Study to support the Commission's policy development on promoting repair of consumer goods and contracts in the data economy

Part A: Extending useful life of consumer goods
Final report
Annex 1 – data collection (method and results)

Written by Kantar Public, Ramboll, Behavia and Milieu
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KANTAR PUBLIC
BEHAVIA
RAMBOLL
milieu
Law & Policy Consulting

EUROPEAN COMMISSION

Directorate-General for Justice and Consumers
Directorate A — Justice policies
Unit A1 — Digital transition and judicial trainin

E-mail: JUST-A1@ec.europa.eu

European Commission
B-1049 Brussels

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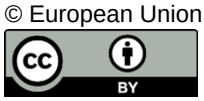

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Introduction

This Annex presents the detailed product selection rationale for the study and the horizontal data collection activities of the study as regards method, questionnaires, and detailed results. The results of the data collection are incorporated in the main results where information is triangulated in the main report, while this Annex presents the results of the data collection activities separately.

The annex presents the following:

	Activities	Aim
Product selection	Literature review	The aim of the product selection was to focus on a representative sample of consumer goods. A selection was needed in order to focus the research, given that the SGD covers many categories of goods and not all could be tested in the project.
Secondary sources	Literature review	The literature review underpinned the preparatory work for the study and product-level results can be found in Annex 2. Key sources and findings fed into the main study and are available in Chapters 3 and 4, namely on the problem definition and the market analysis.
	Google search analysis	The aim of this exercise was to complement the problem definition chapter with information on the frequency to which consumers look for repair services online.
Primary sources	Consumer survey	The aim of the consumer survey was to collect information about consumers' attitudes towards repair and second-hand goods. The consumer survey also tested consumers' views on a number of policy measures.
	Behavioural experiment 1	The first experiment tested consumers' attitudes on a number of measures considered under the legal guarantee. The aim was to understand the extent to which consumers would repair / opt for second-hand goods as a result of the proposed measures.
	Behavioural experiment 2	The first experiment tested consumers' attitudes on several configurations of the right to repair measure. The aim was to understand the extent to which consumers would repair their goods as a result of the measure (and its sub-options).
	Business survey	The business survey collected information from businesses on the current market, problem definition and the policy measures considered for the impact assessment.
	Mystery shopping	The mystery shopping exercise was conducted among traders selling consumer goods online. The results of the exercise fed mainly in the problem definition and the market analysis. The aim was to understand traders' practices when it comes to providing repair solutions to consumers within and outside the legal guarantee.
	Stakeholder interviews	Stakeholder interviews were conducted in two waves. In wave 1, interviews were conducted to fill the information gaps from the literature review. In wave 2, interviews tested stakeholders' views on the policy measures considered for the impact assessment.

1. Study's product selection

Since the various tasks of the study require collection and analysis of data at the level of products, it was decided to focus on a wide selection of consumer products. In order not to overlook any relevant product types, a horizontal approach was chosen, i.e., different product types from all relevant product groups were considered for the research. Focusing on a selection of consumer products ensured that the data collection- and analysis could be carried out with the required level of specification and granularity. Therefore, in the first step, the most relevant and representative product categories in terms of frequency of purchase, relevance for repair and potential to generate significant environmental impacts were identified by analysing relevant policy instruments related to the EU's circular economy objectives. These included:

- the EU´s Circular Economy Action Plan[1] (CEAP) (European Commission, 2020b);
- the EU´s Sustainable Products Initiative[2] (SPI) (European Commission, 2020c); and
- the Ecodesign and energy labelling working plan 2020—2024[3] (European Commission, 2017).

1.1. Selection of product categories

The documents were analysed as regards the product categories and the associated product types covered. The information is summarised in Table 1.

Table 1 - Product categories and product types as identified in the three policy instruments

Policy instrument	Identified Product category	Identified product type (product types which are mentioned in the respective document)
Circular Economy Action Plan (CEAP), Key product value chains	Electronics and ICT	• Mobile phones • tablets • laptops • printers and consumables such as cartridges • chargers • electrical and electronic equipment
	Batteries and vehicles	• batteries • ELVs
	Packaging	• bottles

[1] The European Commission adopted a first circular economy action plan in 2015, which was subsequently amended in 2020 after the adoption of the European Green Deal.

[2] The Sustainable Product Initiative is based on the results of several studies. Amongst others, it refers to the Commission Staff Working document on "Sustainable Products in a Circular Economy" (European Commission, 2019). As this document contains a large amount of information relevant to this project, it was also considered for the product selection.

[3] A preparatory study (European Commission, 2021a) was performed for the Ecodesign and energy labelling working plan 2020—2024. It contains more detailed information on the different types and groups of products addressed in the Ecodesign and energy labelling working plan and was therefore also considered relevant for the product selection of this study.

Policy instrument	Identified Product category	Identified product type (product types which are mentioned in the respective document)
	Plastics	• packaging, construction materials and vehicles • microplastic from textiles and tyres • single-use-plastics, fishing gear
	Textiles	
	Construction and buildings	• Insulation materials
	Food, water, nutrients	
Sustainable Products Initiative (SPI)	Packaging	• Plastic bags • Plastic bottles • Food containers • Wrappers
	Food	
	Electrical and electronic equipment (EEE) and batteries	• White goods (washing machines, dryers and refrigerators)
	Transport and Mobility	• ELVs • Tyres • Oil filters (not a consumer good?) • Waste oil (not a consumer product?)
	Furniture	
	Textiles (apparel and fabrics)	• Garments • Textile parts for footwear • Home interior textiles (e.g. carpets)
	Building and Construction Products	• wood-based products • engineered wood products such as cross-laminated timber or laminated veneer lumber and glued-laminated timber • doors • windows • beams and frames
	Chemical Products	• Paints • Varnishes • Detergents • Cosmetics
Ecodesign and energy labelling working plan 2020—2024; Product Groups	Energy-related products	• Professional laundry appliances • Professional dishwashers • Professional cooking appliances • Low temperature emitters (radiators optimised for <45 °C) • Swimming pool heaters • Small network equipment for home and office use (for internet connection and local network) • Enterprise network equipment (switchers, routers) • Universal external power supplies (common chargers for household and office equipment) • Uninterruptible power supplies (standard systems used in enterprises and data centres) • Industrial smart sensors

In a subsequent step, it was analysed which product categories are included in all three policy instruments. Since the Ecodesign and energy labelling working plan 2020—2024 focuses on energy-related products, the selection is mainly based on common categories of the CEAP and SPI. If certain categories had different titles or names but showed similarities as regards the general description of the category and the types of products contained,

these categories have been identified as common categories. The following table provides an overview of the respective categories or sectors and their coverage within the policy instruments analysed:

Table 2 - Categories included in relevant policy instruments

Category	CEAP	SPI	Ecodesign and energy labelling working plan 2020—2024
Electronics and ICT	X	X	X
Packaging	X	X	
Textiles	X	X	
Building and construction	X	X	
Food	X	X	
Transport and mobility[4]	X	X	
Plastics	X		
Furniture		X	
Chemical Products		X	

The categories as outlined in Table 2 were classified based on their inclusion in the policy instruments analysed. Accordingly, a category was considered Class A if it was included in at least two of the policy instruments. Thus, Class A categories are:

- Electronics and ICT
- Packaging
- Textiles
- Building and construction
- Food
- Transport and mobility

In contrast, Class B categories represent categories which have only been mentioned in one of the policy instruments. These are:

- Plastics
- Furniture
- Chemical Products

[4] It should be noted that the category "transport and mobility" is only included in the SPI. Nevertheless, it was listed as common category as the CEAP includes a category batteries and vehicles. Thus, both categories include vehicles, respectively end-of-life vehicles. In contrast, within the SPI batteries (e.g. for electro-mobility) are included in the category electrical and electronic equipment.

In the next step, it was examined to what extent the individual categories contain product types that can be considered consumer goods. Consumer goods can be defined as products developed and purchased by the average consumer to satisfy a human need or want[5]. Furthermore, the individual categories and associated product types were analysed as regards their degree of repairability.

As regards the categories of Class A, it was decided to exclude the category "Food" as it is not expected to contain product types which can be repaired. In addition, the category "Building and construction" was not further analysed because product types within this category often refer to the material used for building and construction purposes such as wood, steel, or insulation material. These are considered to be less relevant for the average consumer. The category "Packaging" was also excluded since packaging itself does not represent a product or consumer product (European Commission, 2019).

The Class B category "Plastics" was not further analysed for the same reason. Moreover, products within the category "Chemical Products" are rather not suited for reuse, and recycling of chemical products is rather mentioned in the context of the chemical industry (European Commission, 2019). This category was therefore not further investigated due to the limited relevance of reusing or recycling chemical products from a consumer perspective. In contrast, furniture products hold a larger reuse potential and were therefore selected as relevant product group although it was only mentioned within one of the policy instruments analysed (Class B category).

In summary, the following categories were selected:

- Electronics and ICT
- Textiles
- Transport
- Furniture

However, it should be noted that there are considerable overlaps between the different product categories and product types analysed. This is in line with earlier studies focusing on the scoping of product categories and types (European Commission, 2014).

1.2. Selection of product types

While some of the categories, as outlined in the three main policy instruments analysed, revealed a large quantity of examples for product types (e.g. electronics and ICT), other categories contrarily provide a limited number of examples. To this end, a preliminary analysis on the most relevant product types per category was carried out focusing on further existing policy documents, regulations or scientific publications, as well as publications of industrial organisations or NGOs. In consultation with the European Commission, the following prioritisation was made in order to enable an effective and efficient collection and analysis of data on the product level.

- Electronics and ICT: 8 product types of this category were part of the preliminary analysis

[5] Consumer goods as defined by Tomczak et al. 2003; cited in Petersen (2017).

- Textiles: 3 product types of this category were part of the preliminary analysis
- Transport: 3 product types of this category were part of the preliminary analysis
- Furniture: 3 product types of this category were part of the preliminary analysis

The criteria for the selection of product types were mainly based on the following aspects:

- How often are the product types mentioned in the respective documents?
    - If certain product types were mentioned more frequently than others, these product types were assumed to have higher policy relevance for this project.
- Is there any direct information available on the environmental impact or the benefits of repairing certain product types?

The selection of product types is described for each of the categories below.

Electronics and ICT

For the selection of product types within the electronics and ICT category, further relevant documents have been analysed. These included amongst others:

- Circular Consumer Electronics, An Initial Exploration (Ellen MacArthur Foundation, 2018)
- The Global E-waste Monitor 2020: Quantities, flows and the circular economy potential (Forti et al., 2020)
- A New Circular Vision for Electronics Time for a Global Reboot (World Economic Forum, 2019)
- Europe's consumption in a circular economy: the benefits of longer-lasting electronics (European Environmental Agency, 2020)
- European Topic Centre on Waste and Materials in a Green Economy (Bachér et al., 2020)
- Behavioural Study on Consumers' Engagement in the Circular Economy (European Commission, 2018)

A categorization of E-waste systems which is compliant with the WEEE directive adopted by the EU MS consists of the following six categories (Forti et al., 2020; World Economic Forum, 2019): i) Temperature exchange equipment (refrigerators, freezers, air conditioners and heat pumps), ii) Screens and monitors (televisions, monitors) iii) lamps, iv) large equipment (washing machines, dishwashing machines, electric stoves) v) small equipment (microwaves, toasters, video cameras) vi) small IT and Telecommunication equipment (mobile phones, routers, printers, telephones).

The smallest amount of electronic waste is produced by the category of lamps, which therefore will be excluded from the selection of product types. Therefore, five categories of electronics and ICT remain. Since particularly waste from the categories "temperature exchange", and "large and small equipment" has increased, product types of each of these categories should be included. Product types of the small IT and telecommunication category, such as smartphones, tend to be especially short-living products. Therefore, this category is also proposed for further data collection (Bachér et al., 2020).

Based on these considerations, the following allocation of product types between the five identified sub-categories was used for the selection of product types:

- Small IT and Telecommunication equipment: selection of two product types
- Screens and monitors: selection of two product types
- Small equipment: selection of two product types
- Large equipment: selection of one product type
- Temperature exchange equipment: selection of one product type

Based on this allocation, the following product types are proposed for further data collection and analysis:

Table 3 - Selected product types within the category Electronics and ICT

Sub-group	Selected product type	Rationale for selection
Temperature exchange equipment	Refrigerators[6]	• There is an increasing number of large household appliances which are disposed of early in their service life (European Commission, 2019)
Large equipment	Washing machines	• Washing machines are part of the case studies carried out by Bachér et al. (2020). • In the EU there are over 200 million washing machines and 92 % of households have one • There is an increasing number of large household appliances which are disposed of early in their service life (European Commission, 2019)
Small equipment	Vacuum cleaners	• According to Bachér et al. (2020), vacuum cleaners are typical products which are replaced prematurely. • Vacuum cleaners are part of the case studies carried out by Bachér et al. (2020) • There is a large potential for repairing vacuum cleaners (European Commission, 2018)
	Microwaves	Microwaves are listed in studies which have been identified as being relevant for this project such as Forti et al. (2020).
Small IT and telecommunication equipment	Mobile phones/ Smartphones	• Smartphones are mentioned in various studies which have been identified as being relevant for this project such as those published by the Ellen MacArthur Foundation (2018) and Bachér et al. (2020). • According to Bachér et al. (2020), smartphones are typical products which are replaced prematurely. • Swift innovation cycles of smartphones (European Commission, 2018).
	Printers	Printers are mentioned in various studies which have been identified as being relevant for this project such as those published by the Ellen MacArthur Foundation (2018), the European Commission (2018, 2020a), Bachér et al. (2020) and Forti et al. (2020).
Screens monitors, and equipment containing screens	Television sets (televisions)	• Televisions are part of the case studies carried out by Bachér et al. (2020). • 95 % of EU households own at least one television (European Commission, 2018). • Televisions reveal a short innovation cycle (European Commission, 2018).
	Laptop computers (laptops)	• From a consumer perspective, laptops are more likely to break down than other electronic devices (European Commission, 2018). • Extending the lifetime of laptops is assumed to lead to a considerable reduction of CO2 emissions Bachér et al. (2020). • According to Bachér et al. (2020), laptops are typical products which are replaced prematurely.

[6] It should be noted that refrigerators are listed under large household appliances in the WEEE Directive.

Textiles

For the selection of product types within the textile category, further relevant documents have been analysed. These include amongst others:

- A new textiles economy: Redesigning fashion's future (Ellen MacArthur Foundation, 2017)
- Vision of a circular economy for fashion (MacArthur & McCartney, 2017)
- The Jeans Redesign Guidelines (Ellen MacArthur Foundation, 2020)
- Paving the way for a circular economy: insights on status and potentials (European Environmental Agency (EEA), 2019)
- Textiles in Europe's Circular Economy (European Environmental Agency, 2020)
- Textiles and the environment in a circular economy (Manshoven et al., 2019)
- Fashion CEO Agenda. Priorities for a prosperous Industry (Global Fashion Agenda, 2021)
- Circular Economy Perspectives in the EU Textile sector (Köhler et al., 2021)

Many of the above publications refer to three different types (or sub-categories) of textiles including i) garments/clothing, ii) household textiles and iii) footwear (European Environmental Agency (EEA), 2019; Köhler et al., 2021; Manshoven et al., 2019). This is in line with the relevant types of products addressed in the SPI and also refers to the classification of individual consumption according to purpose (COICOP)[7]. Furthermore, textiles are produced for industrial and technical purposes such as medical textiles, nets or ropes. However, as this study focuses on consumer goods, these textile products were not further taken into account. In Europe, the overall consumption of clothing in terms of weight is much higher than the consumption of household textiles[8]. Therefore, the following product types are proposed for further data collection and analysis:

Table 4 - Selected product types within the category Textiles

Sub-group	Selected product type	Rationale for selection
Garments/Clothing	Clothing	Garments and clothing are mentioned in various studies which have been identified as being relevant for this project, such as those published by the Ellen MacArthur Foundation (2017, 2020), the EEA (2019) and the study of Köhler et al. (2021). For the purpose of the estimates in the economic/environmental models, jackets and blazers were used for the category of clothing.
Household textiles	Carpets	Carpets are mentioned in several reports which have been identified as being relevant for this project, including those of the European Commission (2019) and the studies of Manshoven et al. (2019) and Köhler et al. (2021).

[7] The Classification of individual consumption by purpose, abbreviated as COICOP, is a classification developed by the United Nations Statistics Division to classify and analyse individual consumption expenditures incurred by households, non-profit institutions serving households and general government according to their purpose. This includes the following domains: clothing (3.1), footwear (3.2) and household textiles (5.2). (Manshoven et al., 2019)

[8] In 2018, consumption of household textiles and clothing was 5.4 million tonnes. Thereof, consumption of clothing amounted to ca 4.4 million tonnes (81 %) and household textiles to ca. 1 million tonnes (19%) (Köhler et al., 2021).

		The EU is one of the largest producers of carpets (European Commission, 2019).
Footwear	Shoes/Footwear	Footwear/shoes are mentioned in numerous reports and studies which have been identified as being relevant for this project, such as those published by the European Commission (2019), Manshoven et al. (2019), EEA (2019), the Ellen MacArthur Foundation (2020) and Köhler et al. (2021).

Transport/Vehicles

As regards the category "Transport/Vehicles", the initially analysed policy instruments only refer to a limited number of product types, such as cars, tyres and other products which were not considered as consumer goods (e.g., waste oil). Therefore, further publications have been analysed including the following:

- Sustainable and Smart Mobility Strategy – putting European transport on track for the future (Keifer & Effenberger, 1967)
- Circular Economy in cities. Factsheet: Urban mobility (Ellen MacArthur Foundation, 2019)
- Framing Electric Mobility for Urban Sustainability in a Circular Economy Context: An Overview of the Literature (Leal Filho et al., 2021)
- European Mobility Atlas. Facts and figures about transport and mobility in Europe (Becker et al., 2021)
- A Policy Brief from the Policy Learning Platform on Low-carbon economy (Morisson, A. & Pattinson, 2019)
- The International Council on Clean Transportation (ICCT) (2020). European Vehicle Market statistics. Pocketbook 2020/2021. (Mock, 2019)

Besides fossil fuel-powered vehicles, a major focus within the category "Transport/Vehicles" must be drawn to e-mobility as it one of the most promising technological solutions for the decarbonisation of transport (Morisson, A. & Pattinson, 2019). Different types of low-emission vehicles including electric cars, e-buses, e-bicycles, e-scooters, electric trams and e-ferries are increasingly being used for achieving climate targets and a more sustainable transport sector (Leal Filho et al., 2021). Since this study focuses on consumer goods, the most relevant types of these low-emission vehicles are electric cars, e-bicycles and e-scooters that consumers can purchase and may need to eventually repair.

The European bicycle industry sells approximately 20 million bicycles per year. Thereof, circa 17% (3.4 mio. bicycles) are e-bicycles (Becker et al., 2021). Furthermore, the e-bicycle industry is expected to grow significantly until 2030 to 13.5 mio. units sold per year (Becker et al., 2021). Therefore, bicycles and e-bicycles are considered separately.

In comparison, 15.5 mio. new cars were registered in the EU in 2019 (Mock, 2019). With 681 cars per thousand inhabitants, Luxembourg is the country with the highest number of passenger cars per inhabitant in the EU (Eurostat, 2019). Concerning mopeds and motorcycles, Greece has the highest number with 150 mopeds and 100 motorcycles per 1000 inhabitants (European Commission, 2021b). Based on this data, it is assumed that the number of mopeds and motorcycles per 1000 inhabitants in the EU is smaller than the number of cars per 1000 inhabitants. Therefore, it was decided to exclude mopeds and motorcycles from the further analysis.

Based on the information provided in the studies assessed and the consumption data, the following product types are proposed for further data collection and analysis:

Table 5 - Selected product types within the category Transport

Selected product type	Rationale for selection
Cars	• Cars including electric cars are mentioned in various studies which have been identified as being relevant for this project, such as those published by the Heinrich-Böll-Stiftung (2021), Morisson, A. & Pattinson (2019), the Ellen MacArthur Foundation (2019) and ICCT Europe (2019). • In 2019, there have been 15.5 mio. New car registrations in Europe ICCT Europe (2019).
E-Bikes	• E-Bikes are mentioned in various studies which have been identified as being relevant for this project, such as those published by the Heinrich-Böll-Stiftung (2021), Interreg Europe (2019) and the Ellen MacArthur Foundation (2019). • The importance of the e-bicycle industry is expected to grow in the future (Heinrich-Böll-Stiftung, 2021).
Bikes	• Bikes are mentioned in various studies which have been identified as being relevant for this project, such as those published by the Ellen MacArthur Foundation (2019), the Heinrich-Böll-Stiftung (2021), and Morisson, A. & Pattinson (2019). • The European bicycle industry sells around 20 mio. Bicycles per year (including e-bicycles) (Heinrich-Böll-Stiftung, 2021).

Furniture

No specific examples for product types within the category "furniture" could be identified within the three policy instruments analysed. Therefore, for selecting relevant product types, further sources were analysed including:

- The EU furniture market situation and a possible furniture products initiative (Renda, 2014).
- Circular Economy Opportunities in the Furniture Sector (Forrest et al., 2017).
- Circular Economy in the Furniture Industry: Overview of current challenges and competences needs (Erasmus+ Programme of the Europen Union, 2017),
- Revision of EU Ecolabel criteria for furniture products (European Commission. Joint Research Centre., 2017)
- Revision of the EU Green Public Procurement (GPP) criteria for Furniture (European Commission. Joint Research Centre Science Hub, 2017)
- Potential Ecodesign Requirements for Textiles and Furniture (Bauer et al., 2018)

The study of Renda (2014) provides an overview of the information requirements associated with existing mandatory and voluntary schemes in force in different EU MS and the requirements to be fulfilled in eco-labels for furniture. Concerning the range of products, most of these requirements relate to "All furniture", however some requirements address a more specific product range including wooden furniture, upholstered furniture and bed mattresses (Renda, 2014). Wooden furniture, bed mattresses and kitchen units account for a considerable proportion of total furniture consumption in the EU (Forrest et al., 2017). Kitchen units are mainly composed of wood and chip board and were therefore not regarded as a separate product type for the purpose of this study (Forrest et al., 2017). Based on the product ranges outlined in the study of Renda (2014) and furniture products addressed in further relevant studies analysed, the following product types are proposed for further data collection and analysis:

Table 6 - Selected product types within the category Furniture

Selected product type	Rationale for selection
Wooden furniture	• Most of the refurbishment/repair options described in the study by the European Commission (2017) refer to furniture containing wood as material • Wooden furniture is mentioned in various studies which have been identified as being relevant for this project, such as those published by FURN360 (2017), the European Commission (2017), Forrest et al. (2017) and Renda (2014).
Upholstered furniture	• Upholstered furniture is mentioned in various studies which have been identified as being relevant for this project, such as those published by FURN360 (2017), the European Commission (2017), Forrest et al. (2017) and Renda (2014). • The study of European Commission (2017) includes "Reupholstering" as an option for refurbishment/repair of upholstered furniture.
Metal furniture	• Metal is the second most commonly used material in the furniture industry (European Commission. Joint Research Centre Science Hub, 2017). • Besides kitchen furniture, wooden furniture and mattresses, metal furniture represents the largest category in terms of furniture consumption (Forrest et al., 2017).

1.3. Final selection of products

As a last step, a more specific selection of product types per category was carried out to arrive at a final selection of popular consumer products for analysis under subsequent tasks in the project.

In coordination with the European Commission and based on various considerations, notably the criteria set out in the table 7 below, the number of selected products was distributed as follows:

- Electronics and ICT: 4 product types of this category[9];
- Textiles: 2 product types of this category;
- Transport 1 product type of this category; and
- Furniture 1 product type of this category.

This selection includes products that are clearly affected by the potential problem of premature disposal of goods, which could be effectively addressed by potential EU-wide measures. To this end, the project team applied a set of weighted criteria which are presented in the table below. Each of the product categories was ranked according to the listed criteria and the scores of 0-3. The final score is provided in table 18.

Table 7 - Applied product selection criteria

Criterion	Explanation	Weighting range
Limited useful lifetime	The estimated extent to which product design or manner of consumption lead to a limited useful lifetime per se. In other words, the product is destined to have a limited lifetime.	0: useful lifetime is more than expected 1: useful lifetime is acceptable 2: useful lifetime is short due to product/material properties

[9] 2 ICT and 2 household appliance products

Criterion	Explanation	Weighting range
		3: useful lifetime is short which might be likely to be caused by planned obsolescence
Limited use of average useful lifetime	While a product may have, on average, a considerable useful lifetime, actual consumption time may be limited to factors such as consumer preferences, fashion and competing products.	0: use of useful lifetime is more than expected 1: use of useful lifetime is acceptable 2: use of useful lifetime is short due to one specific factor 3: use of useful lifetime is short due to several specific factors
Environmental impacts	The estimated extent to which limited useful lifetime or limited consumption time leads to environmental impacts such as: • Loss/inefficient use of resources; • High carbon footprint; • Inefficient water use; and • Emissions of hazardous substances.	0: no impacts were identified 1: 1-2 impacts were identified 2: 3-4 impacts were identified 3: >4 impacts were identified
Economic impacts	The estimated extent to which limited useful lifetime or limited consumption time leads to economic impacts such as: Lost financial value (e.g. in terms of resource value); and Increased sales of products.	0: no impacts were identified 1: 1-2 impacts were identified 2: 3-4 impacts were identified 3: >4 impacts were identified
Social impacts	The estimated extent to which limited useful lifetime or limited consumption time leads to social impacts such as: • Increase/decrease in employment; and • Pressure on human rights and labour rights in the supply chain.	0: no impacts were identified 1: 1-2 impacts were identified 2: 3-4 impacts were identified 3: >4 impacts were identified
Scale of the product stream (including future developments)	The volume of the product type placed on the market in the EU (annually), relative to other products in the same category. This may provide an idea of the scale of the environmental, economic and social impacts.	0: volume seems negligible for EU market 1: volume is moderate 2: volume is rather high

Criterion	Explanation	Weighting range
		3: volume is very relevant for EU market
Representativeness for category	The estimated extent to which findings regarding the product type may lead to insights concerning the whole product category.	0: product is not representative for other products of same category 1: product is partly representative for other products of same category 2: product is rather representative for other products of same category 3: product is very representative for other products of same category

With regard to the applied criteria, it should be noted that the project team decided to give "bonus points" to environmental, economic or social impacts which are found to be especially profound for certain products. This approach accounts for the fact that a mere counting of impacts does not sufficiently reflect the relative weight of one impact compared to other ones. For example, various environmental impacts associated with one product could, in combination, be less severe than one identified heavy impact associated with another product. The overview of the assessed products in Annex VI to this report indicates the cases in which bonus points were given.

Finally, it should also be noted that aspects of an assessed product (e.g. economic impacts or average useful lifetime) for which data was not available were given fewer points. One main advantage of this approach is that it takes into account the availability of data and thus the feasibility of further research on a product in subsequent tasks of this project.

Table 8 below provides an overview of the results for every assessed product, including a final score. As becomes clear from the table, the following products are selected for further assessment in subsequent tasks under this project:

- Mobile phones/Smartphones;
- Televisions;
- Refrigerators;
- Laptops;
- Clothing;
- Shoes/footwear;
- Cars; and
- Wooden furniture.

Table 8 - Overview on final selection of products. The table indicates individual results and a final score of each product.

	Limited useful lifetime	Limited use of average useful lifetime	Environmental impacts	Economic impacts	Social impacts	Scale of the product stream	Represen-tativeness for category	Final score
Electronics and ICT								

	Limited useful lifetime	Limited use of average useful lifetime	Environmental impacts	Economic impacts	Social impacts	Scale of the product stream	Representativeness for category	Final score
Mobile phones/ Smartphones	3	3	3	2	2	3	2	18
Televisions	1	3	3	2	0	3	2	14
Vacuum cleaners	1	3	2	1	0	2	1	10
Washing machines	1	1	1	1	1	1	1	7
Refrigerators	1	2	2	1	1	3	1	11
Laptops	3	2	3	2	1	3	1	15
Printers	2	2	2	1	1	1	1	10
Microwaves	1	1	1	1	1	2	1	8
Textiles								
Clothing	2	3	3	2	2	3	2	17
Carpets	1	1	1	2	2	1	1	9
Shoes/ footware	1	3	2	1	1	3	1	12
Transport								
Cars	1	1	3	2	2	3	0	12
E-Bikes	2	0	2	1	1	2	1	9
Bikes	2	1	1	1	1	2	1	9
Furniture								
Wooden furniture	2	1	1	1	1	3	0	9
Upholstered furniture	0	2	2	1	1	1	0	7
Metal furniture	0	1	1	1	1	1	0	5

Legend

Red cell: These cells indicate the highest numbers within one category (according to number of products to be selected), i.e., they will be selected for further analysis.

Green: These cells indicate the lowest numbers within one category (according to number of products to be selected), i.e., they will not be selected for further analysis.

2. Horizontal data collection activities

The following sections provide a summary of our approach to different horizontal data collection activities. The latter is explained by the fact that data collection activities aimed at gathering inputs that fed across all chapters of the study.

