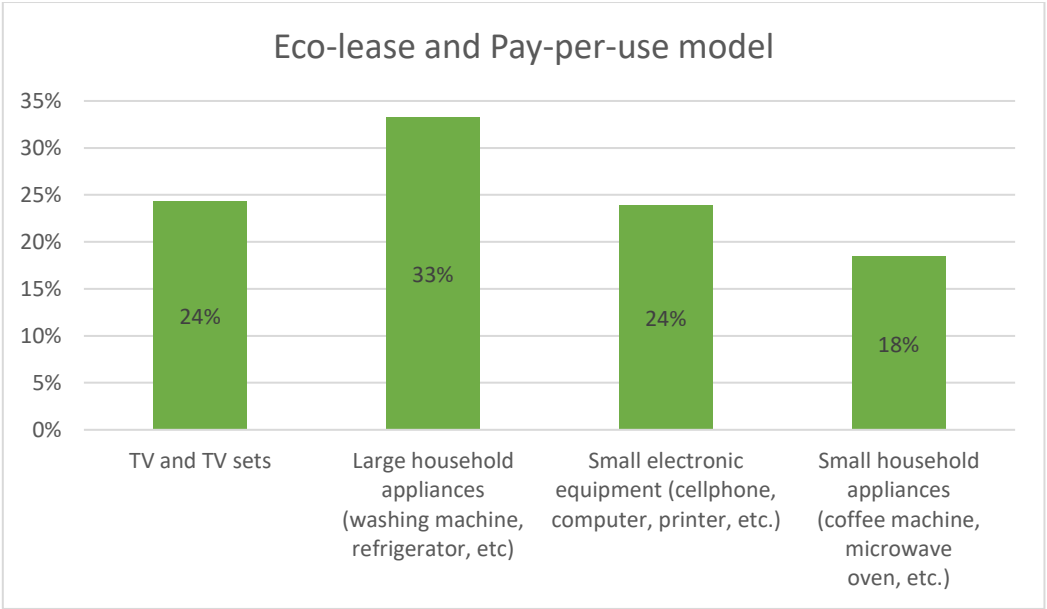

Figure 16. Social acceptance of eco-leasing and Pay-per-use services

4. Gender analysis of the results

Potential differences based on sex and gender were analysed among the survey to know if could exist differences between answers gathered from woman vs men answers.

None of the questions analysed in the social challenges section from a gender perspective had a consisted trend. It was also analysed the gender dimension in other questions, for instance, *Figure 17* shows answers in purchasing habits differentiated in Women on the left side and Men on the right.

It is observed that even in the distribution of answers among No influence/ Mild influence and Strong influences there are not key difference in every factor rated. Just a slight difference could be remarked in the question about influence of the factor "Consumption of water and/or energy and/or other consumables" which has a stronger influence for women than for men (61% vs 44%).

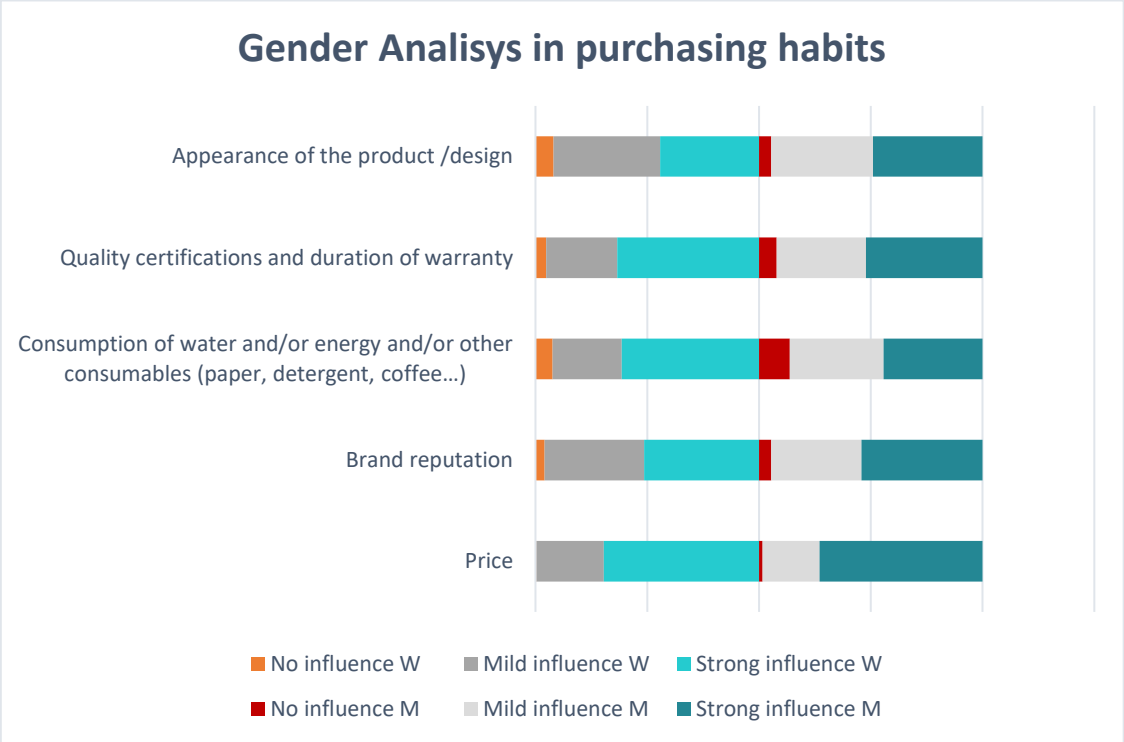

Figure 17. Gender analysis in purchasing habits

5. Conclusions

The analysis of the socio-cultural acceptance of C-SERVEES products and services has been made based on the results gathered during four months through the survey launched in eight different languages with the aim of covering the biggest range of the society (surveys made only in English could skew the answers from a certain part of the population).