To answer the study's research questions, the study used both secondary and primary data collection methods. The secondary sources were primarily used in the problem definition stage of the project (see Chapters 3 and 4 of the main report). The results from the secondary sources were complemented with results from the primary data collection activities, which included: consumer survey, behavioural experiments, business survey, mystery shopping and stakeholder interviews. The figure below provides an overview of the data collection methods and sample size:

Figure 1 - Overview of the primary data collection methods deployed in the study

	TARGET GROUP	GEOGRAPHICAL COVERAGE	PRODUCT COVERAGE	SAMPLE SIZE	RESULTS FEEDING INTO …
Literature review	-	EU-wide, non-EU	Phones, TVs, Fridges, Laptops, Clothing, Shoes, Cars, Wooden furniture	-	Problem definition Market analysis
Mystery shopping	Retailers	BG, EE, FR, DE, GR, HU, IT, NL, PL, RO, ES, SE	Phone, Shoes, Fridge	**600** observations (50 per country)	Problem definition
Stakeholder interviews	NGOs, Business associations, consumer associations	NL, FI, UK, DE, SE, EU associations	Horizontal	**21** qualitative interviews	• Problem definition • Measures analysis: M1, M2, M3, M4, M7, M8, M9, M11, and measures discarded at an early stage
Business survey	Businesses: manufacturers, retailers, repairers	BG, EE, FR, AT, GR, HU, IT, NL, PL, RO, ES, SE	Phones, TVs, Fridges, Laptops, Clothing, Shoes, Cars, Wooden furniture	**80** full responses **124** partial responses (almost complete) **160** partial responses (problem definition)	• Problem definition • Measures analysis: M1, M2, M3, M4, M7, M8, M9, and measures discarded at an early stage
1st consumer survey and integrated experiment	Consumers	FR, DE, GR, HU, IT, NL, PL, RO, ES, SE	**Consumer survey:** Phone, TVs, Fridge, Laptop, Clothing, Shoes, Cars, Wooden furniture **Experiment (integrated in the survey):** Phone, Fridge, Shoes	**1000** per country	• Problem definition • Measures analysis: M3, M4, M7, M11, and measures that were discarded at an early stage
2nd consumer experiment	Consumers	FR, DE, GR, HU, IT, NL, PL, RO, ES, SE	Phone, Fridge, Shoes	**800** per country	Measures analysis: M9 (different configurations)

M1: Repair as primary remedy
M2: Preference for repair in a proportionality test
M3: Interruption/Suspension of the legal guarantee period
M4: Extending the legal guarantee period
M7: Aligning the legal guarantee period for refurbished second-hand goods with new goods
M8: Replacement with refurbished goods
M9: Right to repair
M11: Issuing a repair quote

2.1. Data gathering (secondary sources)

Various tasks of this study required a structured and efficient collection and processing of data. To this end, the project team has reflected internally on the required data for the various tasks, as well as the most suitable related data collection strategies. The objective of the literature review (and the first wave of expert/stakeholder interviews) was to collect data for Chapters 3 and 4 of the main report (problem definition).

The results of the first wave of interviews[10] and literature research were used as a basis for a more comprehensive and in-depth literature review and data gap analysis. For example, the preliminary interviews collected information on the problem definition which allowed to understand data gaps. These data gaps were filled – to a limited extent – through additional literature (see Annex 2), while others were answered through other primary data collection methods (e.g., consumer survey, business survey).

To this end, different literature databases including SCOPUS[11], Sciencedirect[12], Wiley Online library[13] and Google Scholar[14] were searched for relevant publications. In addition, relevant articles published on the website of the PLATE conference[15] as well as the literature recommended by the interview partners were considered. Further relevant publications were identified based on the snowballing[16] technique.

[10] See Chapter 2.8.

[11] https://www.scopus.com/home.uri

[12] https://www.sciencedirect.com/

[13] https://onlinelibrary.wiley.com/

[14] https://scholar.google.com/

[15] https://www.plateconference.org/plate-2023-conference/

[16] See on snowballing method: https://libguides.rug.nl/c.php?g=470628&p=3218096#:~:text=The%20snowball%20method%20is%20a,subject%20as%20a%20starting%20point.&text=The%20advantage%20of%20the%20snowball,subject%20quickly%20and%20relatively%20easily.

2.2. Google search trends

2.2.1. Method

Repair rates are influenced by consumers' willingness to repair their defective products instead of replacing them. To see the extent to which consumers seek repair, the team analysed Google search trends[17] across the 12 countries covered in the study, over the period of one year.[18]

2.2.2. Results

This data shows that there are high volumes of searches[19] made to find information about reparations of large household appliances as well as smaller electronic devices. While the number of searches is not equivalent to the number of persons searching (one person is likely to make multiple searches) it still shows that substantial volume of people across the 12 countries are searching online for solutions to get their goods repaired.

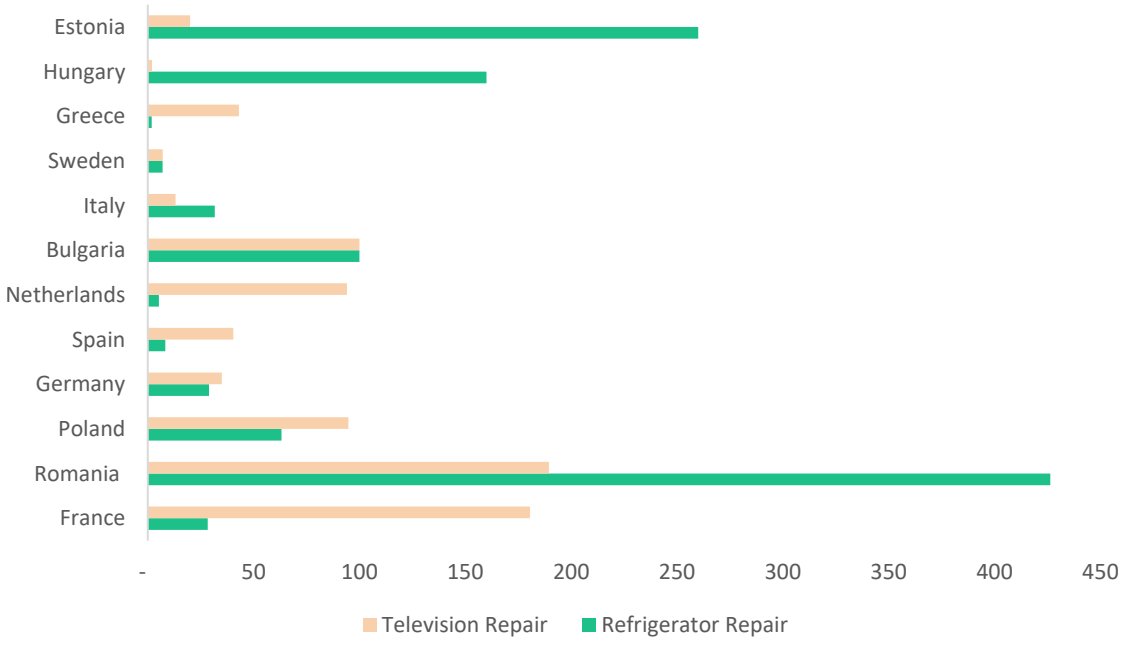
The results vary greatly from one country to another but so does the country population size (in other words it is expected that the search volume would be higher in large countries). The figure below shows the search volume per 1 million inhabitants for household appliances. The word combination "Television repair" has been widely search especially in France, Romania, Bulgaria, Netherlands, and Poland. Yet, very limited results have been found in Hungary and Sweden. "Refrigerator Repair" is a term searched more in Romania with an average of 426 search volume per 1 million inhabitants. On the contrary, the results in Spain, Netherlands, Sweden and Greece were below 10 searches per 1 million inhabitants.

[17] The data was scraped from Google search history, using a tool (SE Ranking) that allowed to identify the average search volume of specific keywords in the 12 countries covered by the study. The average search volume is calculated from December 2020 to November 2021. The search volume is a SEO metric that can help to understand how often a specific search term is being looked for in this case on Google.

[18] Approximately 29,000 searches are made for "television repair" and associated terms; Approximately 20,000 searches are made for "refrigerators repair" and associated terms; Approximately 84,000 searches are made for "laptop repair" and associated terms; Approximately 300,000 searches are made for "mobile phones repair" and associated terms; Approximately 20,200 searches are made for "clothing repair" and associated terms; Approximately 12,400 searches are made for "shoes repair" and associated terms; Approximately 24,500 searches are made for "car repair" and associated terms; Approximately 500 searches are made for "wooden furniture repair" and associated terms.

[19] 'Search volume' is the specific metric that measures the total number of searches that are performed through search engines (in this case Google), expressed as the average monthly during a given 12-month period.

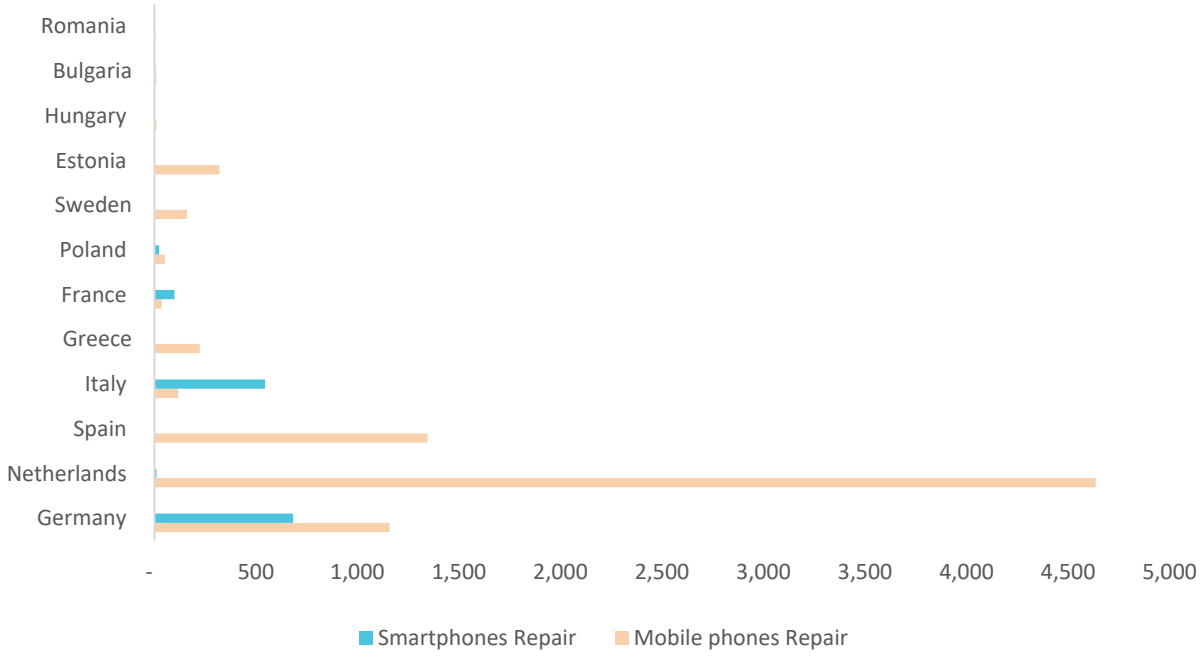
Figure 2: Search volume per 1 million inhabitants – Household Appliances [Dec 2020 - Nov 2021]



Source: Authors based on SE Ranking data

The second Figure looks at the search results for Electronic Devices (smartphones, mobile phones, laptops). "Mobile Phones repair" has been more widely searched compared to "smartphones repair", especially in Germany, Netherlands, and Spain. Laptop repair has been more widely searched in Germany (440 average search volume per 1 million inhabitants) followed by Italy (297) and France (270).

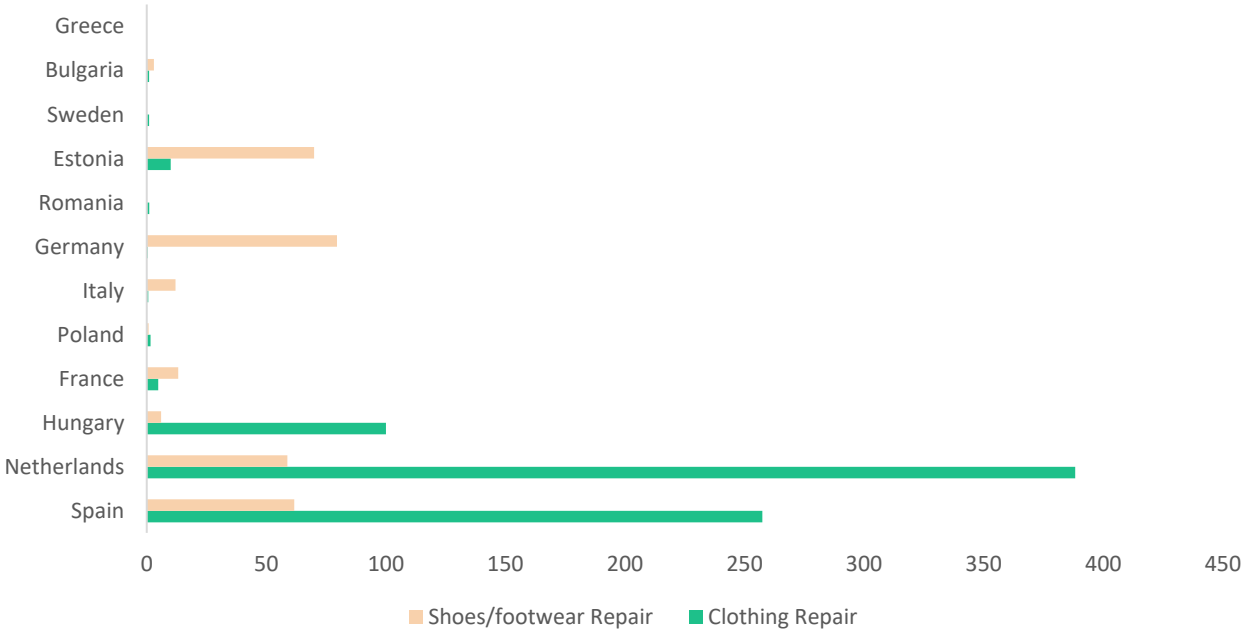
Figure 3 - Search volume per 1 million inhabitants - Electronic devices [Dec 2020 - Nov 2021]



Source: Authors based on SE Ranking data

The figure below shows the search volume per 1 million inhabitants for "clothes repair" and "shoes repair"[20]. The results show that more people are searching for "clothes repair" in the Netherlands, Spain, and Hungary while the rest of the countries did not show significant results except for Hungary (100 searchers on average). "Shoes and footwear repair" was also not widely searched in most of the countries except in Germany (80), Estonia (70), Spain (62), and the Netherlands (59).

Figure 4 - Search volume per 1 million inhabitants - Clothes and shoes [Dec 2020 - Nov 2021]

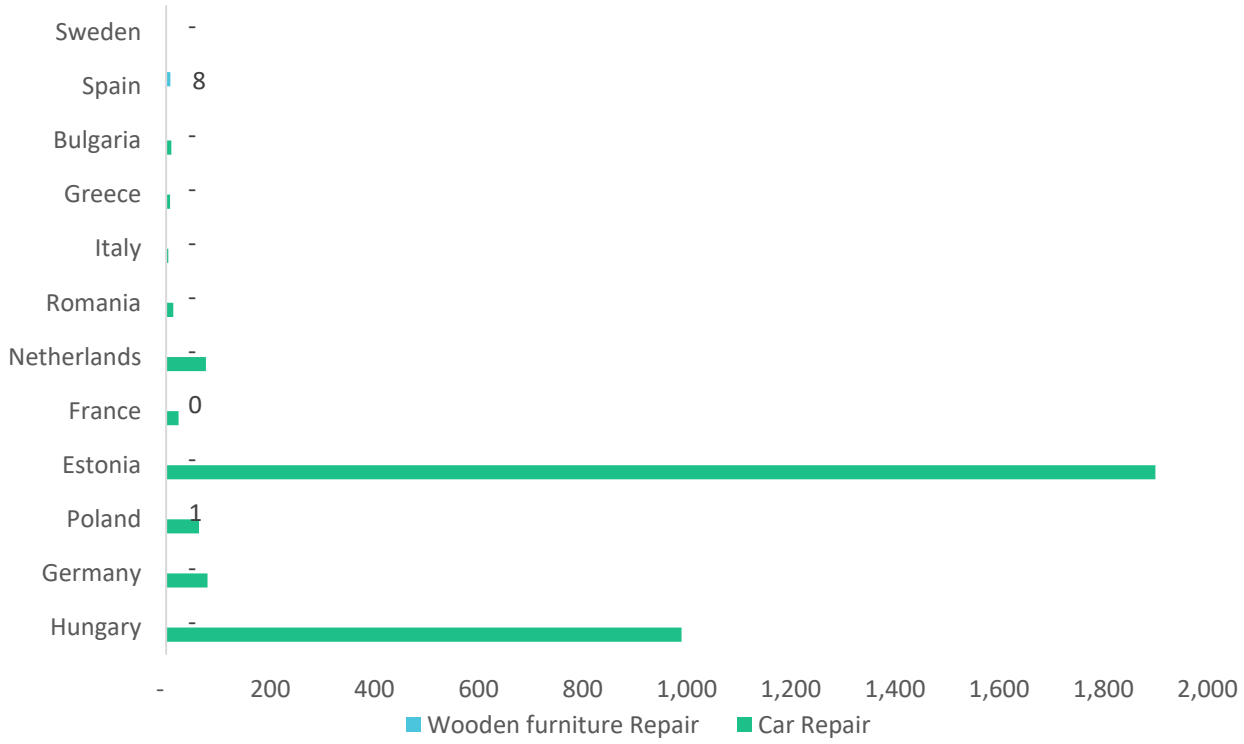


Source: Authors based on SE Ranking data

Lastly, the graph below illustrates the search volume per 1 million inhabitants for "car repair" and "wooden furniture repair". Only Spain (8) showed results for "wooden furniture repair". "Car repair" was more widely searched; especially in Estonia (1,900 average search volume per 1 million inhabitants) followed by Hungary (990). No results have been found for Sweden.

[20] A combination of key search words was used during the exercise. Search words were also translated in the local languages during the data extraction

Figure 5: Search volume per 1 million inhabitants - Wooden furniture and Cars [Dec 2020 - Nov 2021]



Source: Authors based on SE Ranking data

2.3. Consumer survey

This chapter presents the method used for designing the study's consumer survey. The main results are also presented.

2.3.1. Method

A first behavioural experiment was conducted to measure the effect of certain policy options in the context of the Sales of Goods Directive (SGD) on the behaviour of consumers[21]. In particular, the experiment was concerned with behavioural aspects around:

- The interruption and suspension of the legal guarantee period for the time of the repair;
- The extension of the legal guarantee period;

[21] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0771

- The alignment of the legal guarantee period for second-hand goods to new goods; and
- The alignment of the legal guarantee period for refurbished second-hand goods with new goods.

The experiment was designed as a parallel group study that gauged the effects of the policy options in question on the participants' likelihood to have a defective product repaired or replaced. For the alignment of the legal guarantee period, the experiment captured the amounts respondents are willing to pay for a used product with a shorter (1 year) or longer (2 years) legal guarantee.

The experiment was conducted as part of an online survey. The online survey was carried out in a total of 10 Member States of the European Union and included a sample of at least 1,000 respondents from each country. The experiment covered the following countries: France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Romania, Spain, and Sweden. The selection of countries was driven by a multitude of criteria, including geographical coverage, population size, known repair behaviour of the population, and existing legal framework.[22]

Participants were selected from an online survey panel. This selection was carried out with a quota-based sampling approach applying fixed quotas based on national population statistics for each country of the study (age, gender, region, with additional monitoring of soft quotas on factors like education and income). The fieldwork was carried out between 6 and 28 April 2022. Overall, 10,144 participants took part in the experiment. The achieved sample is representative for the general population 18 years and older in each of the countries.

For the experiment, the participants in each country were allocated at random to one of 10 groups (thus approximately 100 respondents per group and country). The experiment tested four policy measures with 19 treatments and three types of products (smartphone, pair of shoes, refrigerator). Treatments are experimental interventions that are expected to cause a change in the outcome variable (e.g., the offer of an extended guarantee period which is expected to increase people's likelihood to have a defective product repaired). The treatments related to the following policy measures (M):

- M3. Interruption/ suspension of the legal guarantee period (treatments T3)
- M4. Extending the legal guarantee period (treatments T4)
- M5. Aligning the liability period for second-hand/refurbished goods to newly produced goods (treatments T5)

The experiment combined a within-subject design (regarding the products) and a between-subject design (regarding the treatment assumptions). Each participant was exposed to two out of the three products (randomly assigned and in a random order) and for each product, received two of the 19 possible treatments. The

[22] The country selection is described in detail in Annex 1 of the study.

treatments participants received were the same across the two products they were exposed to. Based on the information participants received, they were asked to express their likelihood to have a defective product replaced or repaired or, in the case of the alignment of the liability period, to state their willingness to pay for a product under the experimental conditions.

2.3.2. Questionnaire

Study to support the Commission's policy development on promoting repair of consumer goods and contracts in the data economy

17 March 2022

Questionnaire

Version 16 – Final

Target: general population 18+

Coverage: Sweden, Germany, France, Netherlands, Spain, Italy, Greece, Hungary, Poland and Romania

Legend:
DK = don't know/no answer – always spontaneous

(OUR COUNTRY) = will be replaced by the name of the country

(PRODUCT) = the name of the specific product will be inserted.

Thank you for participating in this survey!

This survey is part of a study focusing on the experience people have with repairing or replacing faulty products. In addition, the survey contains a few questions about digital content and digital service providers on the internet.

This survey contains several texts that you will be asked to read. After reading each text, you will be asked to answer questions in the context of the information that it contains. Please read the texts carefully and think about their content before answering the questions.

Your participation in this study is completely voluntary, and all your answers are confidential. Moreover, the responses gathered will be thoroughly anonymised, and all identifiable information will be removed. The information will then be provided to our clients and published; however, it will not be possible to identify any of the responding individuals in the data.

For more information on how we collect and use your personal data, please consult (GDPR LINK).

This survey will take no longer than 20 minutes.

Continuing this interview means that you agree with the above terms and conditions.

Quota questions

ASK ALL

SD1. What is your gender?

SINGLE ANSWER

Male	1
Female	2
None of the above / Non-binary / Do not consider yourself as being in the above categories	3
Refusal [SPONTANEOUS]	997

ASK ALL

SD2A. What is your age?

NUMERICAL – OPEN ENDED

_____	1
Refusal	997

_____	1
Don't know	999

ASK SD2B IF 'Refusal' OR 'Don't know' IN SD2A (SD2A = 997 OR 999)

SD2B. What is your age?

SINGLE ANSWER

	18-24	1
	25-39	2
	40-54	3
	55-64	4
	65+	5
	Refusal /NA [SPONTANEOUS]	997
	Don't know [SPONTANEOUS]	999

SD3. In which region do you live?

SINGLE ANSWER

	Region 1	1
	Region 2	2
	…	…
	Refusal/NA [SPONTANEOUS]	997

QA1. Which of these products do you personally own or have you owned in the past?

Select all that apply

MULTIPLE ANSWERS POSSIBLE

Mobile phone/ Smartphone	1
Television	2
Refrigerator	3
Laptop	4
Clothing	5
Shoes/ footwear	6
Car	7
Wooden furniture	8
Don't know	999

IF 'DON'T KNOW' (CODE 999) IN QA1, THEN END INTERVIEW.

Section on attitudes towards repairs in general

ASK ALL

QB2. Assume that a product you own has a defect and it is no longer working properly. The defect occurred within the legal guarantee period and without it being your fault. So you may ask the seller to either repair or exchange the product for free.

In general, are you likely to choose to…?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Always have it replaced	Probably have it replaced	Probably have it repaired	Always have it repaired	Don't know
Mobile phone/ Smartphone	1	2	3	4	999
Television	1	2	3	4	999
Refrigerator	1	2	3	4	999
Laptop	1	2	3	4	999
Clothing	1	2	3	4	999
Shoes/ footwear	1	2	3	4	999
Car	1	2	3	4	999
Wooden furniture	1	2	3	4	999

QB3. To what extent do you agree or disagree with the following statements?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Fully agree	Tend to agree	Tend to disagree	Fully disagree	Don't know
In general, I prefer to buy new products and hardly ever consider buying products that are second-hand or refurbished	1	2	3	4	999
There are usually additional quality issues with products that have been repaired or refurbished	1	2	3	4	999
A refurbished product can never be as good as a new product	1	2	3	4	999

QB4. When considering the repair of a defective product, how important to you are each of the following aspects in deciding to have it repaired or not? Please answer on a scale from 0 to 10, where 0 means not important at all and 10 means highly important.

SINGLE ANSWER – RANDOMISE ITEMS

	Not important at all										Highly important	Don't know
Price of the repair in general and in relation to the cost of a new product	0	1	2	3	4	5	6	7	8	9	10	999
Availability of a repair service	0	1	2	3	4	5	6	7	8	9	10	999
Time the repair will take	0	1	2	3	4	5	6	7	8	9	10	999
Effort required to bring or send the product to the repair service	0	1	2	3	4	5	6	7	8	9	10	999
Availability of newer and better products	0	1	2	3	4	5	6	7	8	9	10	999
Possibility of getting a replacement product/compensation for the duration of the repair	0	1	2	3	4	5	6	7	8	9	10	999
Personal attachment to the current product	0	1	2	3	4	5	6	7	8	9	10	999

	Not important at all										Highly important	Don't know
Information available regarding the responsible party (legal/commercial guarantee)	0	1	2	3	4	5	6	7	8	9	10	999
Information available regarding price of the repair, and the repair process	0	1	2	3	4	5	6	7	8	9	10	999
Trust in the quality of repair	0	1	2	3	4	5	6	7	8	9	10	999

ASK QUESTION QB5 FOR EACH PRODUCT RESPONDENT OWNS (SELECTED IN QA1)

QB5. Assume that a new [PRODUCT] that you like costs [PRICE] EUR. The one that you have has the following defect: [DEFECT OF PRODUCT]. How much are you willing to pay for a repair?

SLIDER RANGING FROM 0 TO THE PRICE FOR THE NEW PRODUCT

0									Max price
1	2	3	4	5	6	7	8	9	10

Nothing, I will buy a new [PRODUCT] [SPONT.]	998
Don't know	999

ASK QUESTION QB6 FOR EACH PRODUCT IN STUDY (SELECTION OF TWO PRODUCTS)

QB6. Thinking about the future, if the market for repair services for [PRODUCT] continues to be like it is today, do you think you will be …?

SINGLE ANSWER – INVERT

More likely to have a defective product repaired than replaced	1
Equally likely to have a defective product repaired or replaced	2
Less likely to have a defective product repaired than replaced	3
Don't know	999

ASK QUESTION QB7 FOR EACH PRODUCT IN STUDY (SELECTION OF TWO PRODUCTS)

QB7. In general, when buying a new [PRODUCT], to what extent do you consider the following aspects when deciding for or against a particular model?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Do not consider at all										Consider in all cases	Don't know
It is important to me that it can be repaired in the event of a defect	0	1	2	3	4	5	6	7	8	9	10	999
I look for suppliers or producers who offer the option to have the product easily repaired	0	1	2	3	4	5	6	7	8	9	10	999
I consider the environmental impact of particular brands of products	0	1	2	3	4	5	6	7	8	9	10	999

Section on SGD experiment

PROGRAMMING – DEFINITION OF EXPERIMENT GROUPS: 10 groups, each respondent receives 2 treatments for 3 products each. The order of treatments is fixed, the order of products is randomised. See tab 'Order of treatments' in experiment workbook.

SHOW SCREEN: In the next series of questions, we will present you with short descriptions of a choice issue. Please **read the texts carefully** and think about

their content before you move on to the next page to answer questions. **You cannot go back once you have left a screen.**

SHOW SCREEN:

EXPERIMENTAL PROMPTS

ASK QX1 FOR TREATMENTS 3,4

QX1. Please indicate how likely you would be in this situation to…

SINGLE ANSWER PER LINE – RANDOMISE ITEM ORDER

	Very unlikely	Unlikely	Rather unlikely	Rather likely	Likely	Very Likely	Don't know
[GROUPS 1, 2, 3, 4, 6, 7] Have the [PRODUCT] repaired for free	1	2	3	4	5	6	999
[GROUPS 5] Have the [PRODUCT] repaired at your own cost	1	2	3	4	5	6	999
[GROUPS 1, 2, 3, 4, 7] Have the [PRODUCT] replaced for free	1	2	3	4	5	6	999
[GROUPS 5, 6] Replace the [PRODUCT] at your own cost	1	2	3	4	5	6	999

ASK QX2A AND QX2B FOR TREATMENTS 5

SHOW QX2A AFTER FIRST TREATMENT

QX2A. Please indicate which [PRODUCT] you would buy if the prices were as stated. The price of the new [PRODUCT] is [PRICE NEW PRODUCT].

SINGLE ANSWER

New [PRODUCT] with 2 years liability			Used [PRODUCT] with 1 year liability	
[PRICE NEW ITEM]	☐		☐	[PRICE NEW PRODUCT] – (ITERATION * INCREMENT)

REPEAT QX2A UNTIL RESPONDENT CHOOSES RIGHT HAND OPTION

SHOW QX2B AFTER SECOND TREATMENT

QX2B. Please indicate which [PRODUCT] you would buy if the prices were as stated. The price of the used [PRODUCT] is the maximum price you indicated you would be willing to pay before. The price of the new [PRODUCT] was [PRICE NEW PRODUCT].

SINGLE ANSWER

Used [PRODUCT] with 1 year guarantee			Used [PRODUCT] with 2 years guarantee	
[PRICE USED PRODUCT]	☐		☐	[PRICE NEW PRODUCT] – (ITERATION * INCREMENT)

REPEAT QX2B UNTIL RESPONDENTS CHOOSES RIGHT HAND OPTION

Section on consumer experience with defects and product repair

ASK QUESTION QC1 FOR EACH PRODUCT RESPONDENT OWNS (SELECTED IN QA1) (SELECTION OF TWO PRODUCTS)

QC1. In general, after buying a new [PRODUCT], how long do you think it takes until a defect occurs that results in the product no longer functioning properly?

SINGLE ANSWER

Within 1 to 3 months	1
Within 3 months to 1 year	2
Within 1 to 2 years	3
Within 2 to 5 years	4
Usually longer than 5 years	5
Not applicable [SPONTANEOUS]	997
Don't know	999

ASK QUESTION QC2 FOR EACH PRODUCT RESPONDENT OWNS (SELECTED IN QA1) (SELECTION OF TWO PRODUCTS)

QC2. You mentioned that you own or have owned the following product: [PRODUCT].

In the past, did you have the situation where your product had a defect that resulted in it no longer functioning properly?

If you experienced multiple defects of the same product, please consider the most recent defect.

SINGLE ANSWER

Yes, within the last 2 years	1
Yes, more than 2 years ago	2
No	3
Don't know	999

FOR EACH DEFECT (CODE 1 OR 2 IN QC2) FOLLOW UP WITH A LOOP OF THE QUESTIONS QC3 TO QC13

QC3. Did this defect occur within the legal guarantee period [POPOVER: The legal guarantee allows you to ask the seller to repair or exchange a good you bought if it turns out to be defective. In the event that a repair or replacement is impossible, the seller has to reimburse the sum paid. The legal guarantee period in [COUNTRY] is [PERIOD]] of the product?

SINGLE ANSWER

Yes	1
No	2
Don't know	999

QC4. What was the reason for the defect?

SINGLE ANSWER – RANDMISE

Defect due to transport	1
Defect due to impact or shock	2
Defect due to temperature or moisture	3
Defect due to improper use	4
Mechanical wear and tear	5
Electronic parts wear out	6
Other	996
None [SPONTANEOUS]	998
Don't know	999

QC5. When the defect occurred, what did you do with the [PRODUCT]?

SINGLE ANSWER – ROTATE

I replaced it with a new one	1
I successfully had it repaired	2
I successfully repaired it myself	3
I kept it despite the defect as it was still operational	4
I don't use it anymore, but I did not get a new one	5
Don't know	999

ASK QC6 IF RESPONDENT BOUGHT NEW PRODUCT, STILL USES DEFECT PRODUCT OR NO LONGER USES PRODUCT (CODE 1, 4, 5) IN QC5

QC6. Why did you not have the product repaired?

MULTIPLE ANSWERS POSSIBLE – MAX 5 – ROTATE

I wanted a new model	1
I like to change such products regularly	3
I could not find information about how to get it repaired	4

I wanted a new model	1
There was no service available that could carry out such a repair	5
Repairing it was too costly	6
It was not possible to estimate the price of the repair cost beforehand	7
Too much effort was required to bring the product to the shop or have it shipped	8
It would have taken too long until the product was repaired	10
It was not possible to get the required replacement product for the duration of the repair	11
The product design made it impossible to have it repaired	12
I had it repaired or repaired it myself, but the repair was not successful	14
[ASK ONLY IF QC3=1] The seller refused to repair the product	15
[ASK ONLY IF QC3=1] The seller offered a replacement product rather than a repair	16
Other	996
None [SPONTANEOUS]	998
Don't know	999

ASK QC7 IF 'SELLER REFUSED TO REPAIR THE PRODUCT' (CODE 15) IN QC6

QC7. You mentioned that the seller refused to repair the product. Was it for any of the following reasons?

MULTIPLE ANSWERS POSSIBLE – RANDOMISE

The seller did not give a reason [EXCLUSIVE]	1
The defect was too severe	2
Spare parts were not available	3
The repair would be too expensive relative to the purchase of a new product	4
The vendor only repaired products that customers bought at their shop	5
The repair would be too complicated	6
There was no access to repair services in the area	7
The seller said they were not responsible for the defect	8
I was asked to reach out directly to the manufacturer	9
Other [OPEN ENDED]	996
None [SPONTANEOUS]	998
Don't know	999

ASK QC8 IF 'HAD IT REPAIRED' (CODE 2) IN QC5.

QC8. Think about when you had your [PRODUCT] repaired. To what extent do you agree or disagree with each of the following statements?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Strongly agree	Tend to agree	Tend to disagree	Strongly disagree	Not applicable [SPONT.]	Don't know
It was easy to find out how to get the product repaired	1	2	4	5	997	999
The cost of repair was reasonable compared with a new purchase	1	2	4	5	997	999
The repair was of good quality	1	2	4	5	997	999
The shop where I bought the product offered a repair service	1	2	4	5	997	999
The repair was done/ or offered to be done in a reasonable period of time	1	2	4	5	997	999
The producer of the product helped me get the product repaired	1	2	4	5	997	999

ASK QC9 IF 'HAD IT REPAIRED' (CODE 2) IN QC5.

QC9. Where did you have the product repaired?

SINGLE ANSWER – RANDOMISE

The shop where I bought the product	1
The producer of the product	2
A repair café (a community-based organisation)	3
A local repair shop	4
A large repair service	5
A friend or family member	6
Repaired it myself	7

The shop where I bought the product	1
Other	996
Don't know	999

ASK QC10 IF NOT 'OTHER' CODE (996) OR 'DON'T KNOW' (CODE 999) IN QC9

QC10. What was the reason to have it repaired at this place?

MULTIPLE ANSWERS POSSIBLE – RANDOMISE

It was close	1
It was convenient to reach	2
It resulted in little or no cost for me	3
It took little time to carry out the repair	4
I could make a legal claim to have it repaired	5
I had trust in the quality of the repair	6
Other	996
None [SPONTANEOUS]	998
Don't know	999

ASK QC11 IF 'HAD IT REPAIRED' (CODE 2) IN QC5.

QC11. Overall, how satisfied were you with the repair service you experienced?

SINGLE ANWER

Very satisfied	1
Rather satisfied	2
Neither satisfied nor unsatisfied	3
Rather unsatisfied	4
Very unsatisfied	5
Don't know/don't remember	999

ASK QC12 IF 'HAD IT REPAIRED' (CODE 2) IN QC5.

QC12. Approximately how much did the repair cost in relation to the initial price of the product? Please choose a percentage of the initial price.

SLIDER – SINGLE ANSWER

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	More than 100%

Not applicable [SPONTANEOUS]	998
Don't know	999

ASK QC13 IF 'HAD IT REPAIRED' (CODE 2) IN QC5.

QC13. After you had the product repaired, did the same defect occur again while using it?

SINGLE ANWSER

Yes, immediately after the repair	1
Yes, some time after the repair	2
No	3
Don't know	999

Section on attitudes towards second-hand and refurbished goods in general

ASK ALL

QD1. In your view, what typically characterises a refurbished good?

MULTIPLE ANSWERS POSSIBLE – RANDOMISE

Refurbished goods usually have been used previously by another person	1
Refurbished goods have been defective previously and have been repaired	2

Refurbished goods usually have been used previously by another person	1
Refurbished goods can still contain small defects if these do not impact the functionality of the product	3
Refurbished goods have their functionality checked or tested before they are sold	4
Refurbished goods are usually sold with a commercial guarantee beyond the guarantee that is legally required	5
Refurbished goods have been cleaned and sanitised before they are sold	6
In the case of electronic devices, prior users' data have been completely deleted	7
Refurbished goods have been repaired preventively, and parts have been replaced	8
Refurbished goods are made look like new before they are sold	9
Don't know	999

QD2. Comparing refurbished goods with second-hand goods, to what extent do you agree or disagree with each of the following statements?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Fully agree	Tend to agree	Neither agree nor disagree	Tend to disagree	Fully disagree	Don't know
Refurbished goods are often of higher quality than second-hand goods	1	2	3	4	5	999
When buying refurbished goods, I am better protected as a consumer than when buying second-hand goods	1	2	3	4	5	999
There is effectively no difference between buying refurbished goods and buying second-hand goods	1	2	3	4	5	999

ASK QUESTION QD3 FOR A SELECTION OF TWO PRODUCTS

QD3. For each of the following products, how important to you is the option of buying a product second-hand or refurbished rather than a new product?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Very important	Rather important	Rather not important	Not important at all	Product not relevant to me [SPONT.]	Don't know
Mobile phone/ Smartphone	1	2	3	4	997	999
Television	1	2	3	4	997	999
Refrigerator	1	2	3	4	997	999
Laptop	1	2	3	4	997	999
Clothing	1	2	3	4	997	999
Shoes/ footwear	1	2	3	4	997	999
Car	1	2	3	4	997	999
Wooden furniture	1	2	3	4	997	999

Section on experience when buying used goods

ASK QUESTION QE1 FOR EACH PRODUCT RESPONDENT OWNS (SELECTED IN QA1) (SELECTION OF TWO PRODUCTS)

QE1. In the past 12 months, did you buy a [PRODUCT] that had been refurbished or used before (second-hand)?

SINGLE ANSWER

Yes	1
No	2
Don't know	999

FOLLOW UP FOR EACH PRODUCT WITH LOOP OF QUESTIONS QE2 TO QE4

ASK QE2 IF RESPONDENT SAID "YES" (CODE 1) IN QE1

QE2. For what reason did you decide to buy this product used and not new?

MULTIPLE ANSWERS POSSIBLE – RANDOMISE

The price	1
A retro look	2
Better quality for the price	3
Carbon footprint of the product	4
Concerns about waste	5
A new product was not available	6
Other	996
None [SPONTANEOUS]	998
Don't know	999

ASK QE3 IF RESPONDENT SAID "YES" (CODE 1) IN QE1

QE3. Where was the vendor of the used product located?

SINGLE ANSWER

Close to where I live	1
In (OUR COUNTRY)	2
In another EU country	3
In a country outside of the EU	4
I did not pay attention to this/ it was not relevant to me	5
Don't know	999

ASK QE4 IF RESPONDENT SAID "NO" (CODE 2) IN QE1

QE4. For what reason, if any, did you decide not to buy a used product?

MULTIPLE ANSWERS POSSIBLE – RANDOMISE

I had no need to purchase such a product [EXCLUSIVE and fixed on top]	1
I like to have products that are new	2
I want the latest technology or fashion	3
I don't trust refurbished or second-hand products	4
It's complicated to find what I would like as second-hand or refurbished products	5

I had no need to purchase such a product [EXCLUSIVE and fixed on top]	1
Where I live there is little or no choice of refurbished or second-hand products	6
I prefer shopping in shopping centres, brand shops or large department stores	7
Used products usually have a shorter or no guarantee period	8
Other	996
None [SPONTANEOUS]	998
Don't know	999

ASK ALL

QE5. Which of the following would be important for you to consider buying used (second-hand) products in the future?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Very important	Rather important	Rather unimportant	Very unimportant	Don't know
Price of the used products	1	2	3	4	999
Availability of stores offering used products	1	2	3	4	999
Availability of online platforms offering used products	1	2	3	4	999
Commercial guarantee for the quality of the used product	1	2	3	4	999
Range of products offered as used	1	2	3	4	999
Consumer reviews on the seller	1	2	3	4	999
Quality of the used products	1	2	3	4	999
Other (specify)	*Text*				

Section on experience when selling used goods

ASK QUESTION QF1 FOR EACH PRODUCT RESPONDENT OWNS (SELECTED IN QA1) (RANDOM SELECTION OF TWO PRODUCTS)

QF1. For each of the following products, have you ever sold or considered selling used products that you owned?

SINGLE ANSWER PER LINE

	Yes, sold it successfully	Yes, tried to sell it, but unsuccessfully	Yes, considered selling it	No	Don't know
Mobile phone/ Smartphone	1	2	3	4	999
Television	1	2	3	4	999
Refrigerator	1	2	3	4	999
Laptop	1	2	3	4	999
Clothing	1	2	3	4	999
Shoes/ footwear	1	2	3	4	999
Car	1	2	3	4	999
Wooden furniture	1	2	3	4	999

ASK QF2 IF RESPONDENT SAID "NO" (CODE 4) IN QF1 – IN LOOP FOR EACH PRODUCT

QF2. You mentioned that you did not sell or considered selling the following product: [PRODUCT]

What are the reasons why you have not sold or considered selling your used product?

MULTIPLE ANSWERS POSSIBLE – RANDOMISE ORDER – ANSWER 1 FIXED AND EXCLUSIVE

I did not have a used product of this kind to sell or give away [EXCLUSIVE and fixed on top]	1
There was nobody interested in buying this product from me	2
The price I would receive was not worth it	3
The product was too damaged or run down to sell it	4
The work or time needed to sell it was too much for me	5
There were no suitable platforms on which to offer this product	6
The legal obligations around a sale were unclear or too burdensome for me	7
I preferred to give the product away or donate it	8
Other	996
None	998

I did not have a used product of this kind to sell or give away [EXCLUSIVE and fixed on top]	1
Don't know	999

Section on policy options

ASK QG1 TO ALL GENERALLY AND THEN FOR ONE PRODUCT - ASK FOR EACH OF THE POLICY OPTIONS:

QG1. The legal guarantee allows you to ask the seller for the free repair or replacement of the product you bought if it turns out to be defective. The legal guarantee period in [COUNTRY] is [PERIOD]]:

Consider the following possible options to change the legislation about the legal guarantee for goods:

ASK QUESTION FOR EACH OPTION:

1	The legal guarantee period would start anew if you decide to repair the product instead of replacing it.
2	The legal guarantee period would be extended beyond the current minimum two years for new goods.
3	The legal guarantee period for second-hand goods would be extended so that it is of the same length as that for new products, which is currently 2 years.
4	The legal guarantee period for refurbished goods would be extended so that it is of the same length as one for new products (i.e. 2 years), but not for other second-hand (non-refurbished) goods.
5	You would have the option of asking the producer or the seller to have a defective product repaired for a reasonable fee for a given period of time beyond the legal guarantee period.

In general, to what extent would this increase the chances that you would…?

Please select on a scale from 0 to 10, where 0 means that it would not at all increase the chances and 10 means it would very much so.

SINGLE ANSWER PER LINE

	Not at all										very much so	Don't know
[FOR 1, 2, 5] Have the product repaired [FOR 3]: Buy the product second-hand [FOR 4]: Buy the product refurbished	0	1	2	3	4	5	6	7	8	9	10	999

Attitudes towards sustainability

ASK ALL

QS1. To what extent do you agree or disagree with the following statements?

SINGLE ANSWER PER LINE – RANDOMISE ITEMS

	Fully agree	Tend to agree	Tend to disagree	Fully disagree	Don't know
I actively seek out companies and brands that offer ways of offsetting their impact on the environment	1	2	3	4	999
I have stopped buying certain products/services because of their impact on the environment or society	1	2	3	4	999
I am prepared to invest my time and money to support companies that try to do good	1	2	3	4	999
Buying sustainable products shows others who I am and what I believe in	1	2	3	4	999
I don't believe environmental problems are bad enough to justify going out of my way to be green	1	2	3	4	999

Section on digital content and digital services providers (Part B)

SHOW SCREEN: This section asks about your experience with digital content and digital services, for which you do not pay a price, but to whom you provide your personal data instead which they will use to operate and further develop their offerings. For instance, the apps or services you use on the internet without paying a price but by providing your personal data, may make your data available to advertisers to generate revenue.

QP1. How often do you use digital content or digital services from the categories below?

SINGLE ANSWER PER LINE – RANDIMISE ITEM ORDER

	Never	Less than once a week	Around once a week	Several times per week	Daily	Don't know
Music streaming (e.g. Spotify, Deezer)	1	2	3	4	5	999
Video streaming (e.g. YouTube)	1	2	3	4	5	999
Online games	1	2	3	4	5	999
Digital software tools, e.g. Google Docs, image editing, health and fitness tracking, etc. ('Software-as-a-Service')	1	2	3	4	5	999
Social media (e.g. Facebook, Instagram, LinkedIn)	1	2	3	4	5	999

SHOW SCREEN: Providers of these digital content/services collect personal data you share with them actively (e.g. when registering) or passively. Passive data are normally collected through the use of cookies (e.g. tracking how you use the website, or which other sites you visit). Some of these cookies are strictly necessary for providing the digital content/service or for complying with regulations. The strictly necessary cookies are always active. Others are optional and can be switched on or off.

QP3. According to the European General Data Protection Regulation (GDPR), you have to give your consent before digital content/service providers can use cookies. What do you usually do when a website (typically a pop-up window) asks you to confirm your preferences with regard to cookies?

SINGLE ANSWER

I usually allow all cookies	1
I usually allow some of the cookies, but not all	2
I usually reject all cookies that are not strictly necessary	3
It depends on the website	4
Refusal	997

QP4. In the past 12 months, have you withdrawn your previously given consent to a digital content/service provider from the below categories for processing your personal data? This could happen e.g. by switching off an optional cookie that was monitoring your actions on the site in order to personalise advertisements.

SINGLE ANSWER – RANDOMISE ITEM ORDER

	Yes	No	Don't know
Music streaming apps or platforms	1	2	999
Video streaming apps or platforms	1	2	999
Online games	1	2	999
Digital software tools	1	2	999
Social media apps or platforms	1	2	999

ASK QP5 TO QP6 FOR EACH OF 'YES' ITEM FROM QP4

QP5. What happened after withdrawing your consent? If you have withdrawn your consent on several occasions, think of the most recent example.

MULTIPLE ANSWERS POSSIBLE – CODE 1 AND 6 ARE EXCLUSIVE

I voluntarily deleted my account/stopped using the digital content/service [EXCLUSIVE]	1
My account was deleted by the digital content/service provider	2
My access was limited to only a part of the digital content/service	3
The volume of the data or digital content/service I could use was reduced	4
Other quality aspects of the digital content/service were reduced	5
I was able to use the digital content/service as before [EXCLUSIVE]	6
Don't know	999

QP6. When you withdrew your consent, did you receive a notification from the digital content/service provider that it would comply with your request?

SINGLE ANSWER

Yes, it was clearly explained that my personal data are no longer being used and that they have been deleted	1
Yes, but it was not clearly stated that my personal data are no longer being used and that they have been deleted	2
No	3
Don't know	999

Sociodemographic questions

SD4 What is your highest educational attainment?

SHOW SCREEN – SINGLE ANSWER - STANDARD SCALE – ISCED

Less than primary education	1
Primary education	2
Lower secondary education	3
Upper secondary education	4
Post-secondary non-tertiary education	5
Short-cycle tertiary education	6
Bachelor's or equivalent level	7
Master's or equivalent level	8
Doctoral or equivalent level	9
Refusal [SPONTANEOUS]	998

TRANSLATION: add country specific examples for degrees on each level in parenthesis.

SD5 For statistical purposes only, can you please indicate the approximate total monthly net income of all members of the household in which you live after taxes?

Please consider all sources of income, including means as child benefits or unemployment benefits.

SHOW SCREEN – SINGLE ANSWER

EUR 500 or less	1
Between EUR 501 and EUR 750	2
Between EUR 751 and EUR 1,000	3
Between EUR 1,001 EUR and EUR 1,500	4
Between EUR 1,501 and EUR 2,000	5
Between EUR 2,001 and EUR 2,500	6
Between EUR 2,501 and EUR 3,000	7
Between EUR 3,001 and EUR 4,000	8
Between 4.001 EUR and 6.000 EUR	9
More than EUR 6,000	10
Refusal/ NA [SPONTANEOUS]	998

SD6. As far as your current occupation is concerned, would you say you are…?

SHOW SCREEN – SINGLE ANSWER

Self-employed	1
Employee	2
Without a professional activity or student	3
Refusal / NA [SPONTANEOUS]	998

ASK SD7a IF SD6 = 1

SD7a. Would you say you are...?

SHOW SCREEN – SINGLE ANSWER

Farmer, forester, fisherman	1
Owner of shop, craftsman	2

Farmer, forester, fisherman	1
Professional (lawyer, medical practitioner, accountant, architect, ...)	3
Business proprietors, owner (full or partner) of a company	4
Other self-employed person	5
Refusal [SPONTANEOUS]	998

ASK SD7b IF SD6 = 2

SD7b. Would you say you are...?

SHOW SCREEN – SINGLE ANSWER

General management, director or top management	1
Middle management or other management (e.g. department head)	2
Employed position, working mainly at a desk	3
Employed position, not at a desk	4
Manual worker	5
Other type of employee	6
Refusal [SPONTANEOUS]	998

ASK SD7c IF SD6 = 3

SD7c. Would you say you are...?

SHOW SCREEN – SINGLE ANSWER

Responsible for ordinary shopping and looking after the home, or without any current occupation, not working	1
Student (full time)	2
Unemployed or temporarily not working	3
Retired or unable to work through illness	4
Other	996
Refusal [SPONTANEOUS]	998

2.3.3. Results

Consumer Survey Data Analysis

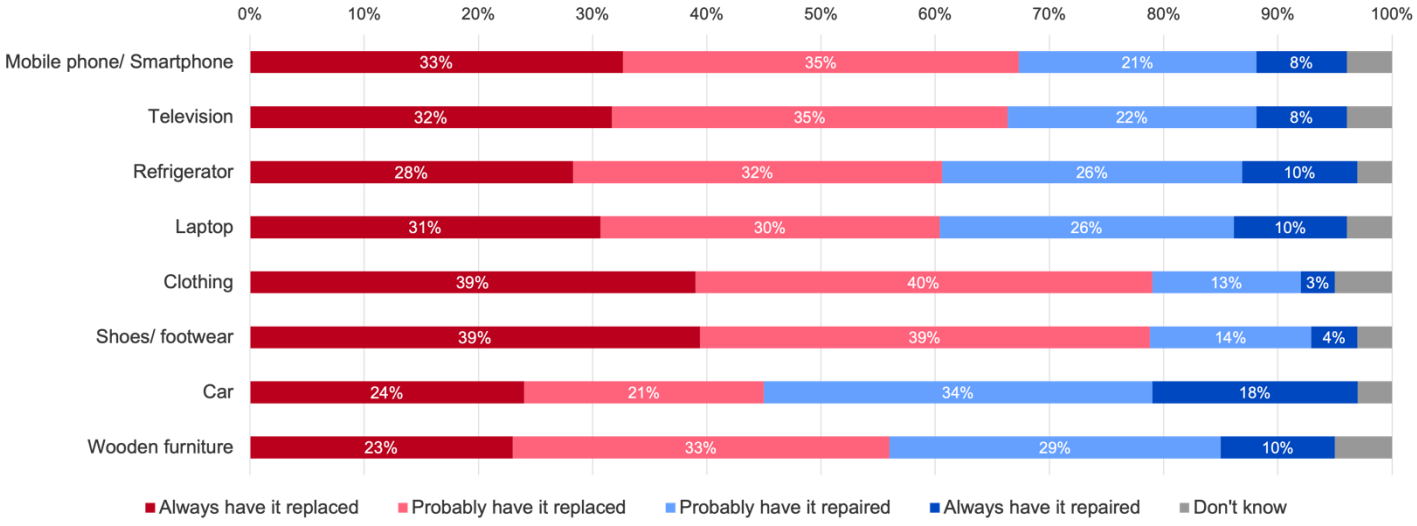
Overall Information

The survey was conducted online in 10 Member States: France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Romania, Spain, Sweden. There were 10,114 respondents in total. The survey was conducted online with a representative sample of the general population (18 years and older) from each of the Member States. The survey uses non-probability sampling and the results are weighted to population targets.

Attitudes towards repairs

For all the products except cars, more than half of the respondents reported that they would "always have the products replaced" or "probably have it replaced" if it has a defect and it is no longer working properly. For mobile phones, 33% of the respondents reported that they would always have it replaced. Clothing and shoes/footwear were the products most likely to be replaced ("total replaced": Clothing 79%, shoes/footwear 78%).

Figure 6 - 'Assume that a product you own has a defect and it is no longer working properly. The defect occurred within the legal guarantee period and without it being your fault. So, you may ask the seller to either repair or exchange the product for free. In general, are you likely to choose to…?'



Respondents were also asked about the importance of several factors when deciding to repair or not to repair a defective product (e.g., the cost of repairing, the availability of a repairing service). The answers were on a scale from 0 to 10, where 0 means not important at all and 10 means highly important. **Error! R eference source not found.** The table shows the average number for the answers received per factor. Price of the repair (in general and in relation to the

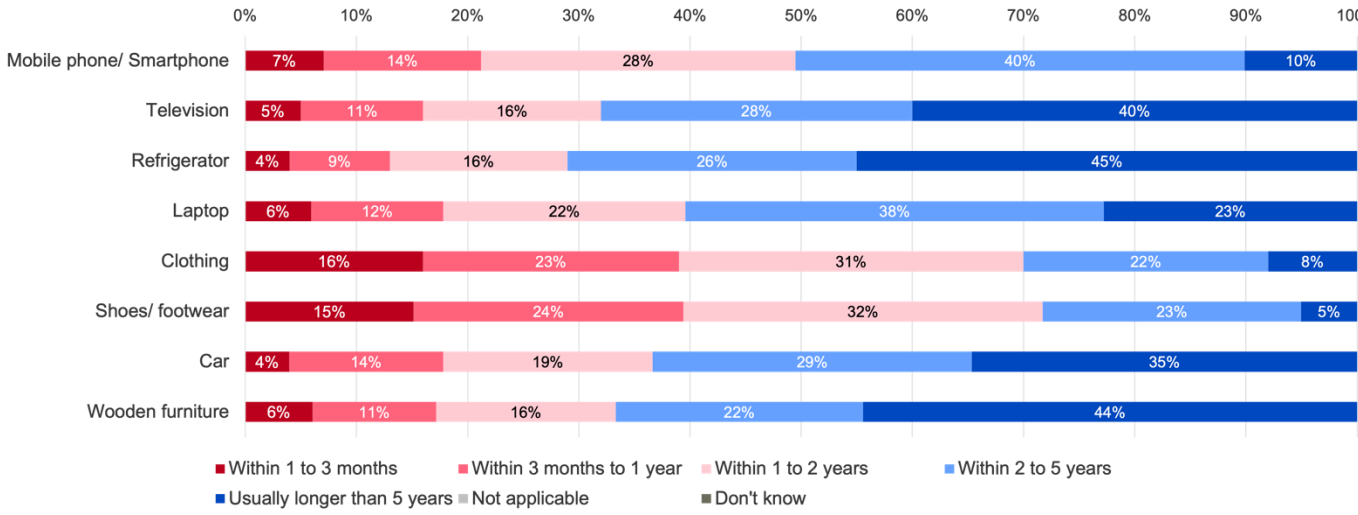
cost of a new product) and trust in the quality of repair were endorsed the most with average scores of 8,2. Information available regarding the price of the repair, and the repair process was also considered important (8,1).

Figure 7 - 'When considering the repair of a defective product, how important to you are each of the following aspects in deciding to have it repaired or not? Please answer on a scale from 0 to 10, where 0 means not important at all and 10 means highly important'

Perceived time until defect occurs

In terms of respondents' perception towards the relationship between time and a product becoming defective, products such as house furniture (e.g., wooden furniture), household appliances (e.g., refrigerators and televisions) and electronical devices (e.g., laptops) and cars are deemed to have a lifespan within 2 to 5 years or longer than 5 years before needing to be repaired. Clothing and footwear are, on the other hand, usually perceived as less long-lasting.