Despite the efforts in the dissemination of the survey, some biases must be considered when analyzing the sample description in terms of geographical coverage (95% of the respondents are from the European Union); education level distribution (79% of high-level education responses) and age distribution (18 to 65 years old respondents mainly represented).

According to the study of F. Corsini and N. Marzia[4] who reviewed a high number of papers in this field, there is no consistent trend between sociodemographic variables and circular consumer's behaviour in relation to the purchase, extension of life, and end of life management of electrical and electronic products, so the results gathered in this survey and the conclusions reached are intended to be sufficiently representative of the society despite the potential biases in the sample.

Results related to the general view about social challenges showed that 91 % of the respondents agree or strongly agree that *"Actual business models must change into low-carbon and circular ones"*. This demonstrates a social concern about the necessity of modifying the current lineal business models into Circular Economy Business Models, which is the main objective of C-SERVEES project.

Regarding purchasing habits when buying Electric and Electronic Equipment, the main factor that affects in the decision has been "price", both for new EEE and re-used/refurbished EEE, having a slight big influence when buying the second ones (71 % in new EEE vs. 88% in reused EEE). This shows that the main advantage perceived by the consumers when buying a re-used or refurbished EEE against buying a new one, besides their consciousness about sustainability, is still the price. This conclusion has already been confirmed by other studies about behaviour towards new electronic goods in other countries[5] and also has recently been corroborated by research commissioned by WEEE Ireland[6] for large household appliances, but not by similar surveys in Switzerland, where citizens associate a lower price with lower quality. Switzerland findings could be validated by the survey carried out by C-SERVEES project, however the number of responses from Switzerland (1% of the total) make difficult to have a reliable conclusion about this country in particular.

Considering the findings of this survey related to the influence of price in the purchasing decision of re-used and refurbished EEE goods. It should be an important factor to be taken into account when designing new Circular Economy Business Models.

[4] F. Corsini, N. Marzia Gusmerotti and M. Frey. Consumer's Circular Behaviors in Relation to the Purchase, Extension of Life, and End of Life Management of Electrical and Electronic Products: A Review.. Institute of Management (Sant'Anna School of Advanced Studies)

[5] A. Pawar; B. Sangvikar. Analyzing the Dynamic Behaviour towards Electronic Goods: The Consumer and Sellers Perspective. Journal of Advanced Research in Dynamical and Control Systems (July 2020)

[6] Consumer survey on visible fees. Preliminary findings. Sens e-recycling & WEEE Ireland

Also related to economic reasons, the information that would be more appreciated among the respondents, if available, and that could influence their purchase decision is the information about ***maintenance and reparability of products*** with 77% of respondents selecting a "Strong influence". This factor could be also considered as a financial consideration not related to sustainability factors but that definitely could enhance the acceptance of more sustainable products .

Regarding the preference among the different types of products, the most selected product to be bought as **reused or refurbished are small electronic equipment** (cell phones, domestic printers, etc) with 30% of the answers. In the question related to services of **eco-leasing or pay-per-use model, the most preferred product seems to be the large households' appliances (washing machines, refrigerators, etc)**, with 33% of the answers.

Related to the acquisition of re-used or refurbished products, the study conducted by Young W.[7] provides an interesting overview of behaviours related to the purchase of electrical and electronic products. The authors analyse the purchasing process in relation to sustainable technology products in the UK, adding another variable of interest. In this case, in fact, the situational variables are also analysed as predictors of sustainable consumption. The results showed that every purchase, especially of large electronic equipment such as ovens, refrigerators, etc., is strongly linked to situational factors such as moving and is therefore also connected to the presence of resellers of sustainable products in a neighbouring area. This would be also linked with the preference and social acceptance when choosing sustainable alternatives for new EEE.

The overall analysis of the results gathered by the socio-cultural acceptance survey shows that despite the fact that there is a social awareness about the social challenges related with sustainability, carbon footprint, recycling and other environmental aspects, **price tends to be the main factor of influence in the purchasing of Electric and Electronic Equipment, both new and re-used and refurbished.**

It may also have relation with the preference of the respondents in eco-leasing services or pay-per-use model in large household appliances that normally are the most expensive products in the Electric and Electronic sector and also involve higher maintenance and repairment costs, that would enhance the acceptance of services and products promoted under the framework of C-SERVEES project.

[7] Young, W.; Hwang, K.; McDonald, S.; Oates, C.J. Sustainable Consumption: Green Consumer Behaviour When Purchasing Products. Sustain. Dev. 2010, 18, 20–31.

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