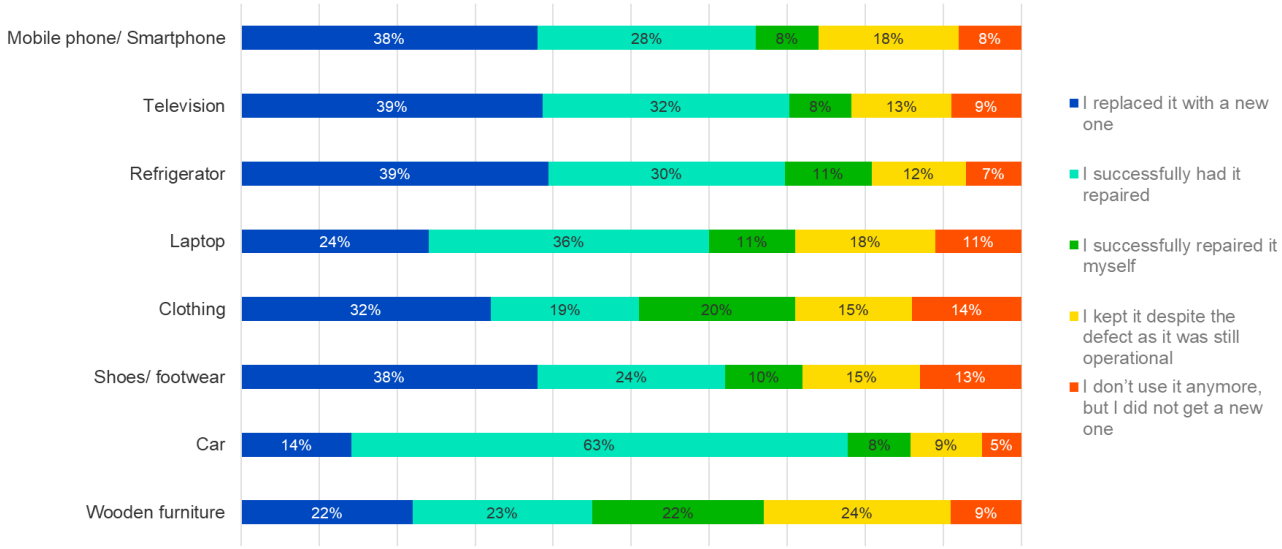
Figure 8 - 'In general, after buying a new [PRODUCT], how long do you think it takes until a defect occurs that results in the product no longer functioning properly?'



Reasons for defect

Respondents were asked what they did when a defect occurred in each of the product categories. Overall, a relative majority of respondents seemed to prefer replacing damaged products with new ones. This was not the case with laptops and, most notably, with cars. For the former, 36% of respondents declared to have had it successfully repaired, while 'only' 28% of them had it replaced. For the latter, 63% of respondents said to have had their car repaired.

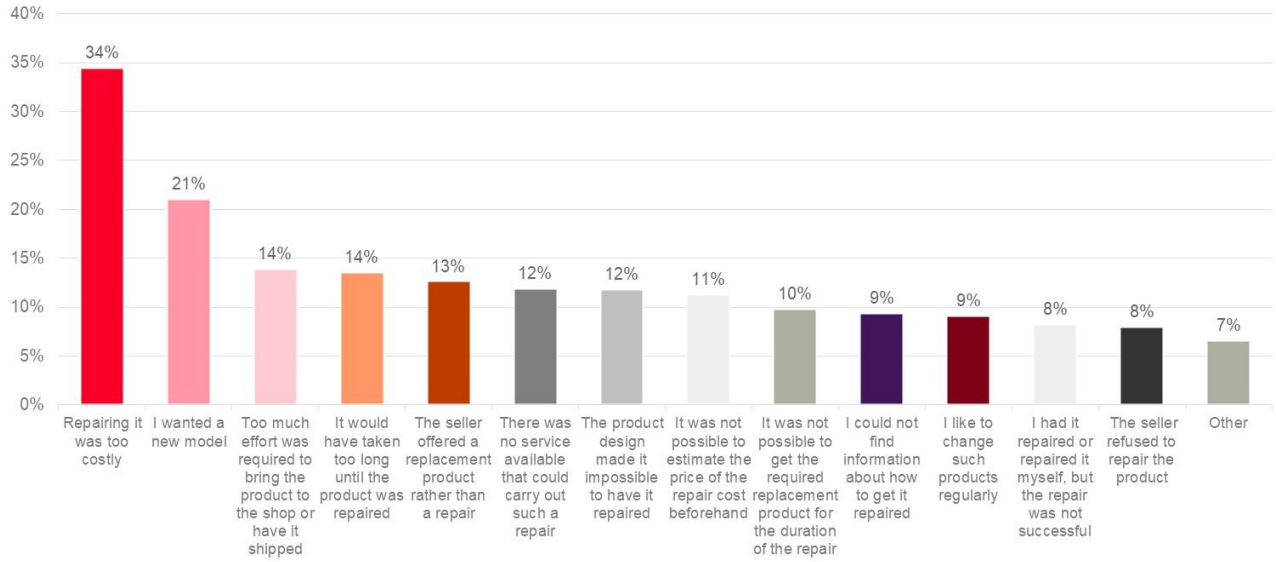
Figure 9 - When the defect occurred, what did you do with the product?



Reasons for not having a product repaired

When asked about reasons for not having a product repaired the most mentioned reason was that repairing was too costly for all products. For wooden furniture, the second most stated reason (25%) was 'too much effort to bring the product to the shop or have it shipped'.

Figure 10 - 'Why did you not have the product repaired?'



The respondents who reported that the seller refused to repair the product were consequently asked for the reasons for seller refusal to repair. As showed below, the most frequent reasons varied for each product. For mobile phone, the most stated reason was that the repair would be too expensive relative to the purchase

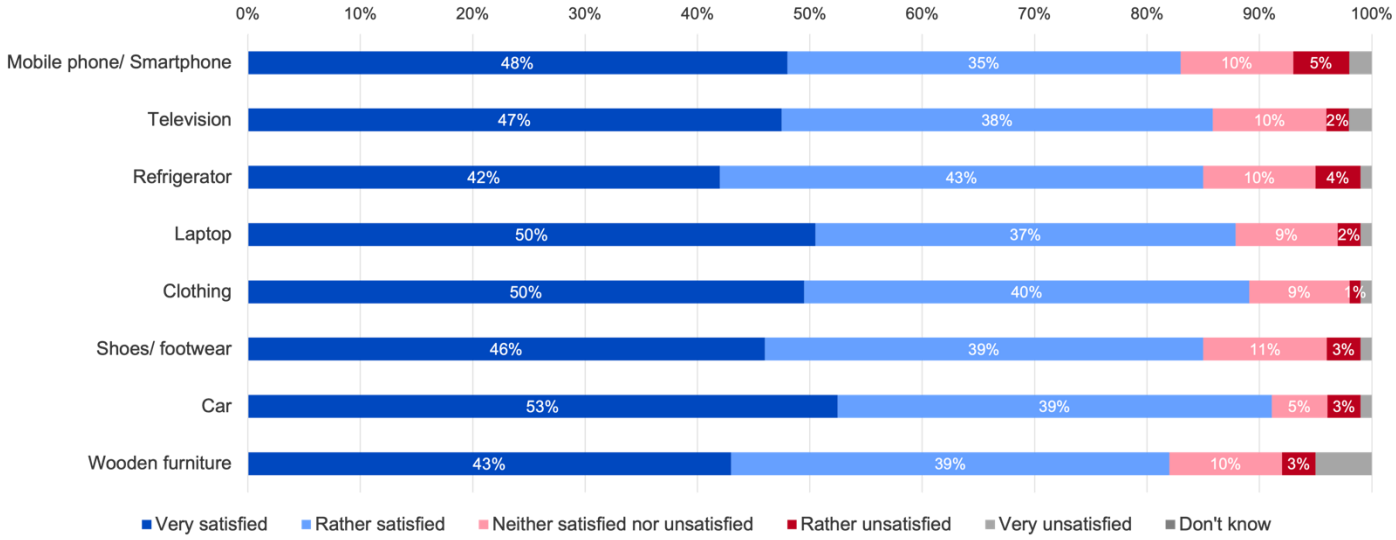
of a new product (32%). On the other hand, for refrigerator, "the seller said they were not responsible for the defect" was reported the most (43%).

Figure 11: 'You mentioned that the seller refused to repair the product. Was it for any of the following reasons?'

Satisfaction with repair services

For all products, a significant majority of respondents were either very or rather satisfied with the repair services they have experienced.

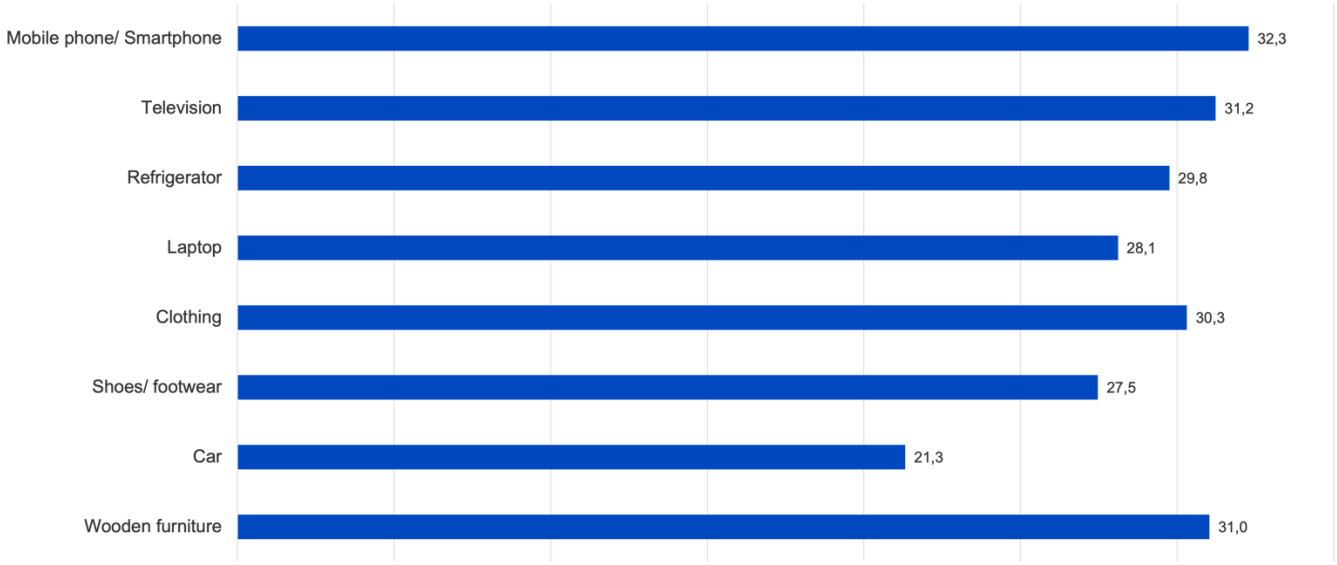
Figure 12 - Think about when you had your [PRODUCT] repaired. To what extent do you agree or disagree with each of the following statements?



Repair cost relative to initial price

Respondents who had their products repaired were also asked to indicate the cost of the service as a percentage of the original price. The average repair costs relative to the initial product price that were reported by respondents ranged from 21.3% (for cars) to 32.3% (for smartphones) of the original price.

Figure 13 - 'Approximately how much did the repair cost in relation to the initial price of the product? (% of original price)'



Experience when buying used goods

Besides having no need to purchase such a product, the most important reason for not buying a used product is the fact that consumers prefer to have products that are new.

Figure 14 - 'For what reason, if any, did you decide not to buy a used product?'

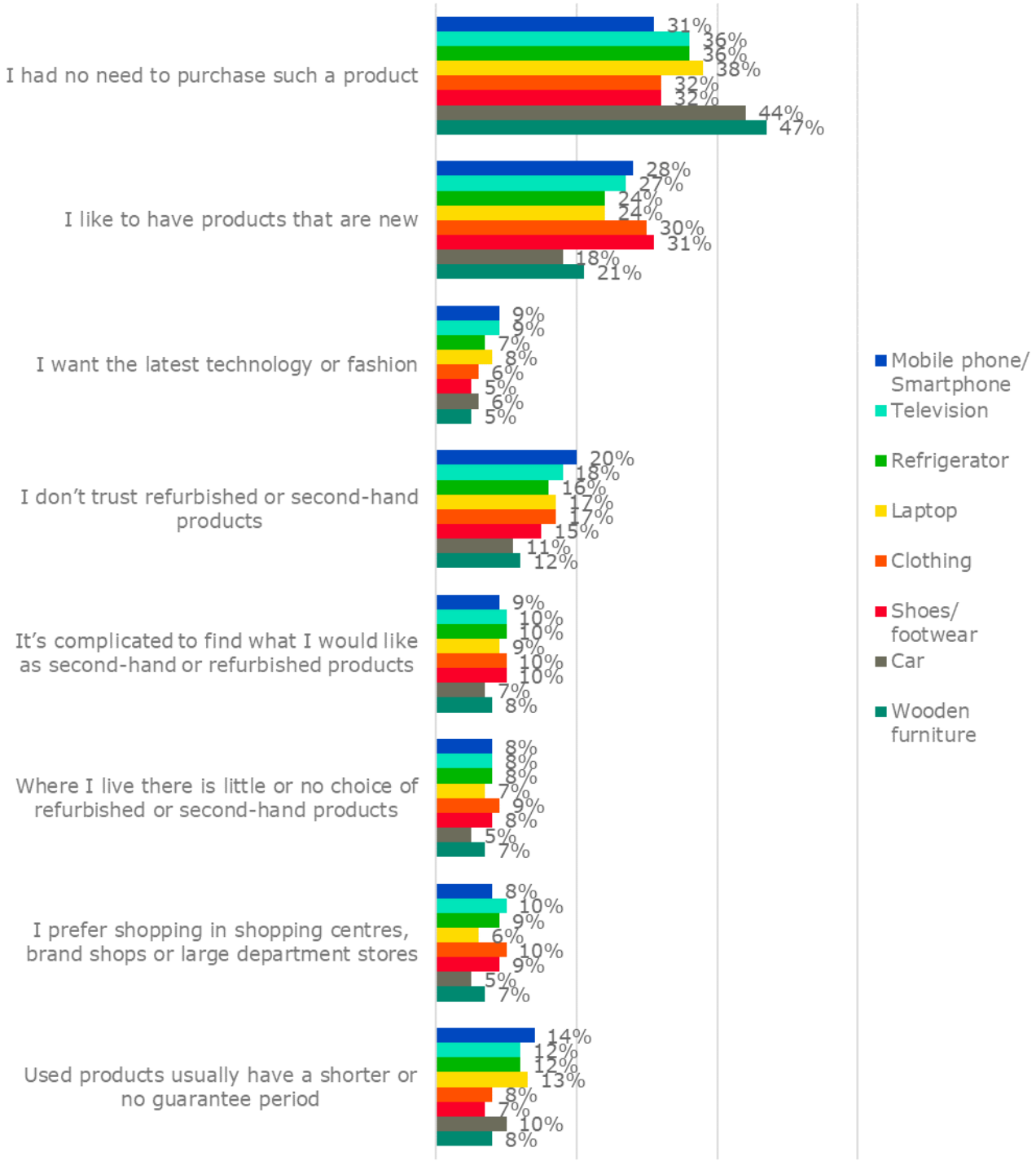
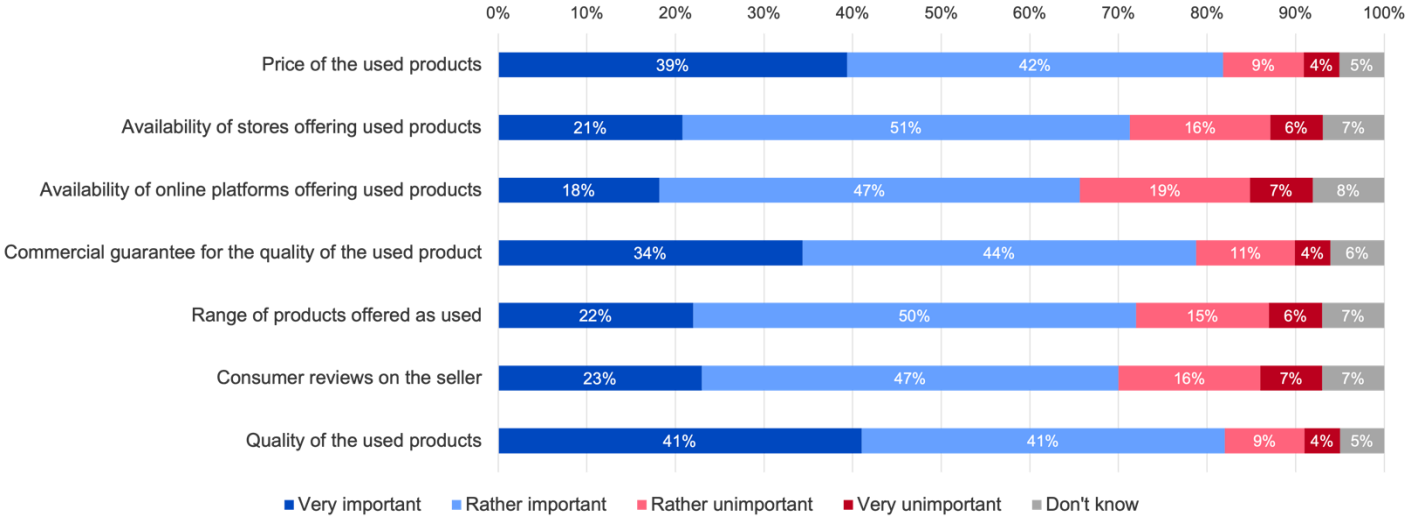


Figure 15: Which of the following would be important for you to consider buying used (second-hand) products in the future?

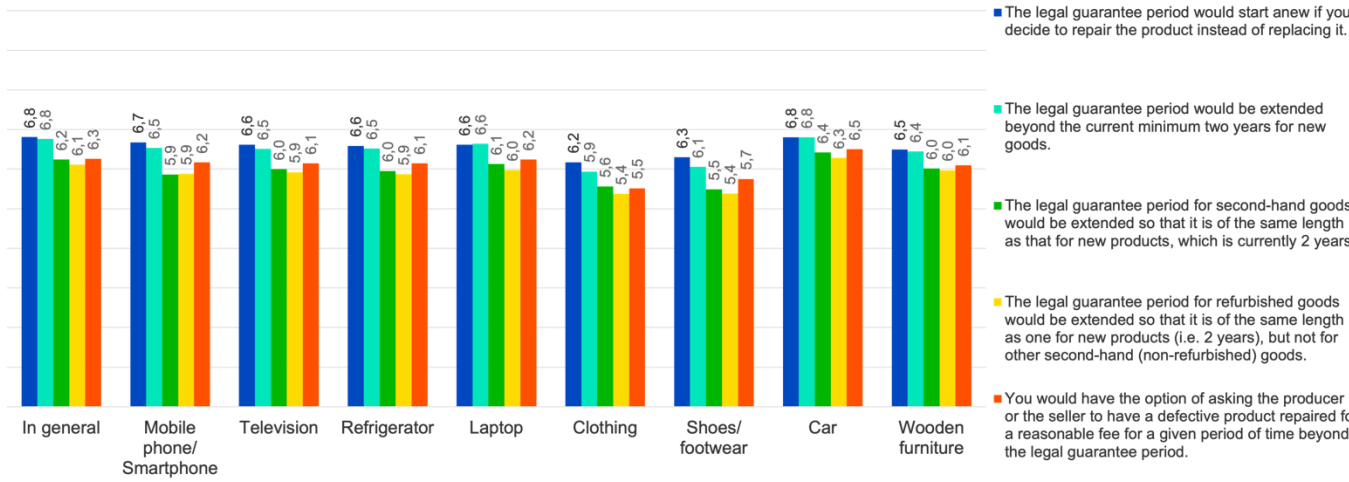


Respondents were then asked to indicate the factors that would increase the likelihood to buy a used product. Unsurprisingly, both the price and the quality of the product are relatively important factors. However, 34% of respondents also deemed the commercial guarantee for the quality of the used product to be very important.

Assessment of policy options

Respondents were asked to what extent would each policy option increase the chances that they would have a product repaired in general and for each specific product. When asked in general, the respondents were most likely to have a product repaired if "the legal guarantee period would start anew if the consumer decide to repair the product instead of replacing it" and "the legal guarantee period would be extended beyond the current minimum two years for new goods".

Figure 16 - Preferences for policy options



The full set of results is available in PowerPoint format in annex 1.4 folder to this report.

2.4. Experiment 1: Behavioural experiment on measures in the context of the Sales of Goods Directive (SGD)

This chapter presents the method used for designing the study's behavioural experiment (1). The main results are also presented.

2.4.1. Method

As part of the study, a behavioural experiment was conducted to measure the effect of certain policy options in the context of the Sales of Goods Directive (SGD) on the behaviour of consumers[23]. The experiment was embedded in the consumer survey questionnaire, as described in section 2.3. Consumer survey. In particular, the experiment was concerned with behavioural aspects around:

- The interruptions and suspension of the legal guarantee period for the time of the repair
- The extension of the legal guarantee period
- The alignment of the legal guarantee period for second-hand goods to newly produced goods
- The alignment of the legal guarantee period for refurbished second-hand goods with new goods.

[23] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0771

The experiment was designed as a parallel group study that gauged the effects of the policy options in question on the participants' likelihood to have a defect product repaired or replaced. For the alignment of the legal guarantee period, the experiment captured the amounts respondents are willing to pay for a used product that comes with different commitments regarding the legal guarantee period.

The experiment was conducted as part of the online consumer survey. The online survey was carried out in a total of 10 Member States of the European Union and included a sample of at least 1000 respondents per country. Respondents were selected following a quota approach based on the official population statistics of the countries The countries covered are France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Romania, Spain, and Sweden. The methodology is the same as described in section 2.3.1. Method in the chapter on the consumer survey.

For the experiment, the participants in each country were allocated with equal chance into 10 groups (thus approximately 100 respondents per group and country). The experiment tested four policy measures with 19 treatments and three types of products (smartphone, pair of shoes, refrigerator). The treatments related to the following policy measures:

- M3. Interruption/suspension of the legal guarantee period (treatments T3)
- M4. Extending the legal guarantee period (treatments T4)
- M5. Aligning the liability period for second-hand/refurbished goods to newly produced goods (treatments T5)

The experiment combined a within subject design (regarding the products) and a between subject design (regarding the treatment assumptions). In a nutshell, each participant was exposed to two out of the three products (randomly assigned and in random order) and for each product, received two of the 19 possible treatments. The treatments a participated received were the same across the two products they were exposed to.

Calculation of indexes

Affinity to repair index: In the survey part, respondents were asked about how likely they are to either repair or replace a product that they own and that is no longer working properly. In this particular question, they were asked to assume that the defect occurred within the legal guarantee period and without it being their fault. Based on the answers across the eight tested products, we created an index that summarises the affinity of respondents to repair.[24]

[24] This index was constructed by awarding a point score to respondents based on their answers on each item of question QB2 in the survey. The points awarded were 'Always have it replaced' 0 points, 'Probably have it replaced' 1 point, 'Probably have it repaired' 2 points, 'Always have repaired' 3 points. The results were normalised based on the number of items answered to range from 0-3. As

'Prejudice towards used goods' index: As part of the survey, participants answered several questions that captured their attitudes towards used goods (question QB3). Combined in an index, these questions can be used to indicate negative attitudes, or prejudices, consumers may have regarding used products. Based on the answers to the items, we constructed an index for the purposes of this study called 'Prejudice towards used goods' index.[25] This index relates to the problem of a consumerist culture and was introduced to capture attitudes concerned with this aspect.

Sustainability engagement index: Respondents were asked to what extent they agree with statements on how much they value sustainability and reflect in their own actions as consumers. To summarise consumers' level of engagement with sustainable practices, we created an index based on the statements that were tested in in the survey (question QS1).[26] This 'sustainability engagement index' is designed to indicate the level to which participants are engaged in sustainable behaviour, particularly with regards to their consumer choices.

regards the scale reliability diagnostic, the value obtained for Cronbach's Alpha value is > 0.75, indicating the scale as reliable.

[25] This index was constructed by awarding a point score to respondents based on their answers on each item of question QB3, namely "In general, I prefer to buy new products and hardly ever consider buying products that are second-hand or refurbished", "There are usually additional quality issues with products that have been repaired or refurbished", "A refurbished product can never be as good as a new product". The points awarded were 'Fully agree' 3 points, 'Tend to agree' 2 points, 'Tend to disagree' 1 point, 'Fully disagree' 0 points. The results were normalised based on the number of items answered to range from 0-3.

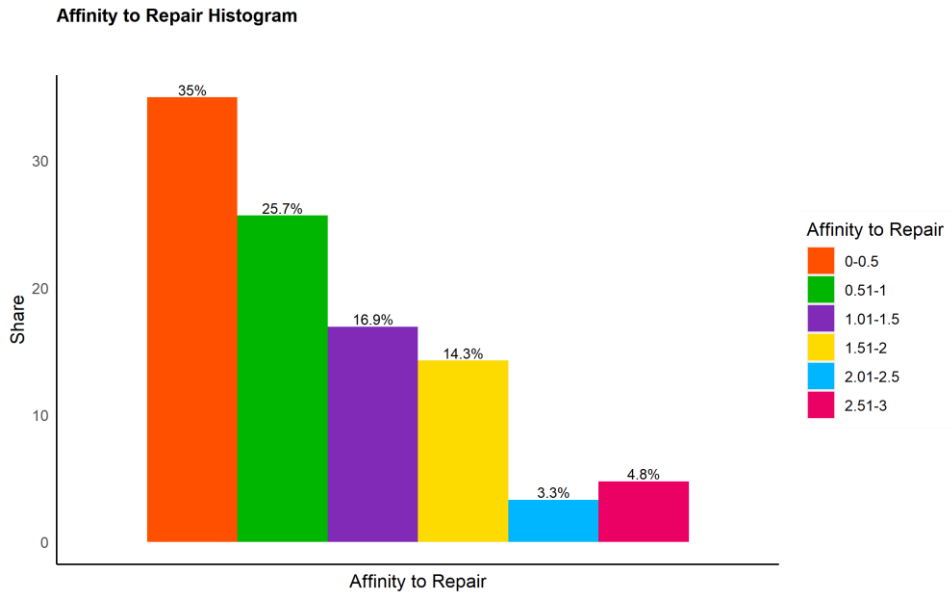
[26] The question was adapted from Kantar's Sustainable Transformation Practice. As part of the questionnaire, agreement with overall 5 statements was tested, namely "I actively seek out companies and brands that offer ways of offsetting their impact on the environment", "I have stopped buying certain products/services because of their impact on the environment or society", "I am prepared to invest my time and money to support companies that try to do good". "Buying sustainable products shows others who I am and what I believe in", and "I don't believe environmental problems are bad enough to justify going out of my way to be green" (negative). Based on the answers, the following points were awarded: 'Fully agree' 3 points, 'Tend to agree' 2 points, 'Tend to disagree' 1 point, 'Fully disagree' 0 points. Points for item 5 were inverted. The results were normalised based on the number of items answered to range from 0-3.

2.4.2. Consumer attitudes towards repair and second-hand goods

2.4.2.1. Consumer's affinity to repair

The affinity to repair index ranges from 0 to 3, with 0 indicating the lowest affinity to repair and 3 the highest. Looking at the distribution of the affinity to repair index in the achieved sample, it is visible that there is a considerable share of the participants having low score (35%, 0.0-0.5 points), meaning they favour a replacement across all products. Conversely, a much smaller share of participants reaches the highest possible scores (4.8%, 2.5-3.0 points), indicating a very high affinity to have their defective products repaired. A large majority reaches a score up to 1.5 (77.6%), which may indicate a general preference in the population to have defective products replaced rather than repaired.

Figure 17 - Affinity to repair Index – distribution of responses

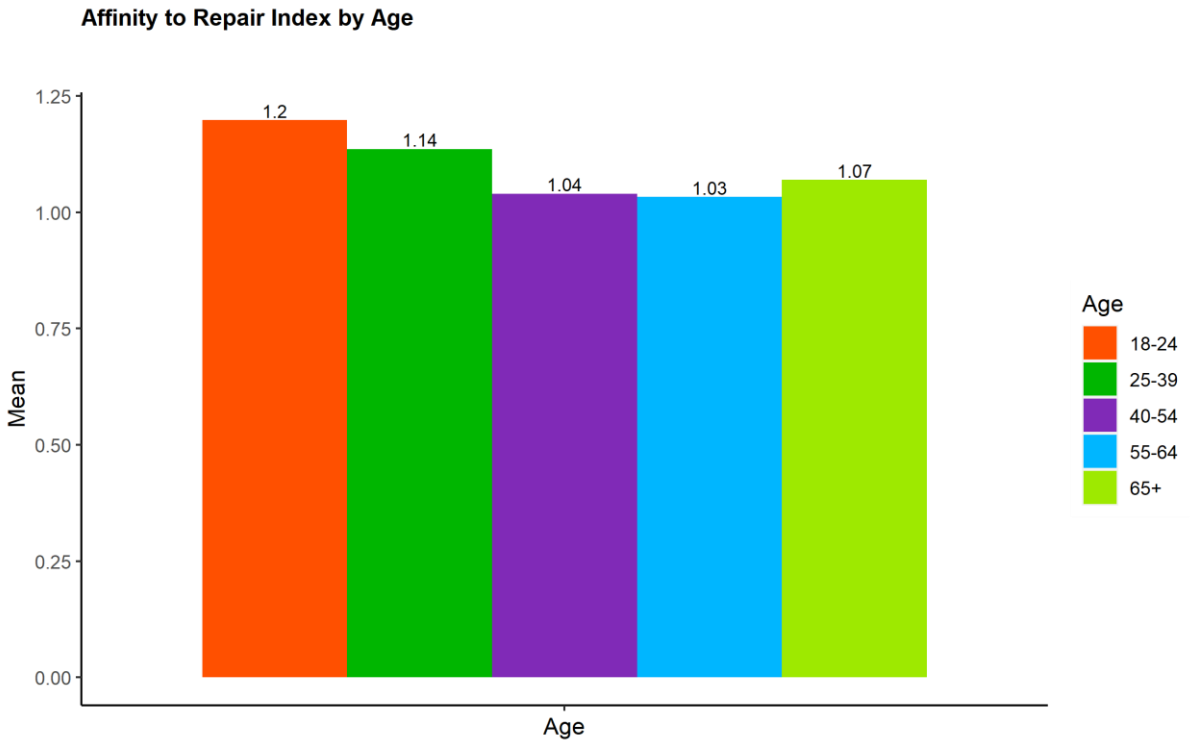


Considering **sociodemographic differences** in the results, we see that

- Younger participants have a higher affinity towards repair than older age groups. The average score among those aged 18-24 is 1.2, while on the other hand those aged 55-64 have an average score of 1.03, and those 65 years and older have an average score of 1.07

There are no considerable differences based on gender, education, occupation, or household income.

Figure 18 - Affinity to repair Index by age of respondents

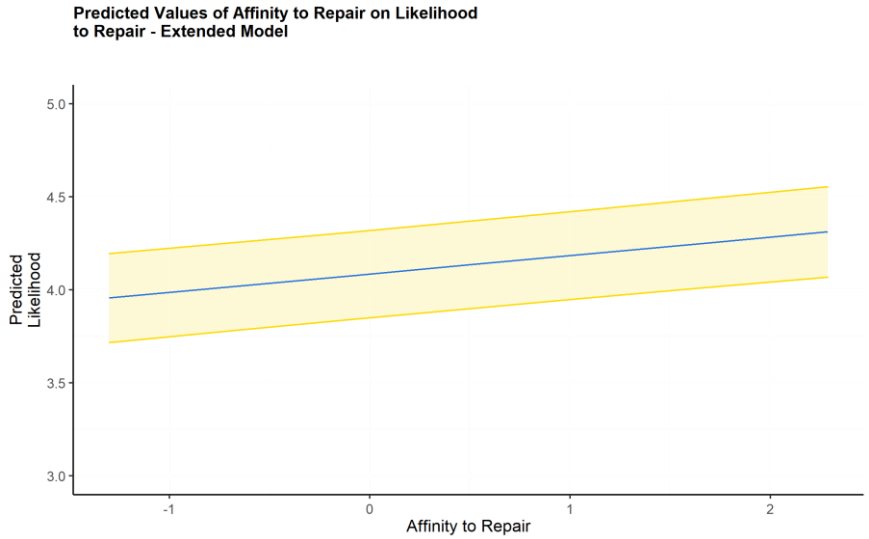


The experiment results show that the affinity to repair has a small, but significant effect on participant's actual likelihood to choose repair or replacement of a given product. Multivariate analysis results in which the likelihood to repair is estimated as a function of demographic characteristics, the exposure to the experimental treatments and several other predictors[27] show that, as general trend, the higher the consumers' affinity to repair, the more likely they are to choose to repair in the event of a product defect.

Given that this index captures a general attitude which is central for consumers' likelihood to repair, the effect size being relatively small is perhaps surprising, but it indicates that several other factors may play a decisive role in the decision of consumers to repair or not to repair. These factors and their effects are further discussed in the following sections.

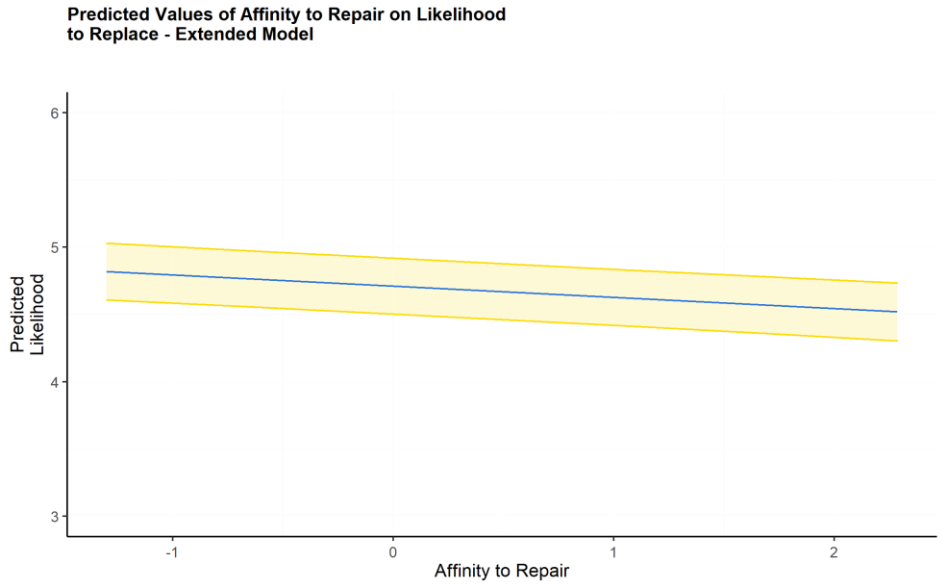
[27] For the configuration of the mixed effects model and its complete results, see Table 12 - Likelihood to have product repaired replaced mixed-effects linear model (estimates and standard errors)

Figure 19 - Effect of Affinity to repair Index on likelihood to repair



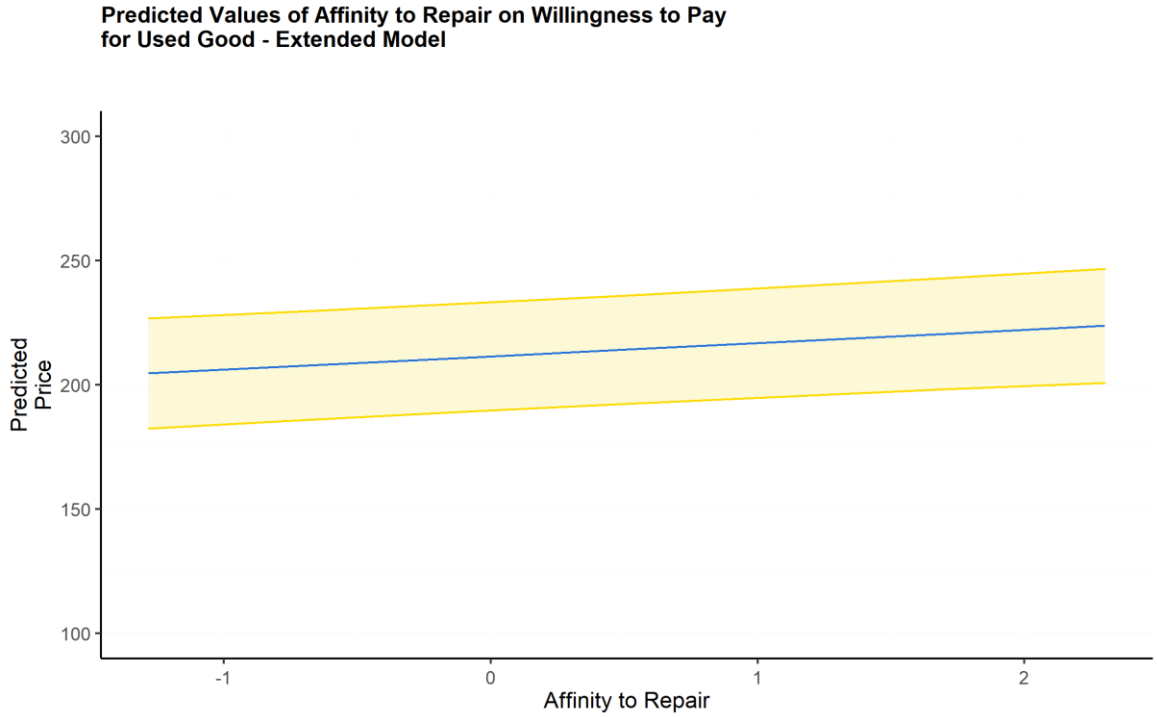
Similarly, the experiment shows a small effect of the affinity to repair on the likelihood to choose a replacement. Given that repairing a product is an alternative to replacing a product, as an overall trend the data shows that the higher the consumers' affinity to have a product repaired, the less likely they are to choose to have it replaced. However, the effect size is very small, which indicates the consumers' attitudes towards repair are not a decisive factor in their choice to have a defective product replaced or not replaced.

Figure 20 - Effect of Affinity to repair Index on likelihood to replace



Consumers' affinity to repair has a significant positive effect on their willingness to pay for a used product. The higher a consumer's affinity to have products repaired, the higher the amount they are willing to pay for a used product.

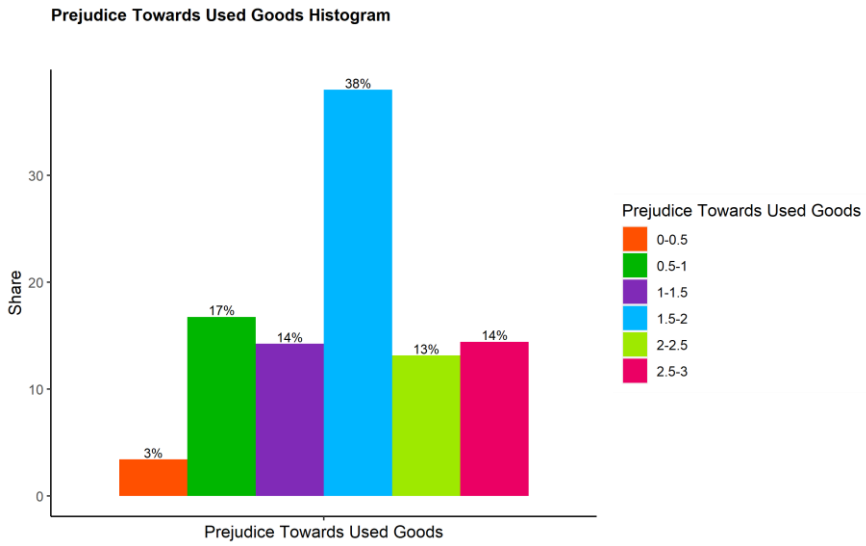
Figure 21 - Effect of Affinity to repair Index on Willingness to Pay for Used Goods



2.4.2.2. Negative attitudes towards second-hand and refurbished goods

The 'Prejudice towards used goods' index ranges from 0 to 3, with 0 indicating a low level of prejudice and 3 a high level of prejudice towards used goods. Most respondents exhibit a moderate level of prejudice towards used goods (38% have a score of 1.5-2). Only 3% have a minimal level of prejudice (score between 0-0.5). On the other hand, 14% of the participants are characterised by a very high level of prejudice towards used goods (score between 2.5-3).

Figure 22 - Prejudice Towards Used Goods – distribution of responses

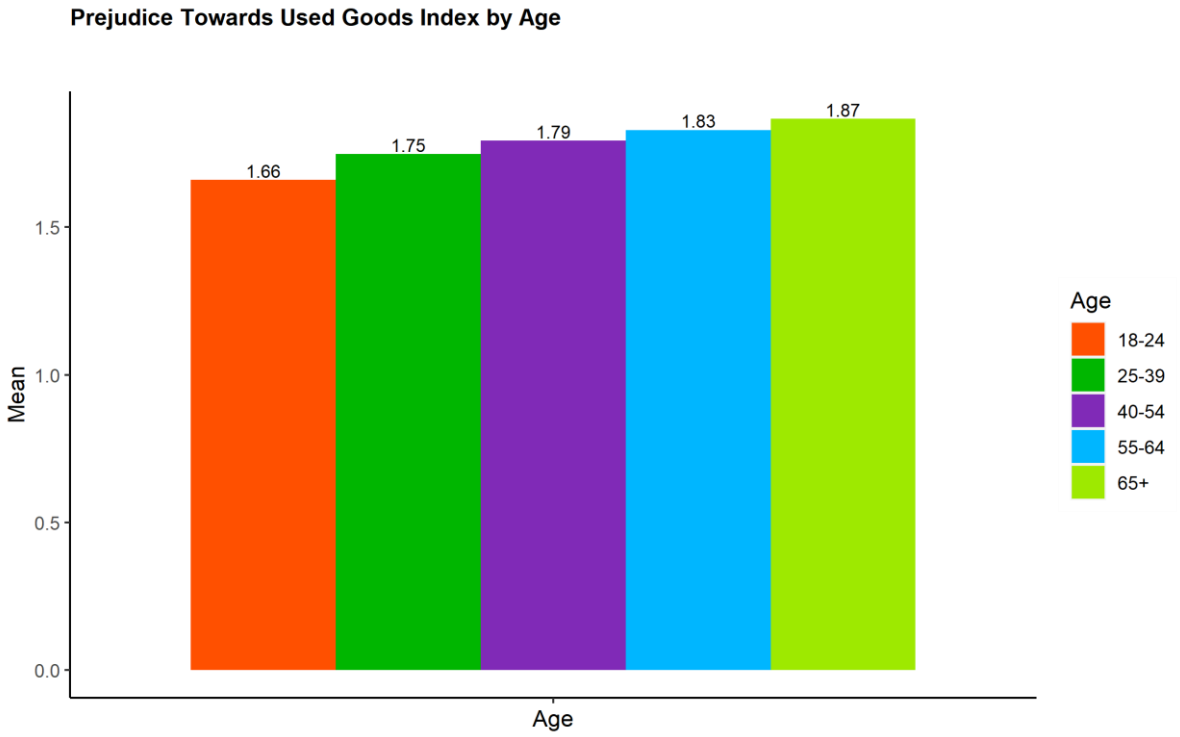


Considering **sociodemographic differences** in the results, we see that

- Men have a slightly higher prejudice towards used goods, compared to women. Their average score is 1.83, while those of women is 1.75
- Older respondents show a higher prejudice towards used goods. Those aged 18-24 have an average score of 1.66, while those aged 65+ have an average score of 1.87

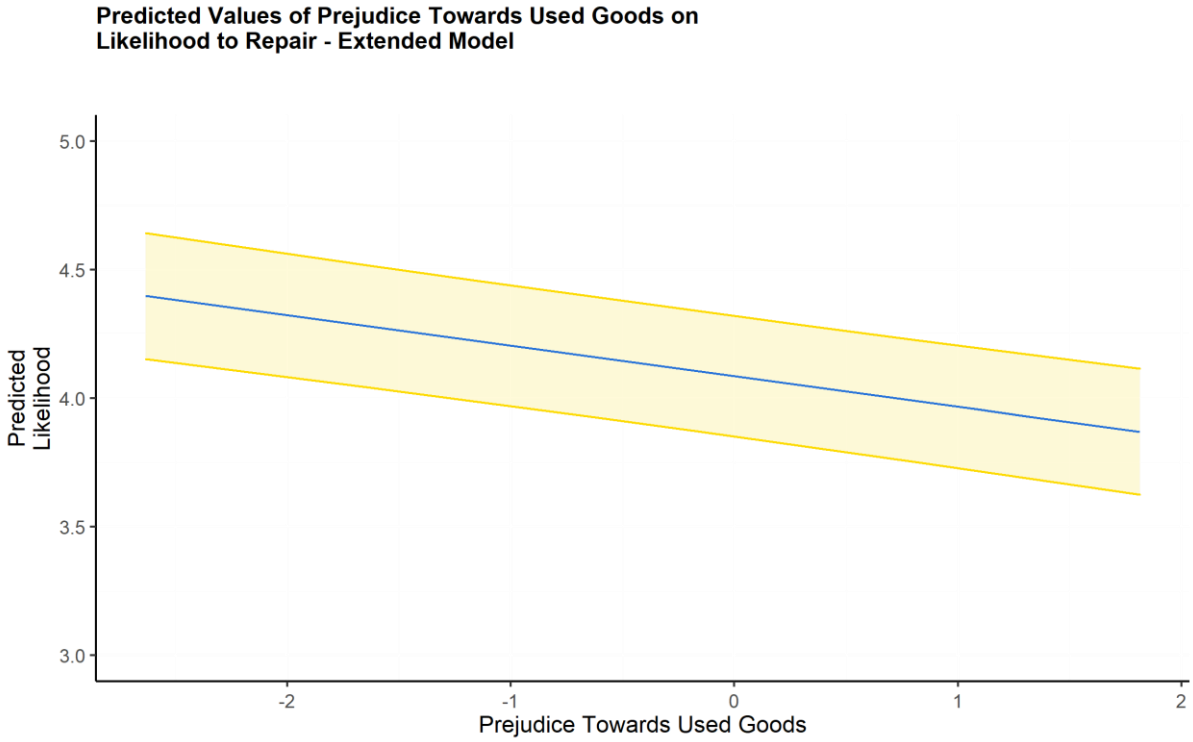
There are no considerable differences based on education, occupation, or household income.

Figure 23 - Prejudice Towards Used Goods by Age of respondents



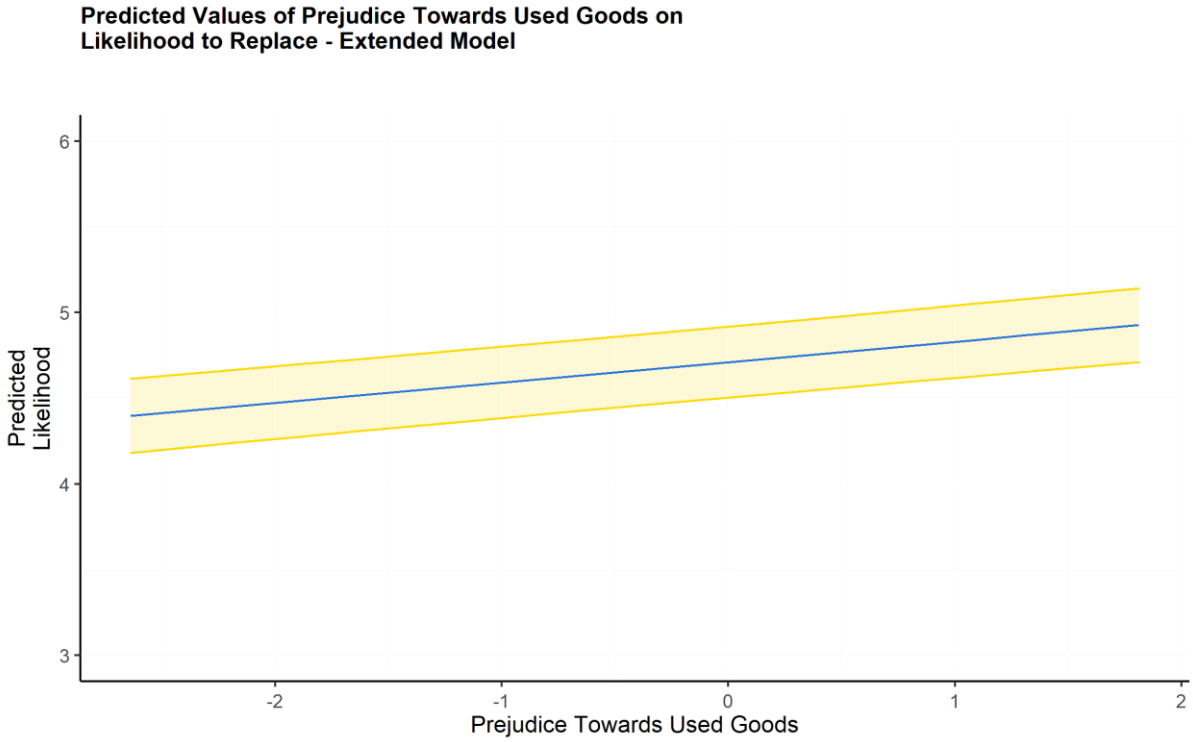
Regarding the likelihood to repair, there is a significant negative effect of consumers' prejudice towards used goods. The more prejudice towards used goods consumers have, the less likely they are to choose to have their product repaired. The effect is of small to moderate size.

Figure 24 - Effect of Prejudice Towards Used Goods on Likelihood to Repair



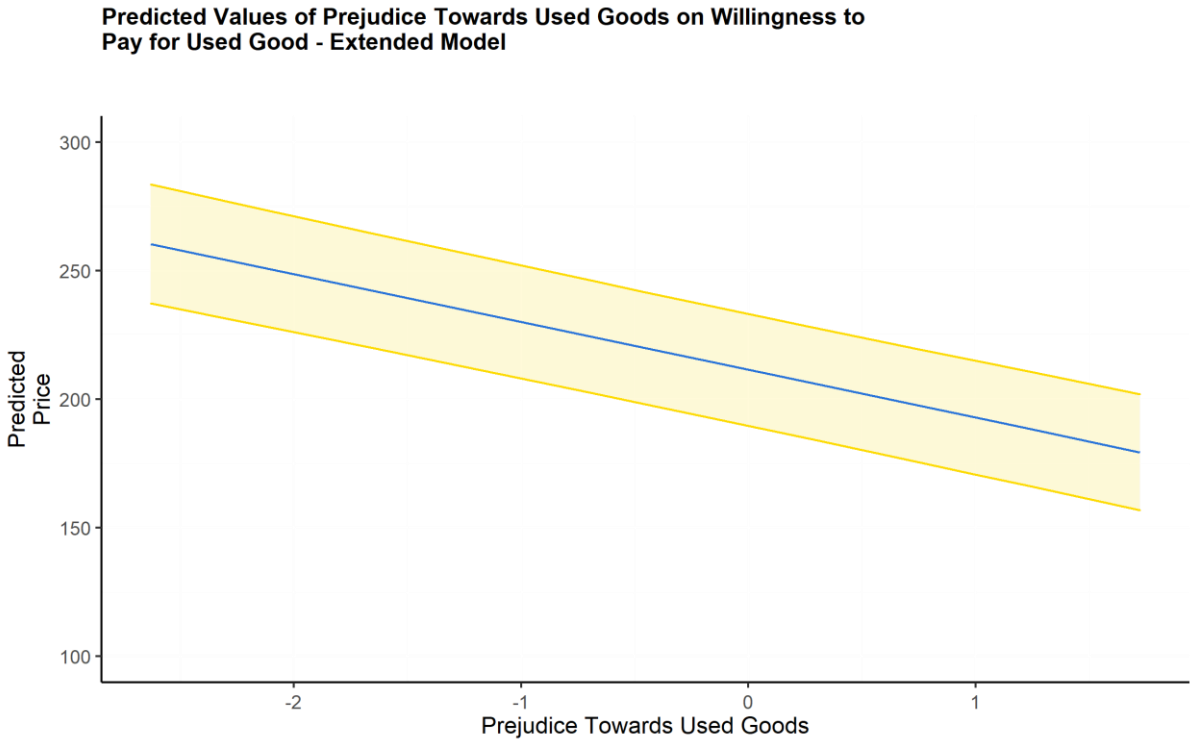
Similarly, there is a positive significant effect of consumers' prejudice towards used goods on their likelihood to have the product replaced. If consumers have a high level of negative attitudes towards used goods, they are more likely to decide to have their defective product replaced. The effect has a small to moderate size.

Figure 25 - Effect of Prejudice Towards Used Goods on Likelihood to Replace



Regarding their willingness to pay for used goods, a significant effect of consumers' prejudice towards used goods can be observed. The more strongly a consumer exhibits negative attitudes towards used products, the less they are willing to pay for such products. This effect has a moderate size.

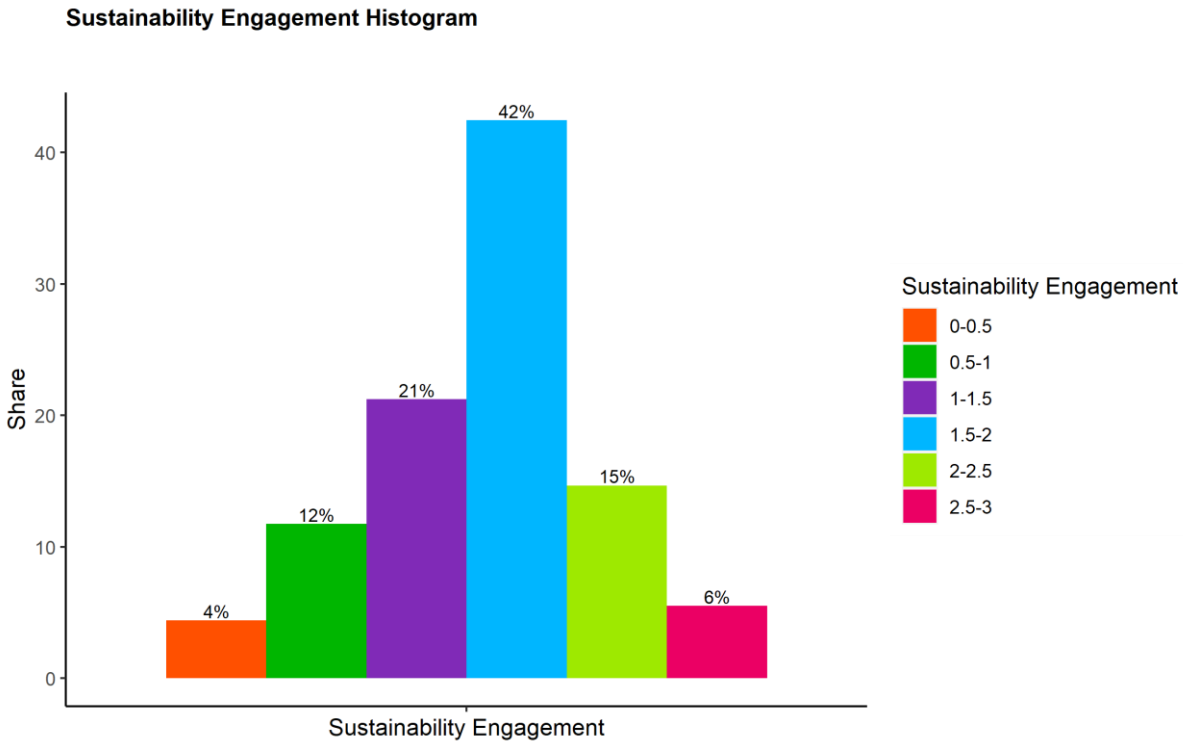
Figure 26 - Effect of Prejudice Towards Used Goods on Willingness to Pay



2.4.2.3. Sustainability engagement of consumers

The sustainability engagement index ranges from 0 to 3. Individuals with a sustainability engagement rating from 1.5 to 2 represent 42% of the participants. A share of 4% of participants showed a very low level of sustainability engagement (score 0-0.5). On the other hand, 6% are characterised by a very high engagement level (score 2.5-3).

Figure 27 - Sustainability engagement – distribution of responses

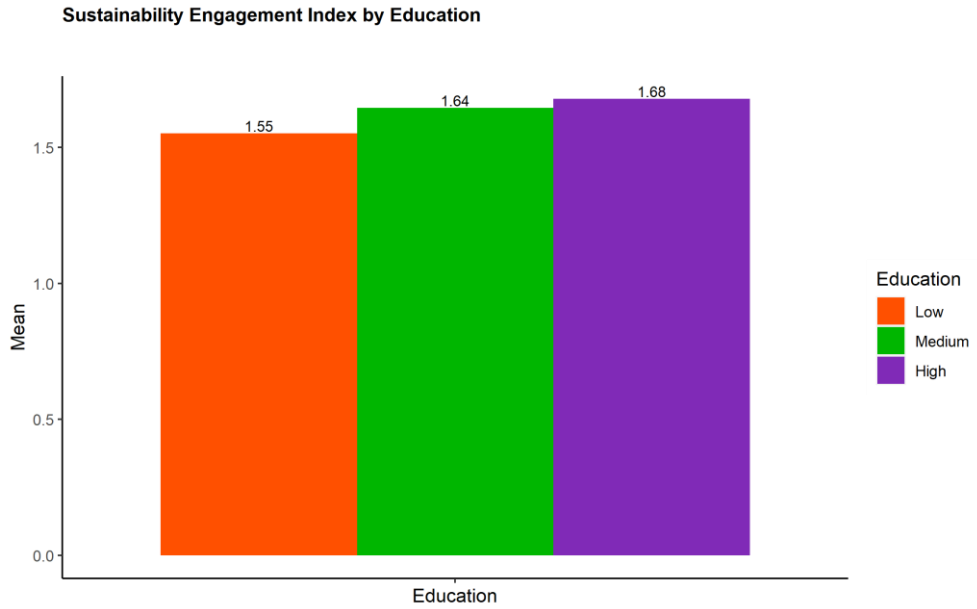


28

Considering **sociodemographic indicators**, it can be observed that:

- Gender has an influence on the level of sustainability engagement. Men have a slightly lower average score (1.59) than women (1.70).
- There is an effect of education on the level of sustainability engagement. Those with highest levels of education are more likely to have a high level of engagement (average score of 1.68), compared to those with lowest levels of education (average score of 1.55).
- Occupation also has an effect of the level of sustainability, with higher levels among the self-employed (1.71), students (1.7) and managers (1.67)

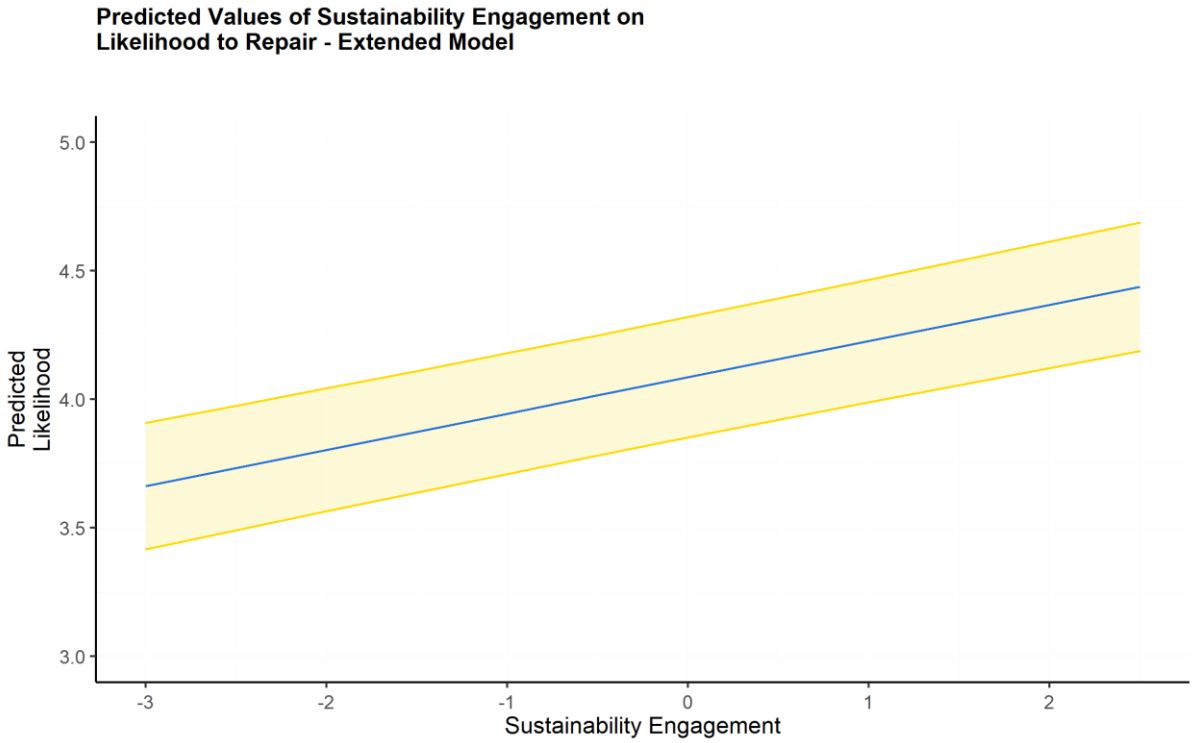
Figure 29 - Sustainability engagement by education level



Interestingly, there seems to be no significant difference by age and income regarding consumer's level of engagement in sustainable practices.

Considering the effect of the level of sustainability engagement on the likelihood to have a defective product repaired, the experiment reveals a significant positive effect. The higher the level of consumers' engagement in sustainable practices, the more likely they are to choose to have a defective product repaired. The effect size is moderate.

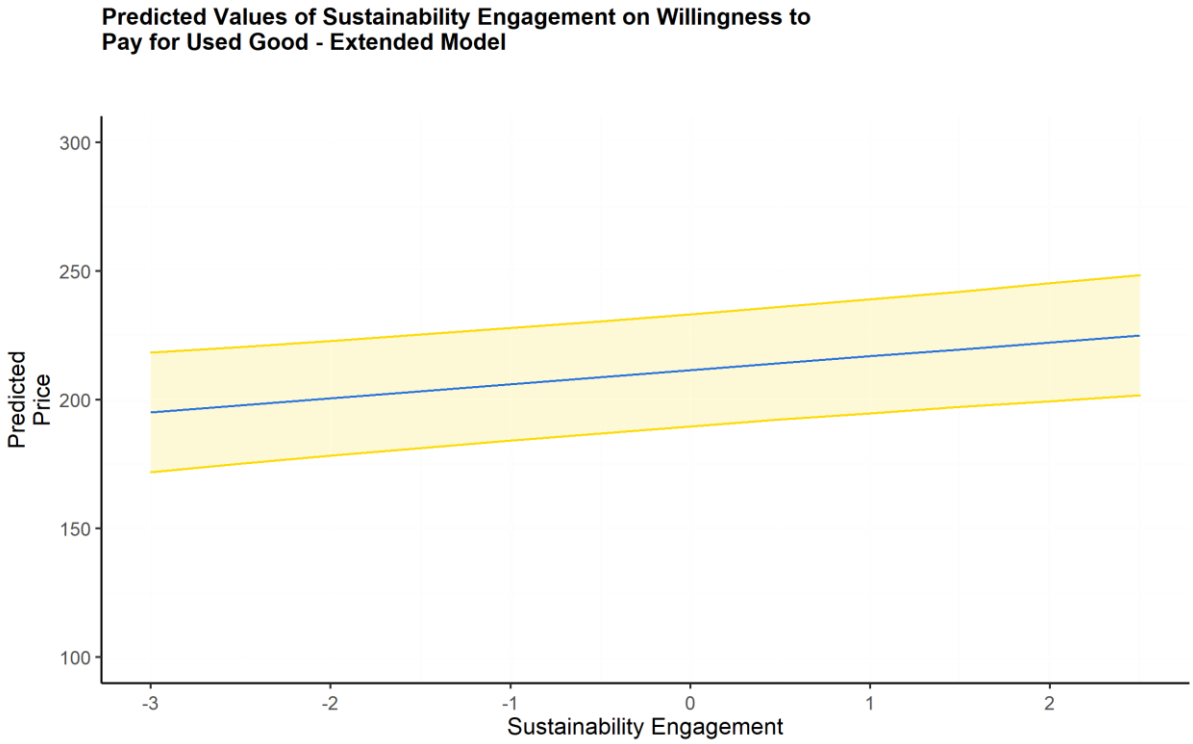
Figure 30 - Effect of Sustainability Engagement on Likelihood to Repair



However, conversely, there is no significant effect of the level of sustainability engagement on the likelihood of consumers to have a product replaced.

In terms of the effect on the amount consumers are willing to pay, a higher level of the sustainability engagement index corresponds to a higher willingness to pay for used goods. The more engaged in sustainable behaviour consumers are in their consumption choices, the higher is the price they are willing to pay for a used good that is either a second-hand or a refurbished product.

Figure 31 - Effect of Sustainability Engagement on Willingness to pay



2.4.2.4. Segmentation

As part of the analysis, a segmentation was carried out based in consumers experience with and attitudes towards repair services. The segmentation utilised the 'affinity to repair' index (which is based in question QB2) and the information about their choices to repair or replace when they experienced product defects (question QC5). For the purpose of the segmentation, the product 'cars' was excluded from the calculation of the 'affinity to repair' index. Respondents' prior experiences were determined through their answers to QC5, a question on how individuals responded to defects to seven possible products in the past. Priority was placed on replacing over repairing for individuals who had responded in both ways.

Based on their answers, respondents were classified into four groups:

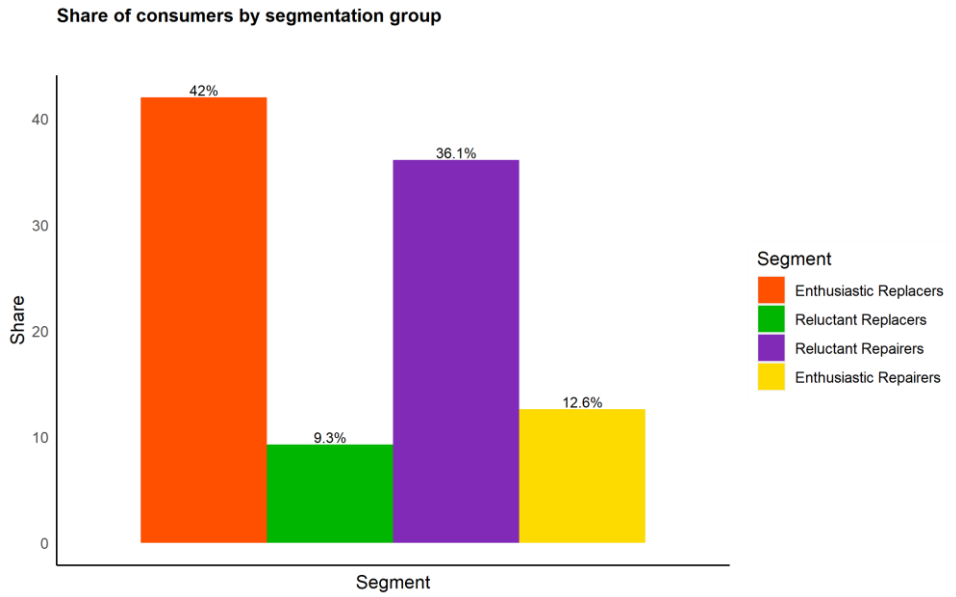
- Enthusiastic repairers: had defective products repaired and show high level of affinity to repair
- Reluctant repairers: had defective products repaired and show low level of affinity to repair
- Reluctant replacers: had replaced a defective product and show high level of affinity to repair
- Enthusiastic replacers: had replaced a defective product and show low level of affinity to repair

Since not all respondents had experienced defects (the question QC5 was filtered by QC2), only a subsample was included in the segmentation. Therefore, the answer base of the segmentation was reduced compared to the overall sample and included n=5,216 participants. An analysis was carried out that compared

the sample used for the segmentation against the total sample by sociodemographic characteristics to ensure that the subsample of the segmentation does not have a significant bias.

The following chart summarises the distribution in the population. Overall, 42% of participants are in the category of 'enthusiastic replacers', while 12.8% are classified as 'enthusiastic repairers'. A share of 36.1% are classified as reluctant repairers, meaning they repaired although they have a low affinity to repair defective products. On the other hand, 9.3% fall into the category of reluctant replacers, meaning they have replaced a defective product, although they have a high affinity to repair.

Figure 32 - Distribution of segments in the sample



2.4.3. Consumers' choices to repair and replace under different regulatory alternatives

In line with the agreed methodological approach, we carried out an experiment in which we tested the effect of several regulatory measures in the context of three generic products with different monetary values and usage patterns: a smartphone, a refrigerator, and a pair of shoes.

As detailed in section 2.4.1. Methodology, the experiment encompassed 19 distinct treatments with two of them (T3.01/T4.01 and T3.02/T4.02) being reflective of the current conditions (baseline) and thus being used as points of references further in this analysis that is presented in the following sections.

Due the high number of treatments, the overall sample size and the requirements for statistical power, the optimal design solution implemented consisted of a between-subject (treatments) and within-subject design (products). This means, each respondent was exposed to a particular pair of treatments which was repeated for them for a selection of two out of the three products. The two treatments of the pair of treatments to which a respondent was exposed differed by the age of the product only and otherwise referred to the same policy measure.

Given the implemented between-subject design, the effect of the exposure to the treatment pairs across the three products is analysed as multivariate mixed effects linear models having as dependent variables the likelihood to repair, the likelihood to replace and the willingness to pay.[28]

Based on the estimates obtained, in the following sections we will analyse the effects of the treatments on the measured outcomes and the impact that the rest of the explanatory factors have on increasing or decreasing the likelihood to repair/replace or the amount they are willing to pay[29].

2.4.3.1. Likelihood to repair and under the condition of suspended or restarted guarantee periods

This section looks into the effects of suspended or restarted guarantee periods on the likelihood to repair or replace. Below is a table outlining the specific treatments investigated within this section.

Table 9 - Treatments and the encompassed policy measure specifications (T3 treatments)

Treatment	Policy measure specifications
T3.01/T4.01	Repair and replacement covered, product age 0.5 years
T3.02/T4.02	Repair and replacement covered, product age 1.5 years
T3.1	Repair and replacement covered, product age 1.5 years, guarantee period suspended for repair duration
T3.21	Repair and replacement covered, product age 0.5 years, guarantee period restarts after repair only
T3.22	Repair and replacement covered, product age 1.5 years, guarantee period restarts after repair only

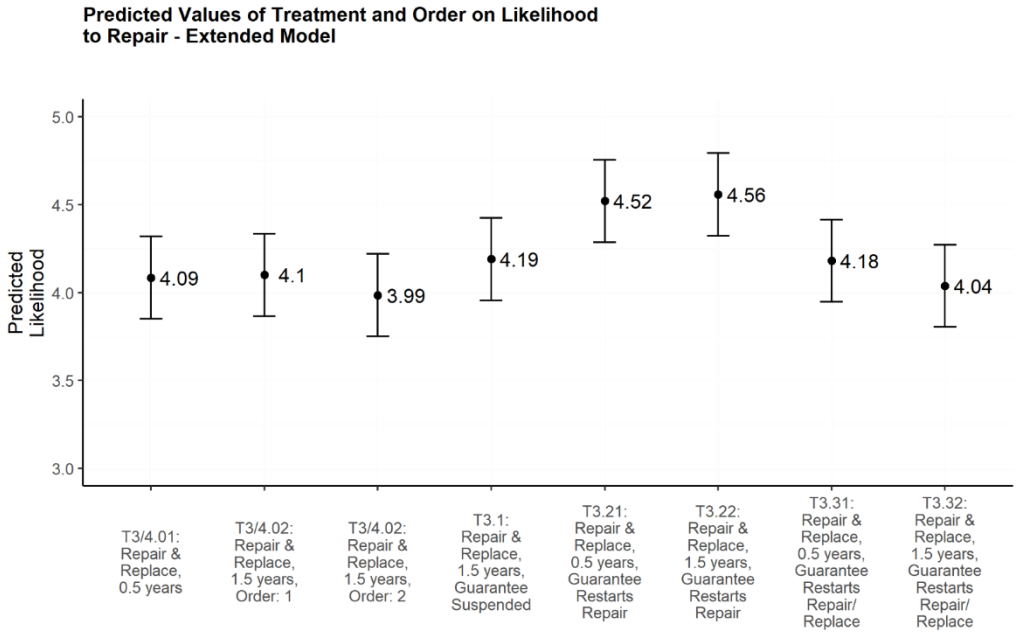
[28] For complete model specifications, results, and model diagnostics, see Table 12 - Likelihood to have product repaired replaced mixed-effects linear model (estimates and standard errors)**Error! Reference source not found.** and Table 13 - Price at which to buy used product mixed-effects linear model (estimates and standard errors).

[29] To enable a more consisted and robust interpretation of the results, all the explanatory factors measured as scales or continuous variables used in the models have been centred and scaled, thus the figures illustrating the results no longer used the original measurement units specified in the questionnaire.

T3.31	Repair and replacement covered, product age 0.5 years, guarantee period restarts after repair or replacement
T3.32	Repair and replacement covered, product age 1.5 years, guarantee period restarts after repair or replacement

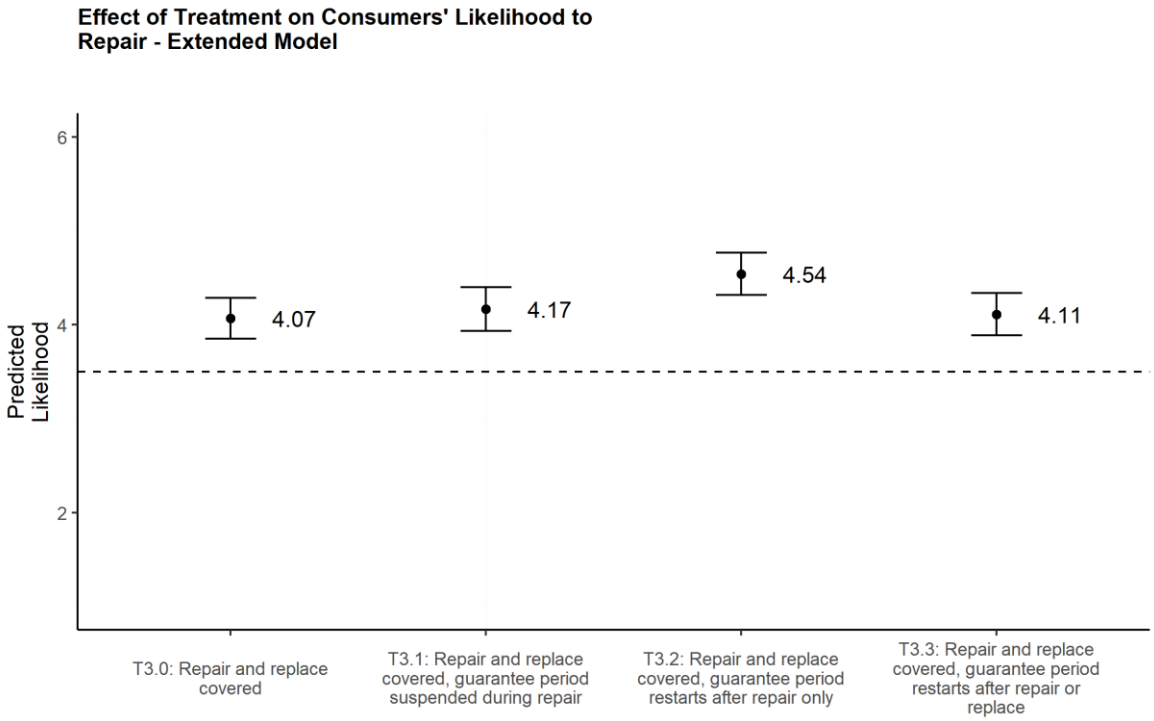
The likelihood to repair and to replace appear to be significantly affected by the policy measures encompassed in the above treatments. Participants who were exposed to the treatment that describes a condition under which the guarantee period restarts after the defective product has been repaired were considerably more likely to choose repair. This was the case for both products that were 0.5 and 1.5 years old. With regard to the suspended guarantee period for the duration of the repair, while we can observe a difference in effect size (4.19 compared to 4.09 in the baseline), this effect was not statistically significant. The scale ranged from 1 to 6, measuring the likelihood to repair, with 1 indicating the lowest likelihood and 6 the highest.

Figure 33 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to repair (T3 treatments)



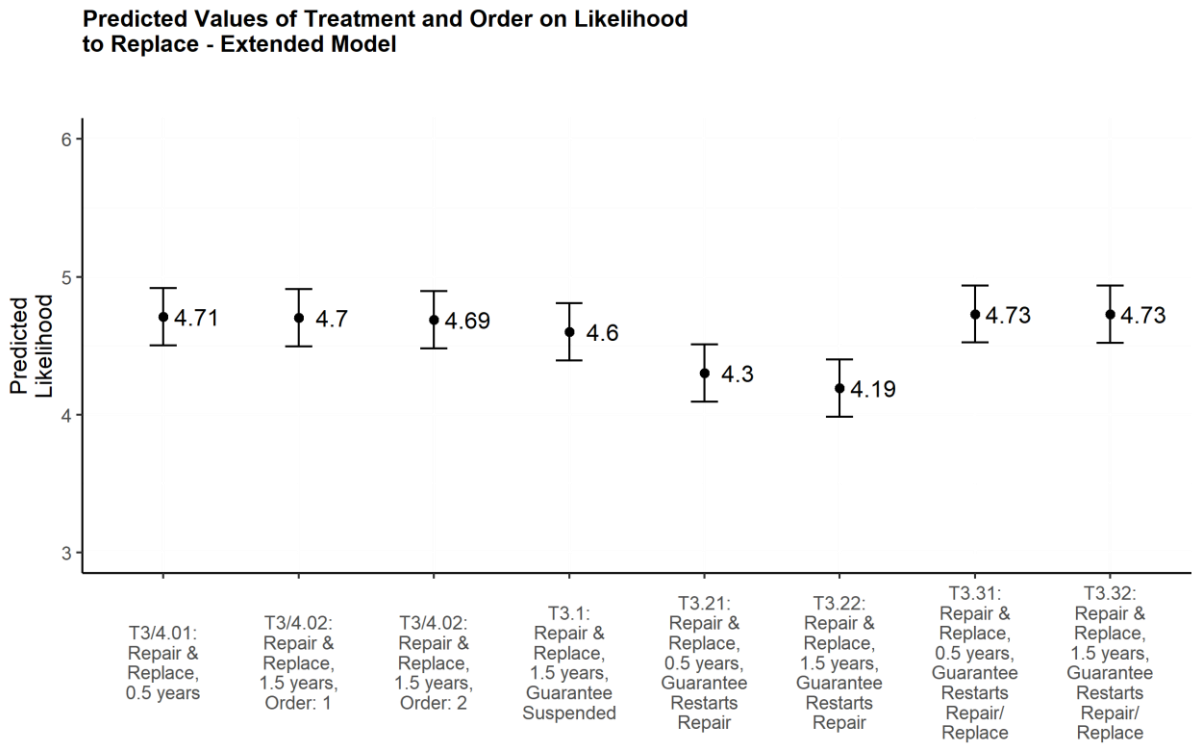
When the measures are grouped (not considering different product ages of the defective product), the differences in treatment effects are clearly visible. A restart of the guarantee period after the repair increases the predicted likelihood to have the product repaired to 4.54 compared to 4.07 in the baseline (an increase by 12%). The dotted horizontal line indicates the mid-point of the scale (3.5).

Figure 34 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to repair (T3 treatments grouped)



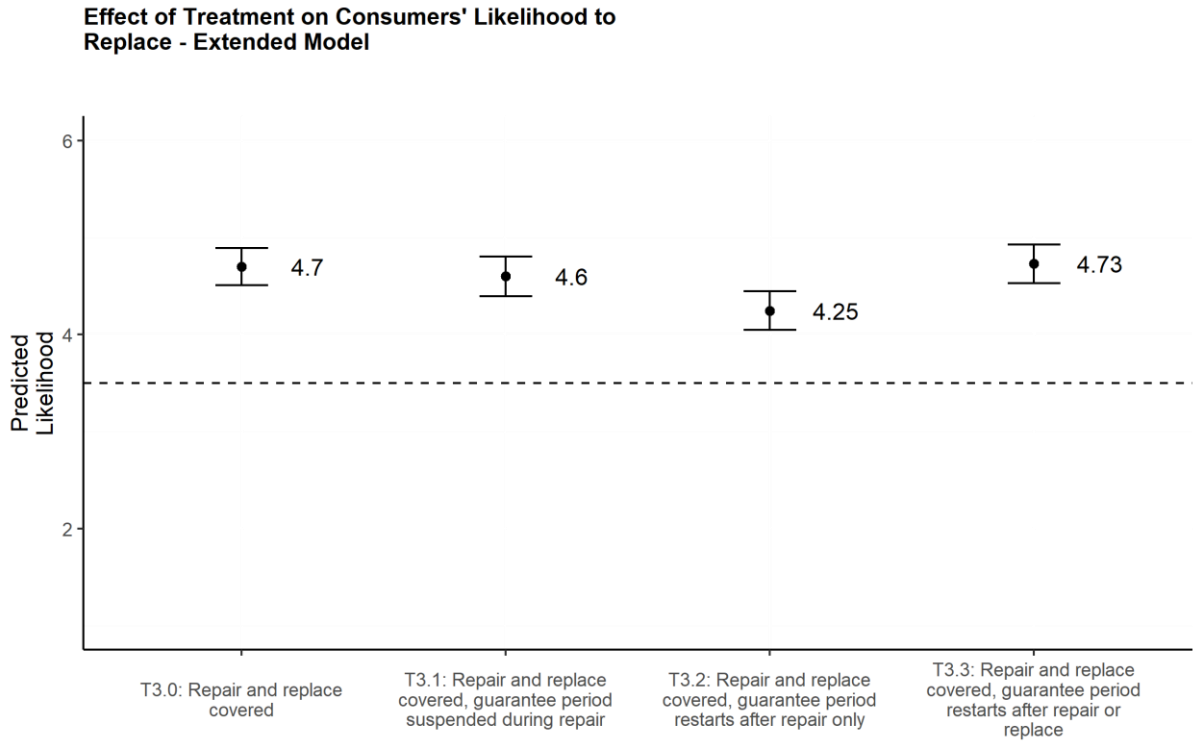
When it comes to the likelihood to replace the defective product, almost all alternative measures focusing on the interruption/suspension of the legal guarantee period tend to have similar predicted levels of likelihood. However, being exposed to the condition under which the guarantee period restarts after the repair decreased the likelihood of participants to replace the product significantly (treatments T3.21 and T3.22).

Figure 35 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to replace (T3 treatments)



With grouped measures (not considering different product ages of the defective product), the difference of the predicted likelihood to replace under the conditions of a restart of the guarantee period after the repair only is overall decreased to 4.25, compared to 4.7 in the baseline scenario.

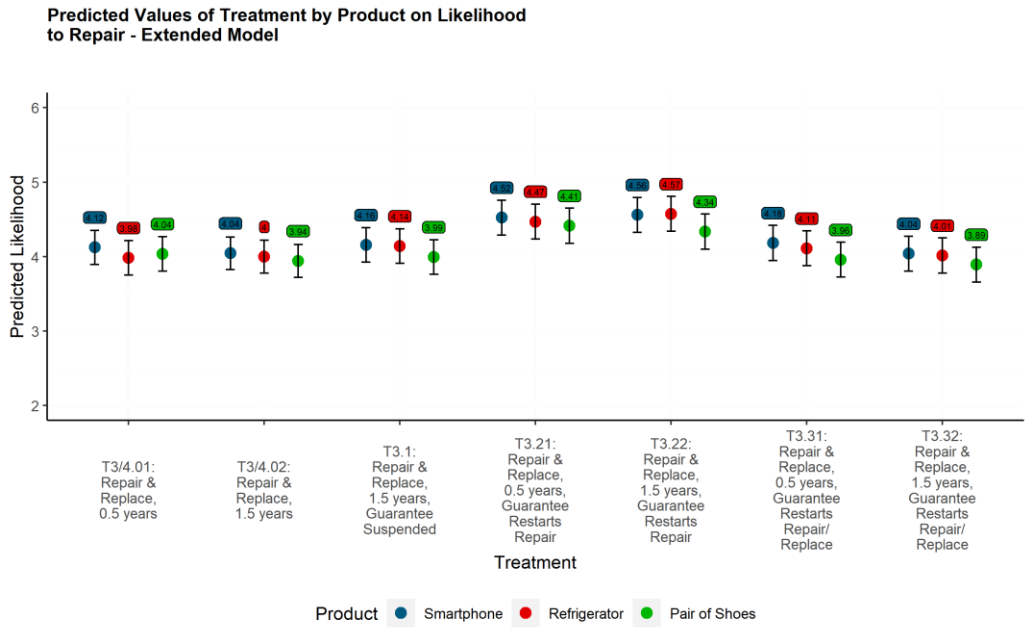
Figure 36 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to replace (T3 treatments grouped)



Product-specific differences

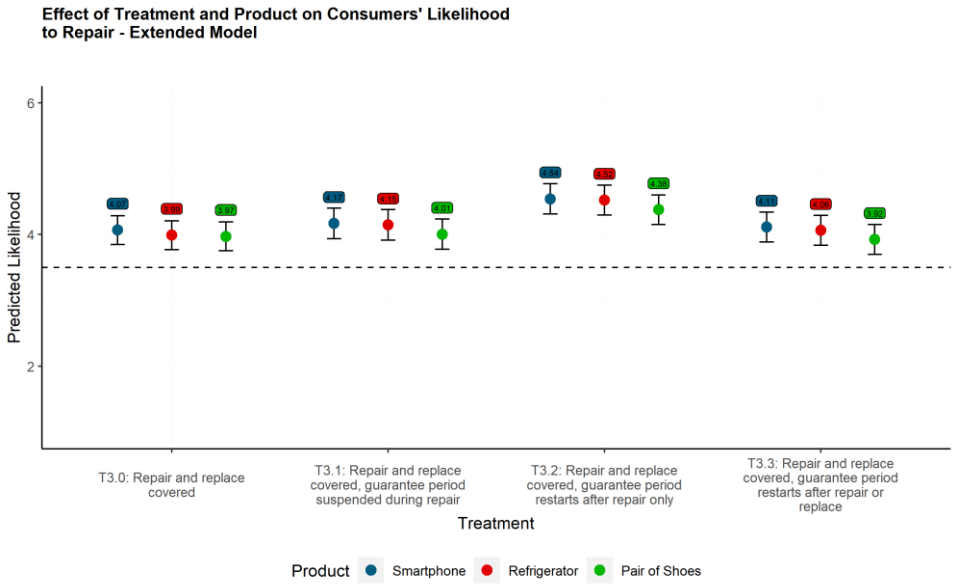
The below figure shows the effect of the interaction between the alternative measures for the interruption/suspension of the legal guarantee period (T3 treatments) and the products with the likelihood to repair. The likelihood estimates for each product within each measure tend to be grouped together, the differences being more evident *between* instead of *within* measures. Put differently, the differences between product types only have a minor influence on the decision of consumers to have their product repaired under the different measures.

Figure 37 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to repair by product (T3 treatments)



The same tendency is visible when considering the grouped measures (not considering the differences by product age), with few differences between product types when it comes to the likelihood of consumers to repair under different measures on interruption/suspension of the legal guarantee period.

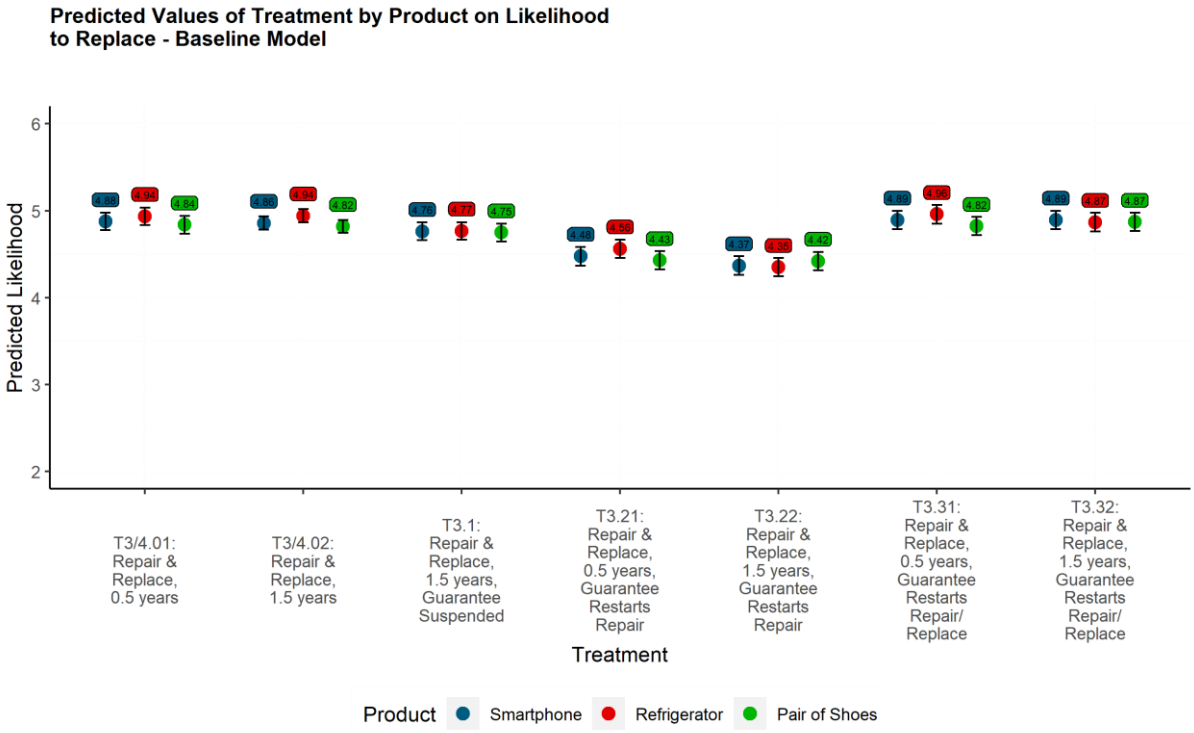
Figure 38 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to repair by product (T3 treatments grouped)



Similar patterns for the interaction between the products and the treatments corresponding to the two types of measures can be noticed when it comes to the likelihood to replace. Generally, the effect of the measures themselves has much

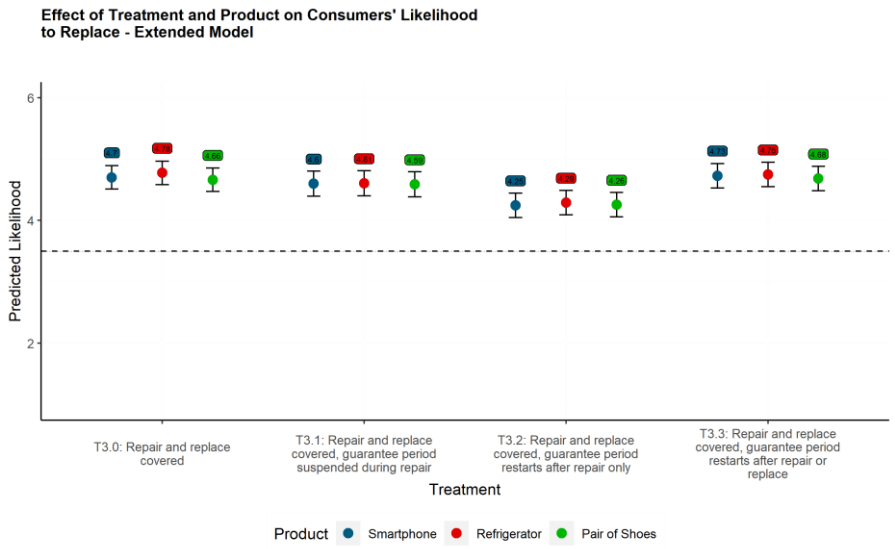
more influence on the likelihood to replace than the products. This means, the differences between products are small compared to the differences caused by the policy treatments.

Figure 39 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to replace by product (T3 treatments)



The same tendency is visible when measures are grouped (not considering the differences by product age), with only minor differences between product types.

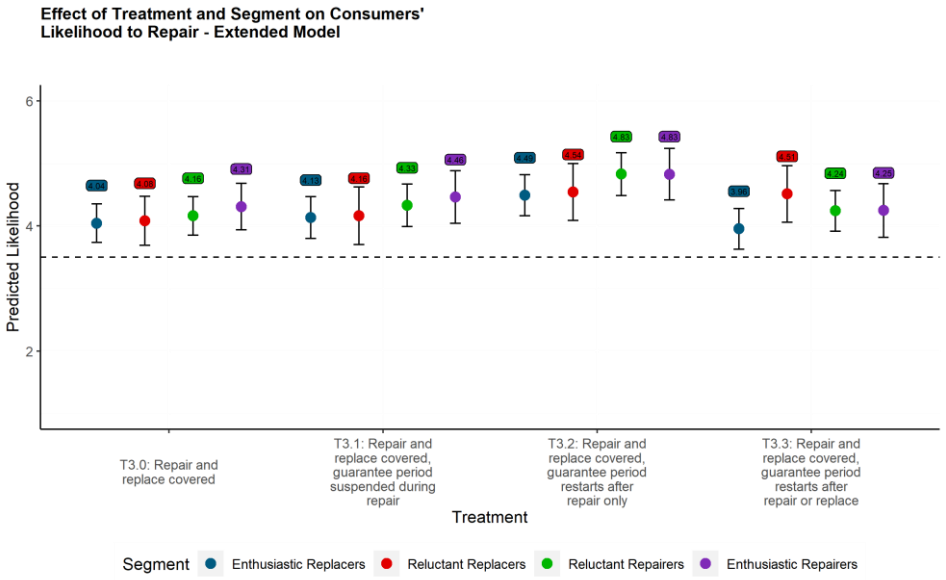
Figure 40 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to replace by product (T3 treatments grouped)



Differences between population segments

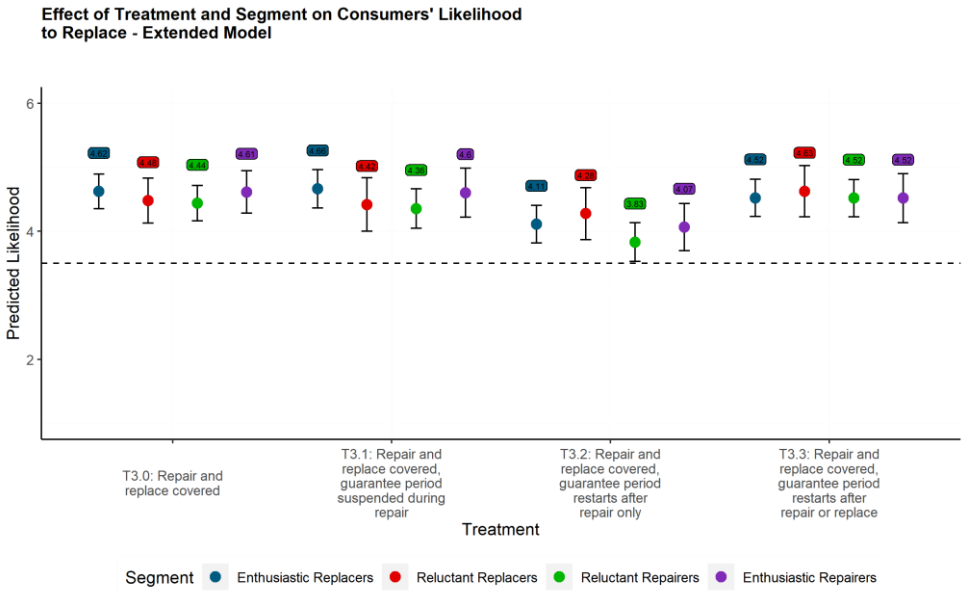
When the segmentation is applied to the results of the experiment, some differences between these population segments become visible. The highest increase of predicted likelihood to repair under the condition of the restart of the guarantee period can be observed for the group of reluctant repairers. Their likelihood to choose repair increases by 16% compared to the baseline scenario (from 4.16 to 4.83). For all segments except for reluctant replacers, the observed effects under this condition are significant.

Figure 41 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to repair by population segment (T3 treatments grouped)



Similarly, the likelihood of participants to choose to replace the product decreases considerably under the condition of a restart of the guarantee period. This effect is significant for all population segments except for the group of reluctant replacers.

Figure 42 - Effect of alternative measures for the interruption/suspension of the legal guarantee period on likelihood to replace by population segment (T3 treatments grouped)



2.4.3.2. Likelihood to repair under the condition of extended guarantee periods

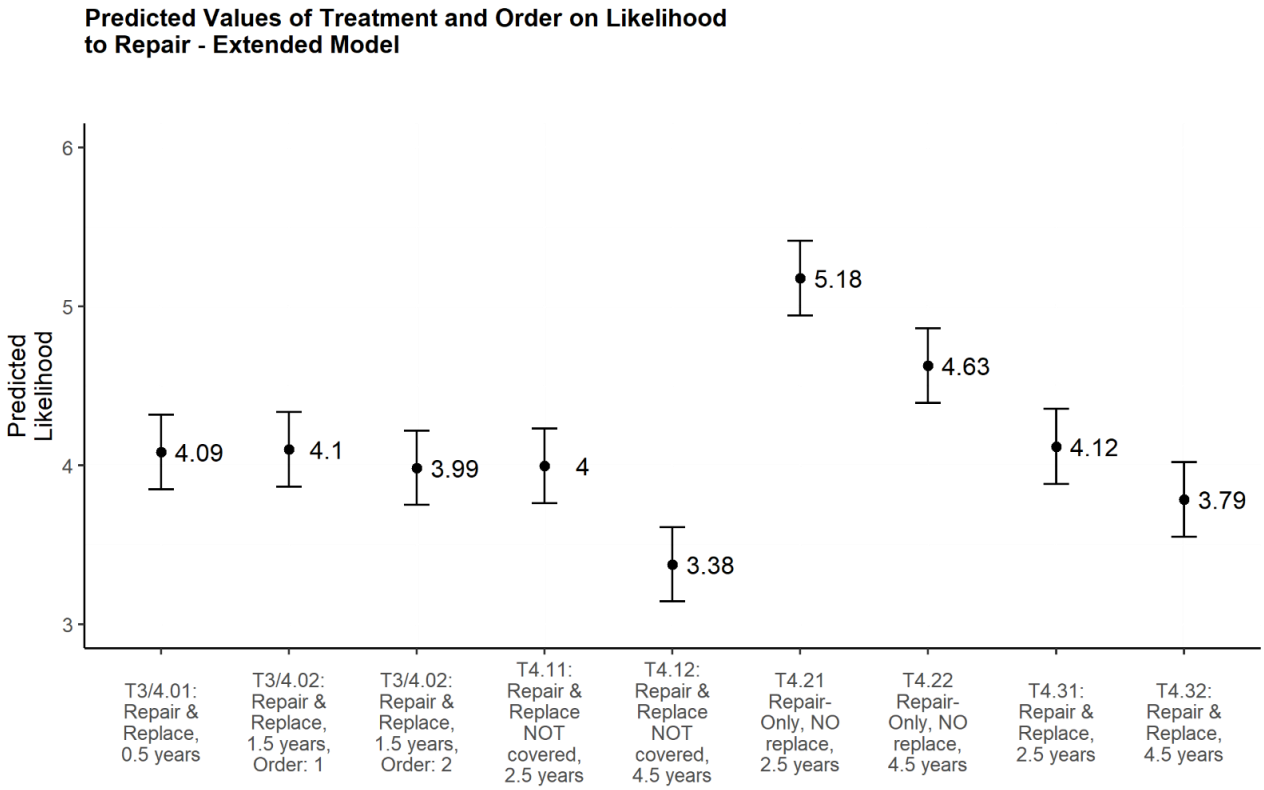
Part of the sample was exposed to treatments that relate to the extension of the legal guarantee period. With this part of the experiment, the effect was tested that this policy measure has on consumers' likelihood to repair or to replace defective products. In the following section, we present the analysis of these findings.

Table 10 - Treatments and the encompassed policy measure specifications (T4 treatments)

Treatment	Policy measure specifications
T3.01/T4.01	Repair and replacement covered, product age 0.5 years
T3.02/T4.02	Repair and replacement covered, product age 1.5 years
T4.11	Repair and replacement not covered, product age 2.5 years
T4.12	Repair and replacement not covered, product age 4.5 years
T4.21	Repair covered and replacement not covered, product age 2.5 years
T4.22	Repair covered and replacement not covered, product age 4.5 years
T4.31	Repair and replacement covered, product age 2.5 years
T4.32	Repair and replacement covered, product age 4.5 years

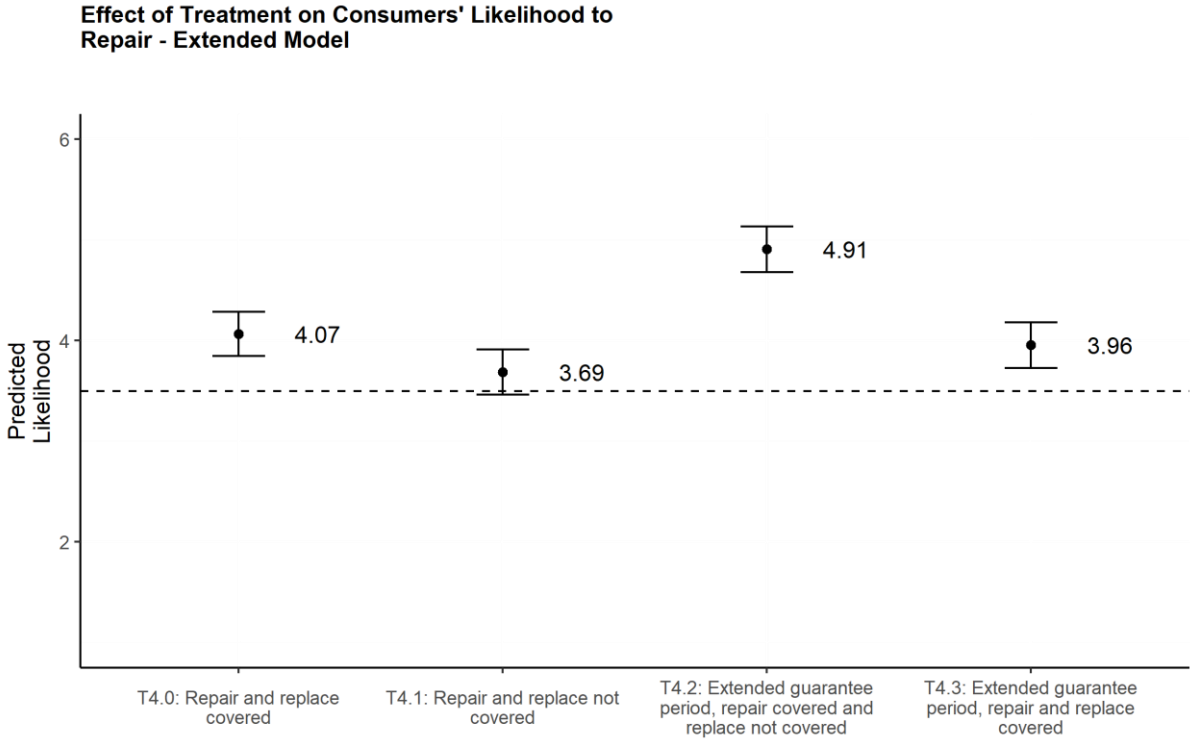
As shown in the below figure, the highest increase in likelihood to repair appears to be in the case of the measures under which the repair is covered by the liability while replacement is not covered (treatments T4.21 and T4.22). Unsurprisingly, the lowest likelihood for repair emerges in the case of the measure under which neither repair nor replacement are covered, and the product age is specified as 4.5 years old (treatment T4.12).

Figure 43 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to repair (T4 treatments)



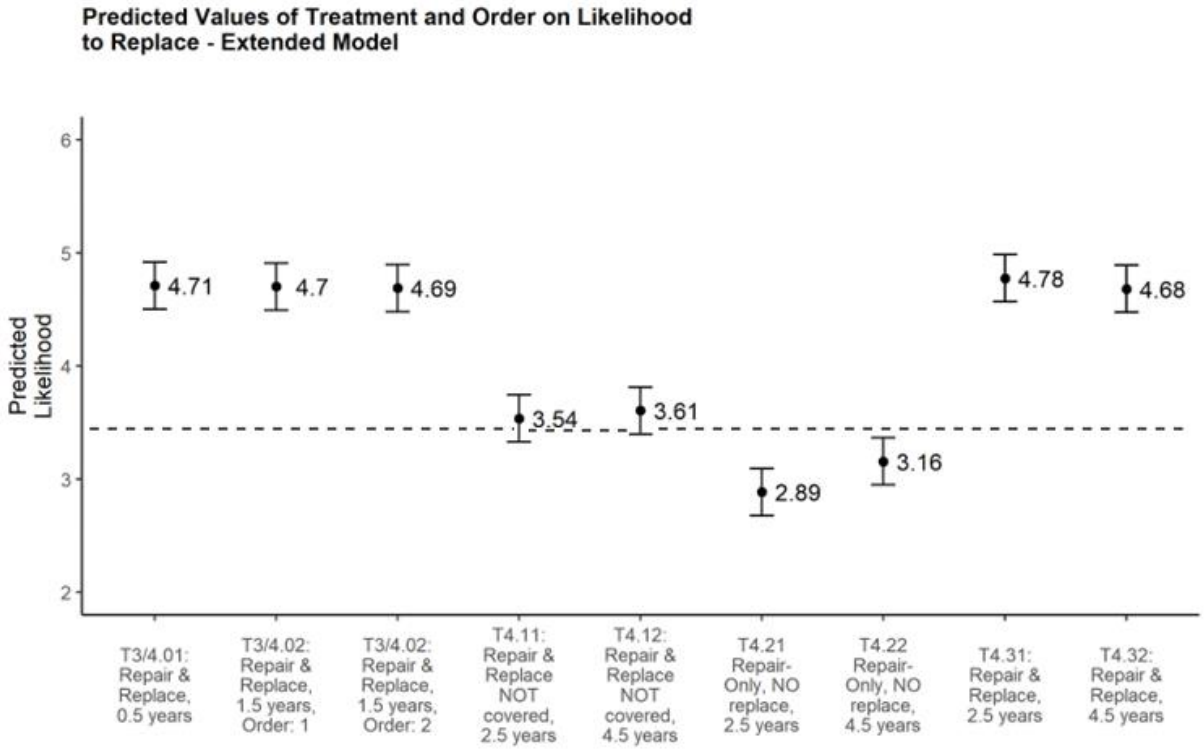
When considering the grouped results (not differentiating by product age), the positive effect of extended guarantee period covering repairs becomes clearly visible. The likelihood of consumers to have their product repaired under these conditions increased to 4.91, or by 21%, compared to the baseline.

Figure 44 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to repair (T4 treatments grouped)



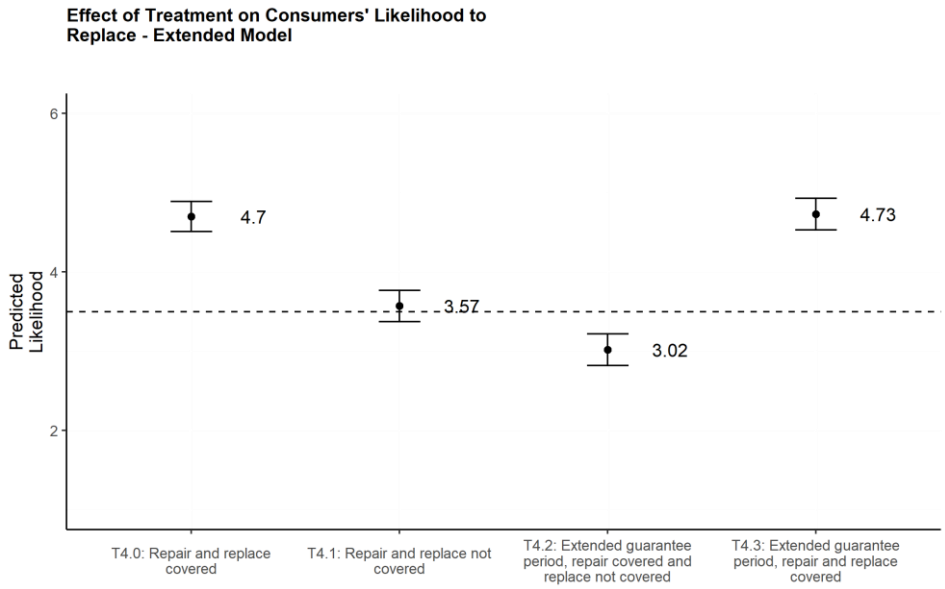
In the case of the measures extending the legal guarantee period, the lowest predicted levels of likelihood to replace appear to be in the case of the measures under which the repair is covered and replacement not covered (T4.21 and T4.22).

Figure 45 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to replace (T4 treatments)



When considering the grouped results, the likelihood to replace under the conditions of an extended guarantee period that covers repairs only, decreased to 3.02 compared to 4.7 in the baseline scenario (a decrease by 36%).

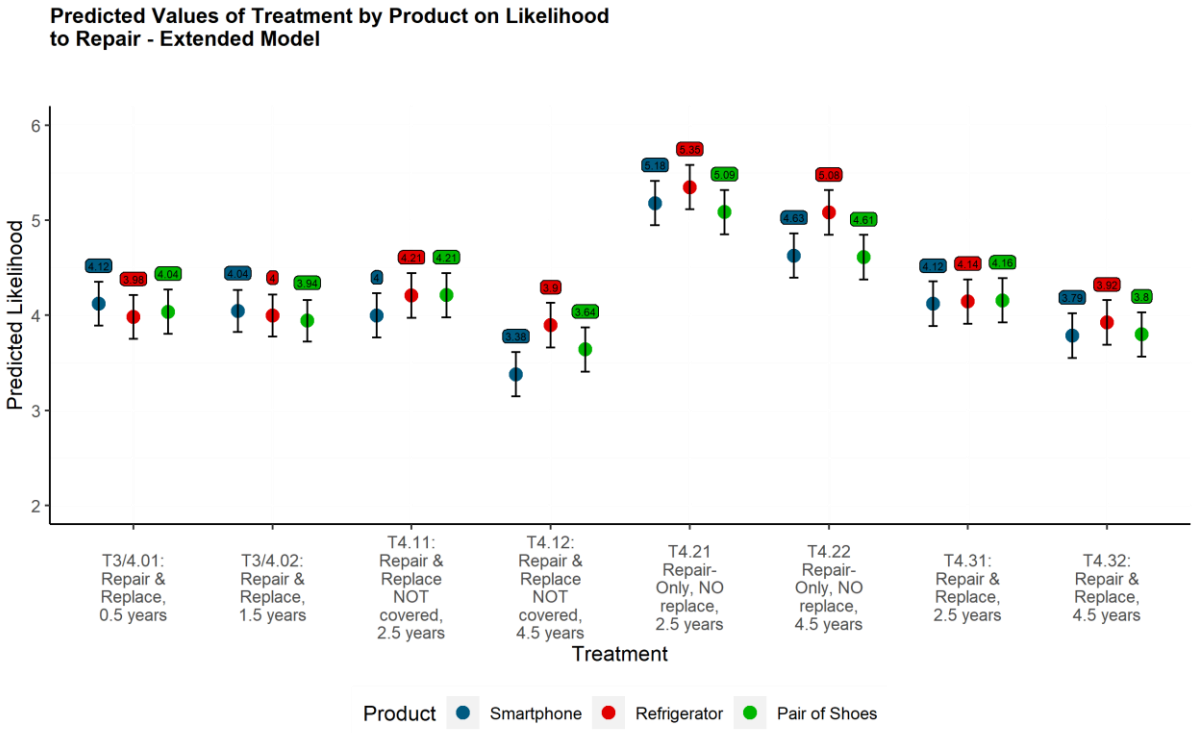
Figure 46 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to replace (T4 treatments grouped)



Product-specific differences

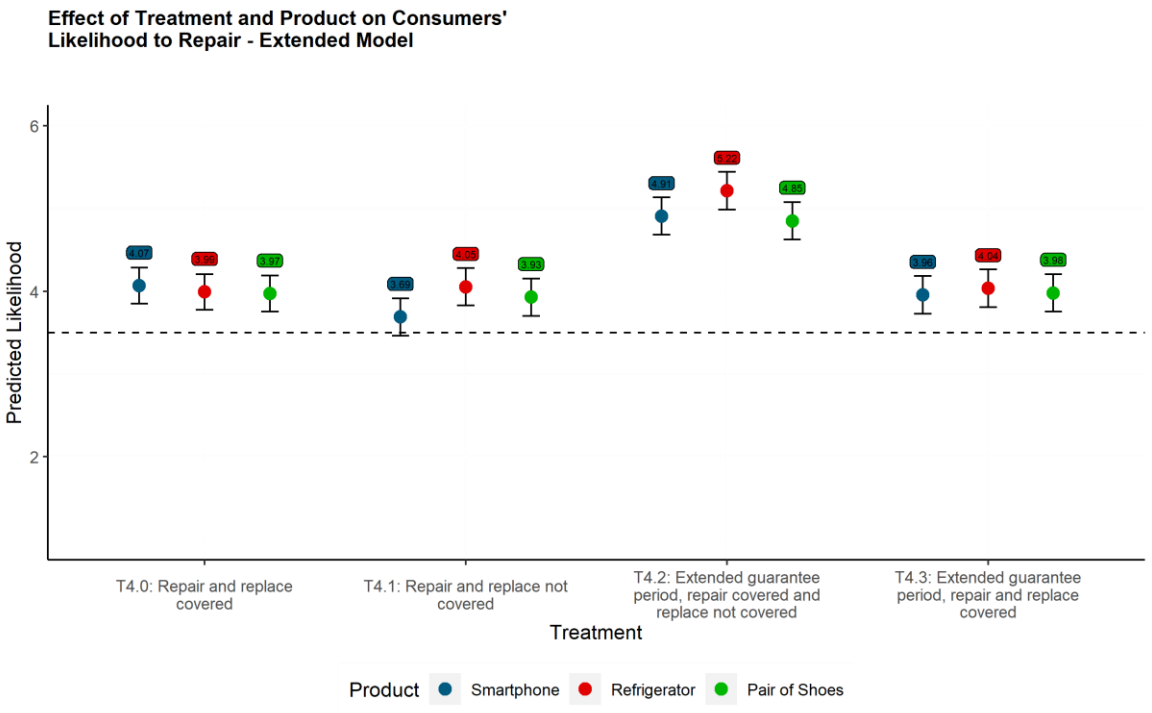
Considering product differences, few differences are noteworthy. Under the condition that neither repair nor replacement are covered, participants are significantly less likely to have a defective smartphone repaired compared to other products when it is 4.5 years old. On the other hand, under several conditions participants are more likely to have their defective refrigerator repaired than other products.

Figure 47 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to repair by product (T4 treatments)



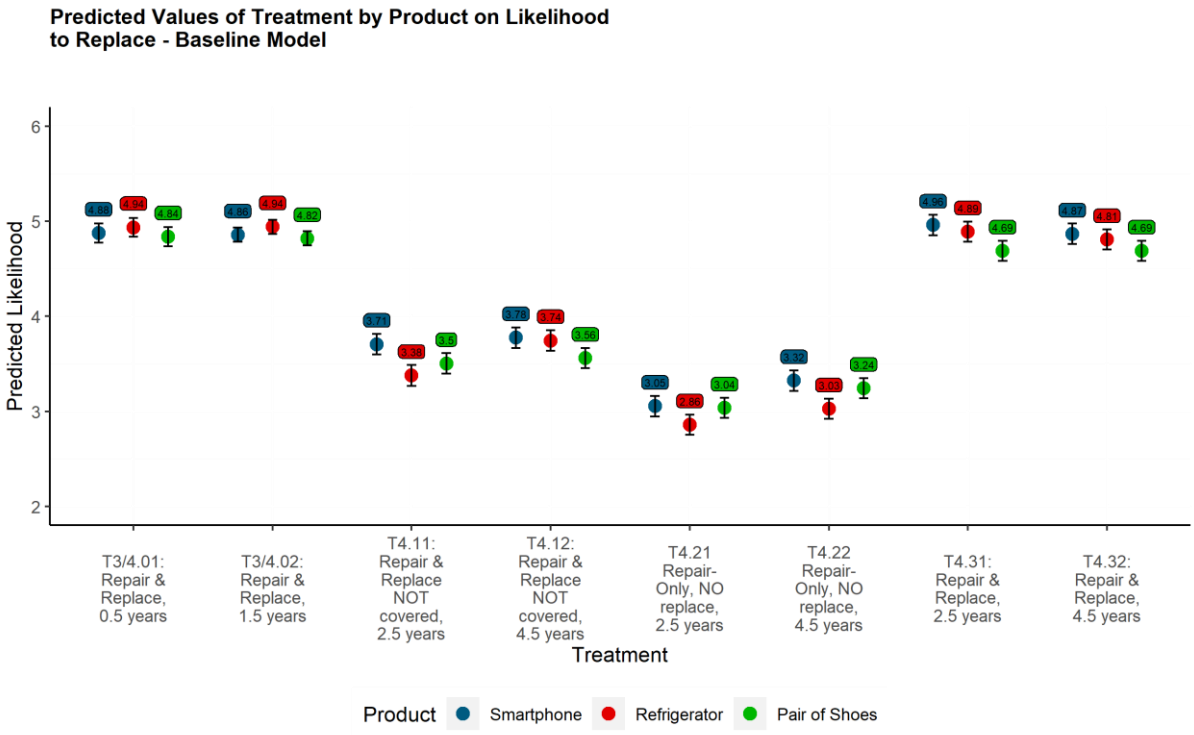
The differences as described above are also visible in the grouped treatments (not considering differences by product age). Consumers are more likely to have a defective refrigerator repaired under the conditions of an extended guarantee period than other products.

Figure 48 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to repair by product (T4 treatments grouped)



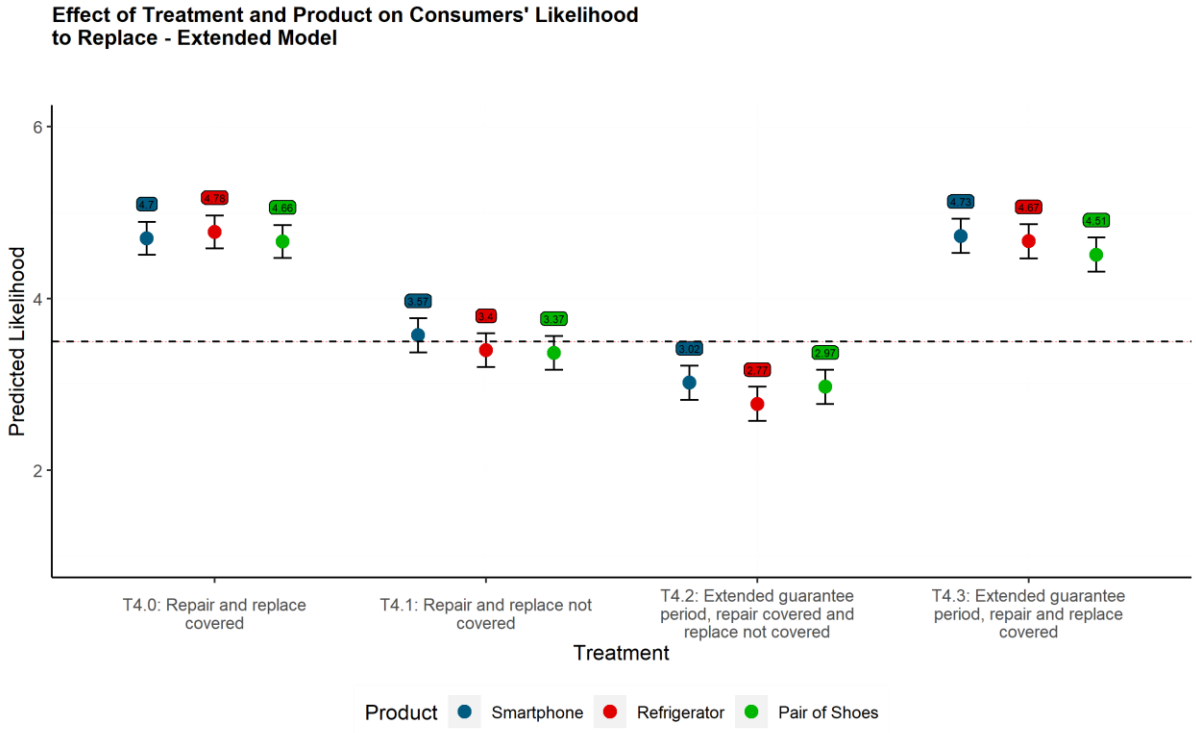
Conversely, the likelihood to replace a defective refrigerator is slightly lower under some conditions of an extended guarantee period compared to the likelihood in regard to other products.

Figure 49 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to replace by product (T4 treatments)



When looking at the grouped treatments (differences in the age of products not considered), the same tendency remains visible. Under the condition of an extended guarantee period for repairs, the likelihood to have a refrigerator replaced decreases more than that for the other tested types of products.

Figure 50 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to replace by product (T4 treatments grouped)



Differences between population segments

When considering different segments of the population, there are few relevant differences. However, the condition that the guarantee period is extended for repair, but not for replacement (treatment T4.2), leads to a significant increase for all four population segments. Under this condition, the relative increase is approximately the same for all four population segments.

Figure 51 - Effect of alternative measures for the extension of the legal guarantee period on likelihood to repair by population segment (T4 treatments grouped)

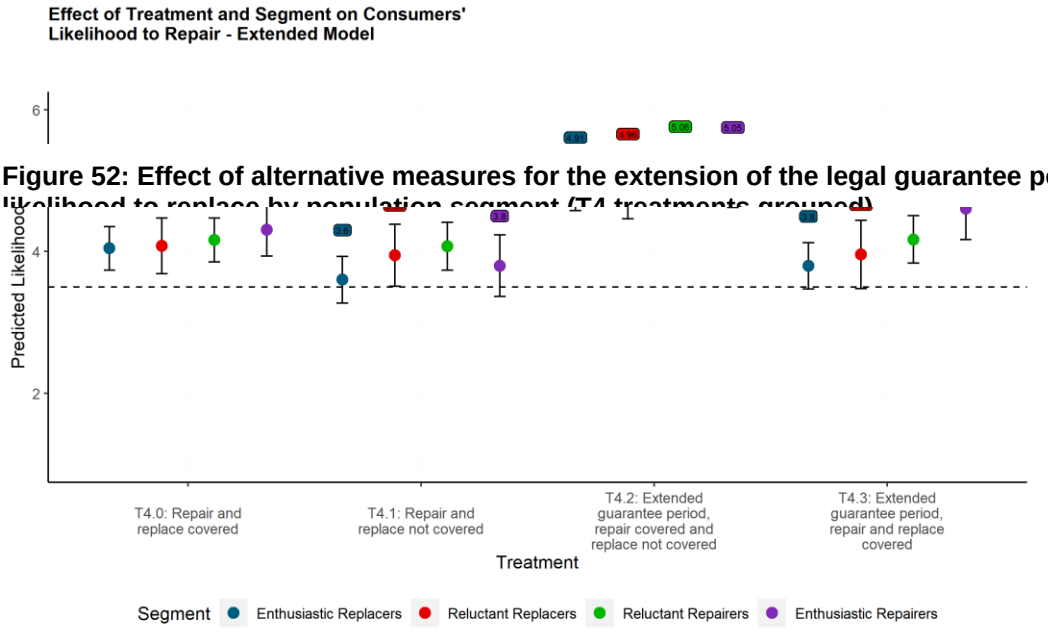
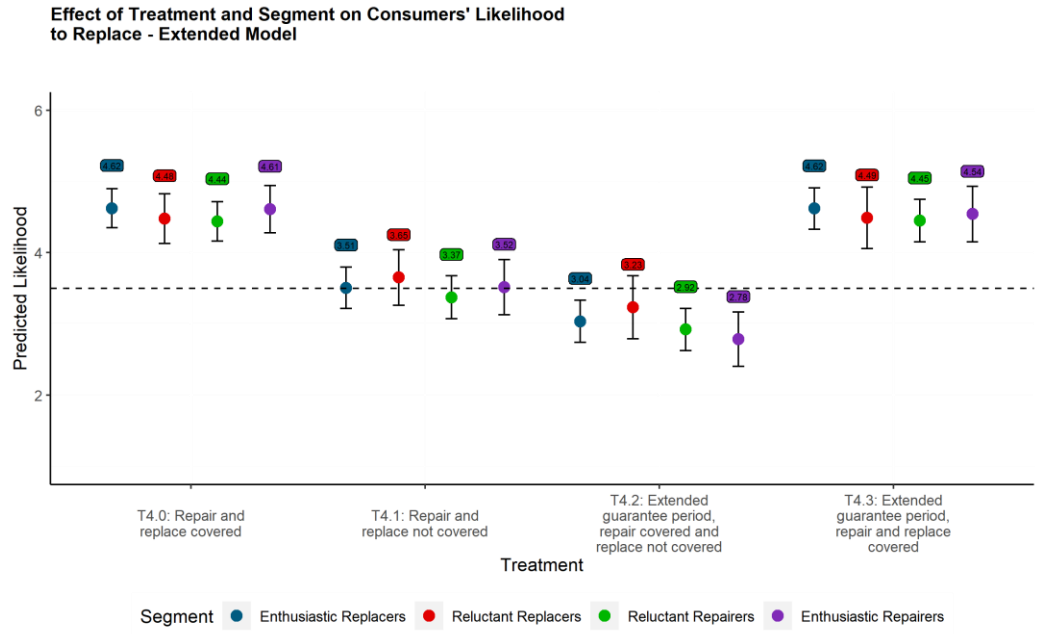


Figure 52: Effect of alternative measures for the extension of the legal guarantee period on likelihood to replace by population segment (T4 treatments grouped)

On the other hand, under the condition of an extended guarantee period for repairs (treatment T4.2), the likelihood for all four population segments to replace the defective product is significantly reduced. The highest relative decrease in the predicted likelihood to replace the defective product can be observed for enthusiastic repairers, with a decrease by 40% compared to the baseline.

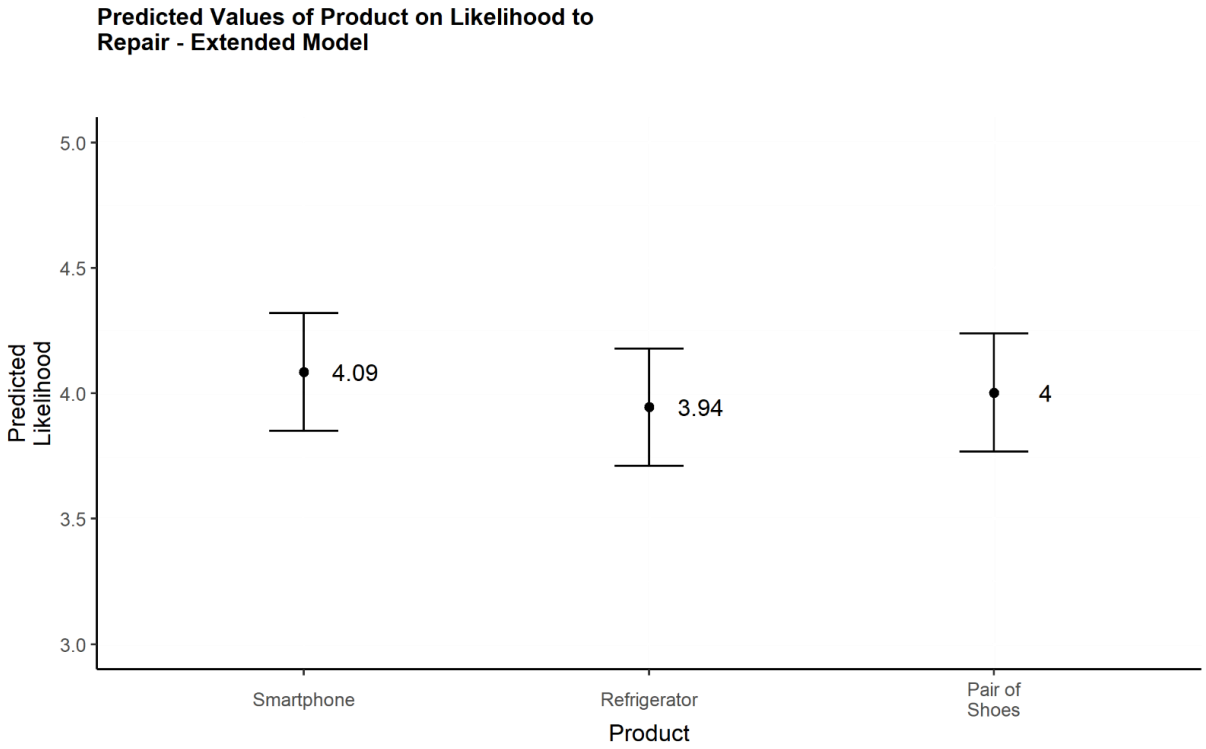


2.4.3.3. Sociodemographic characteristics of those who repair and other factors

Different types of consumer goods have different financial and non-financial values, different subjective and objective consumer utilities, while being characterised by different product lifespans and usage patterns. To capture the effect of these potential differences on the way in which the policy measures influence the likelihood to repair and replace and the amount consumers are willing to pay, the design included the three products in the context of which the participants were asked to perform the decision tasks.

According to the results, the effects are statistically significant in the case of willingness to repair, and the amount consumers are willing to pay but not in the case of the likelihood to replace.

Figure 53 - Effect of Product on Likelihood to Repair

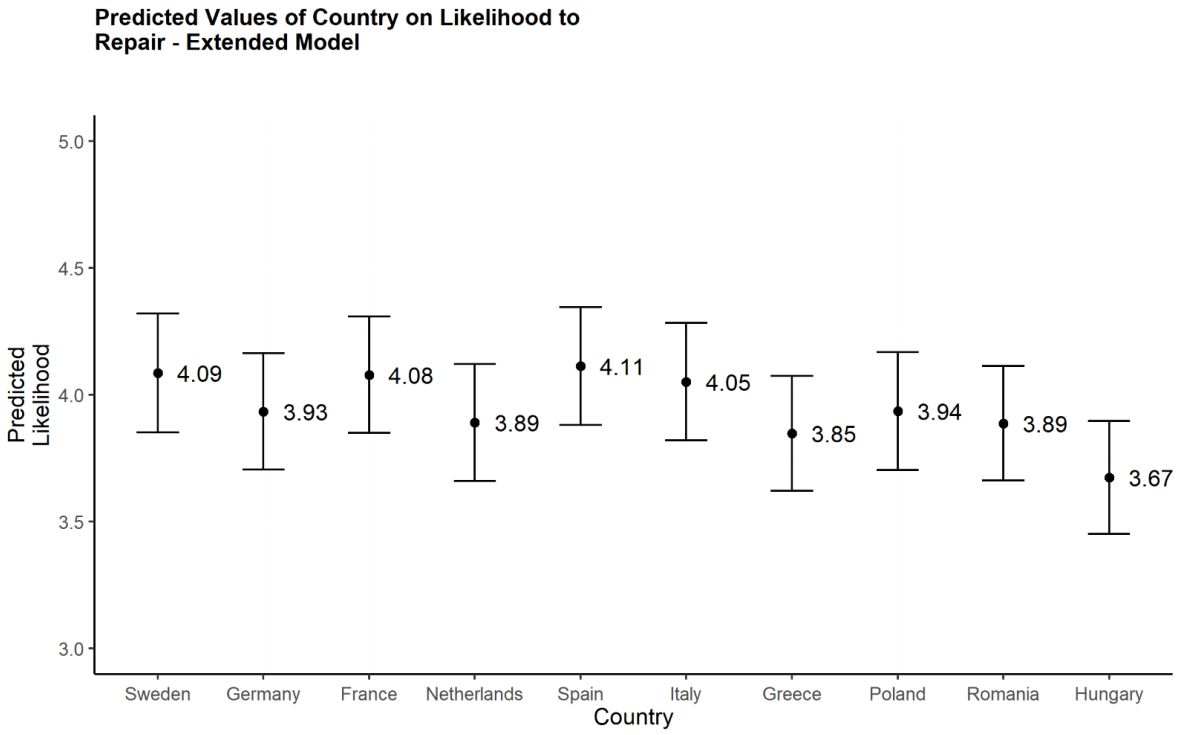


Nevertheless, as the above figure shows, the actual differences between the predicted likelihood to repair for product are not large enough to potentially diminish the robustness of the insights derived from the data with regards to the policy measures themselves. In other words, while the products themselves do matter for the consumers' decision to repair, the differences in the likelihood to repair under different measures are consistent within the measures themselves and are not influenced heavily by the products.

In addition to the attitudinal factors explaining the likelihood to repair and replace (affinity to repair, prejudice towards used goods, and sustainability engagement) discussed in section 2.4.2. Consumer attitudes towards repair and second-hand goods, several socio-demographic characteristics were also considered as potential explanatory factors.

The consumers' country has a statistically significant effect, the results showing differences between the countries within the scope of the study when it comes to the likelihood of repair, with the highest estimated one in Spain (4.11) and the lowest in Hungary (3.67).

Figure 54 - Effect of country on likelihood to repair



Differences between the countries appear also in the case of likelihood to replace, however they are not statistically significant.

Figure 55 - Effect of country on likelihood to replace

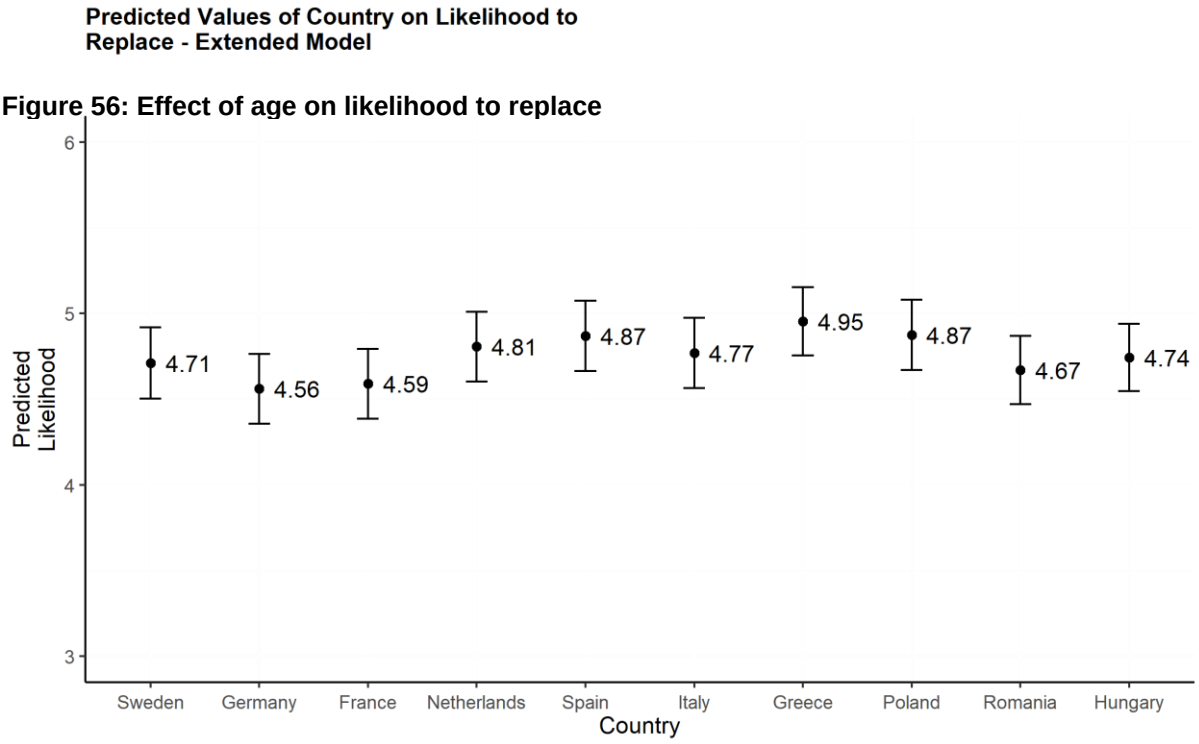
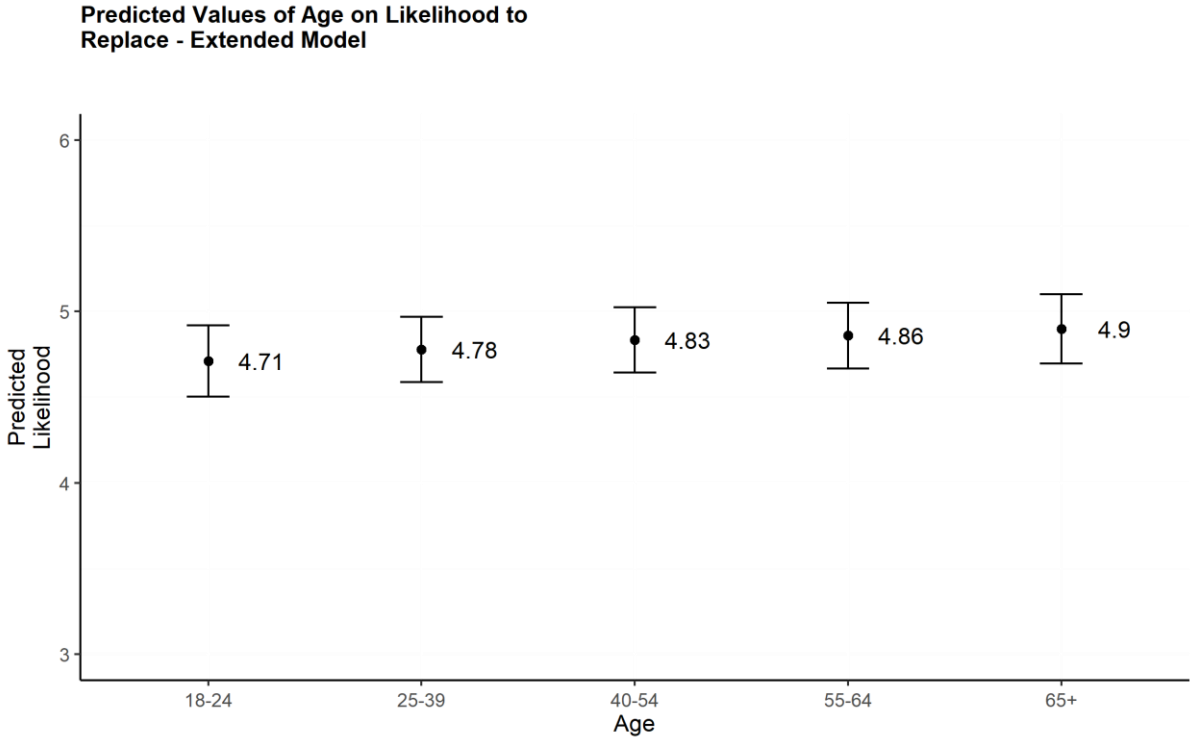


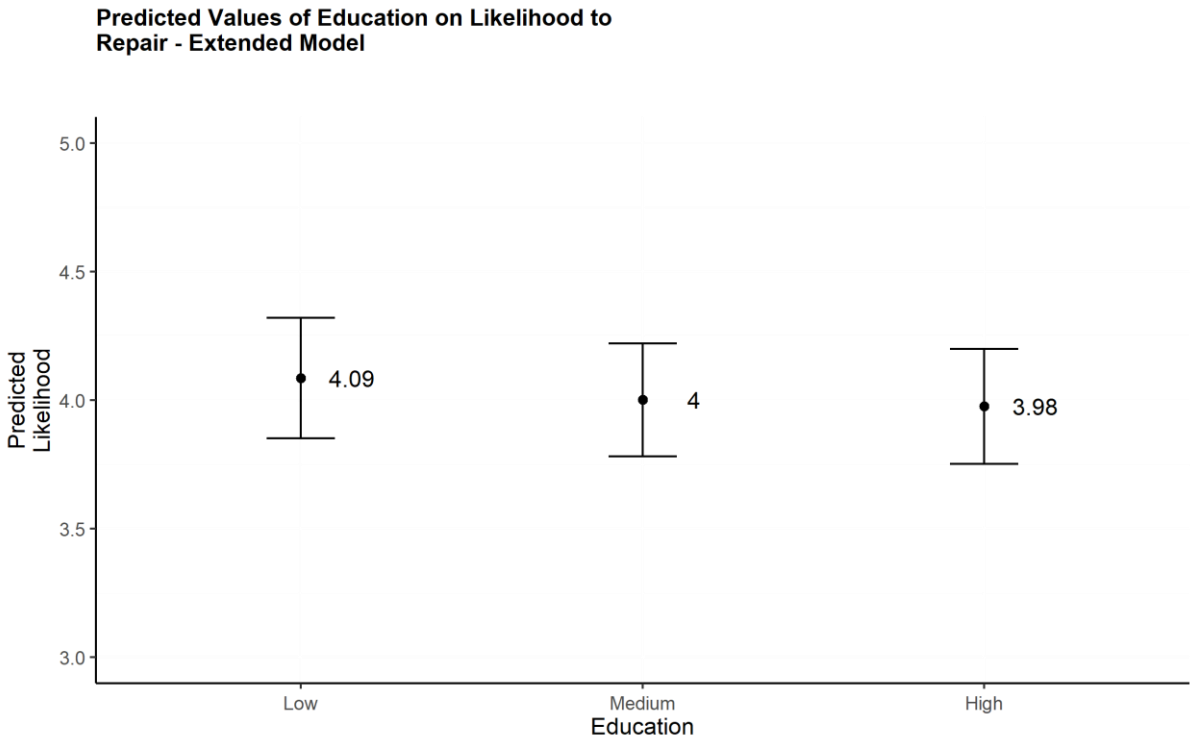
Figure 56: Effect of age on likelihood to replace

When it comes to the age of the consumers, while its effect on likelihood to repair is not statistically significant, there is however a very small tendency – statistically significant – for an increase with age of the likelihood to replace.



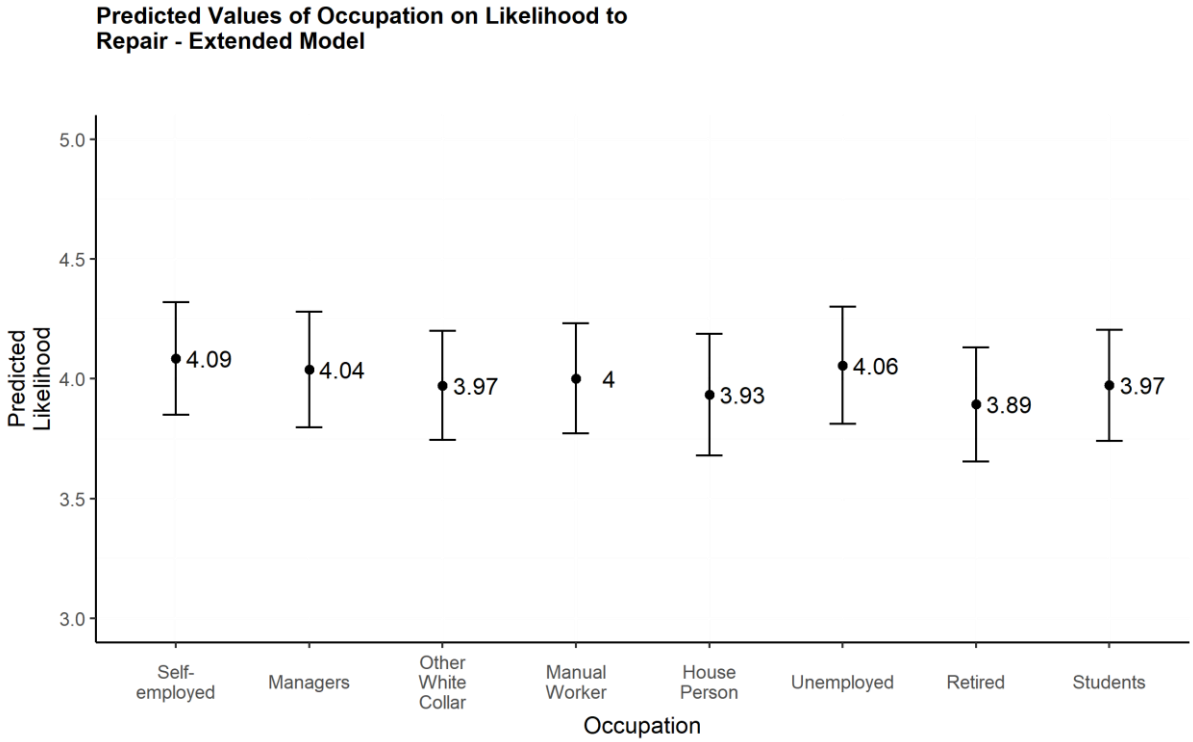
In the case of likelihood to repair, education as a very small effect: there appears to be a very small tendency for more educated consumers to have a slightly lower likelihood to repair than those consumers with a lower level of education. However, these differences are not statistically significant.

Figure 57 - Effect of education on likelihood to repair



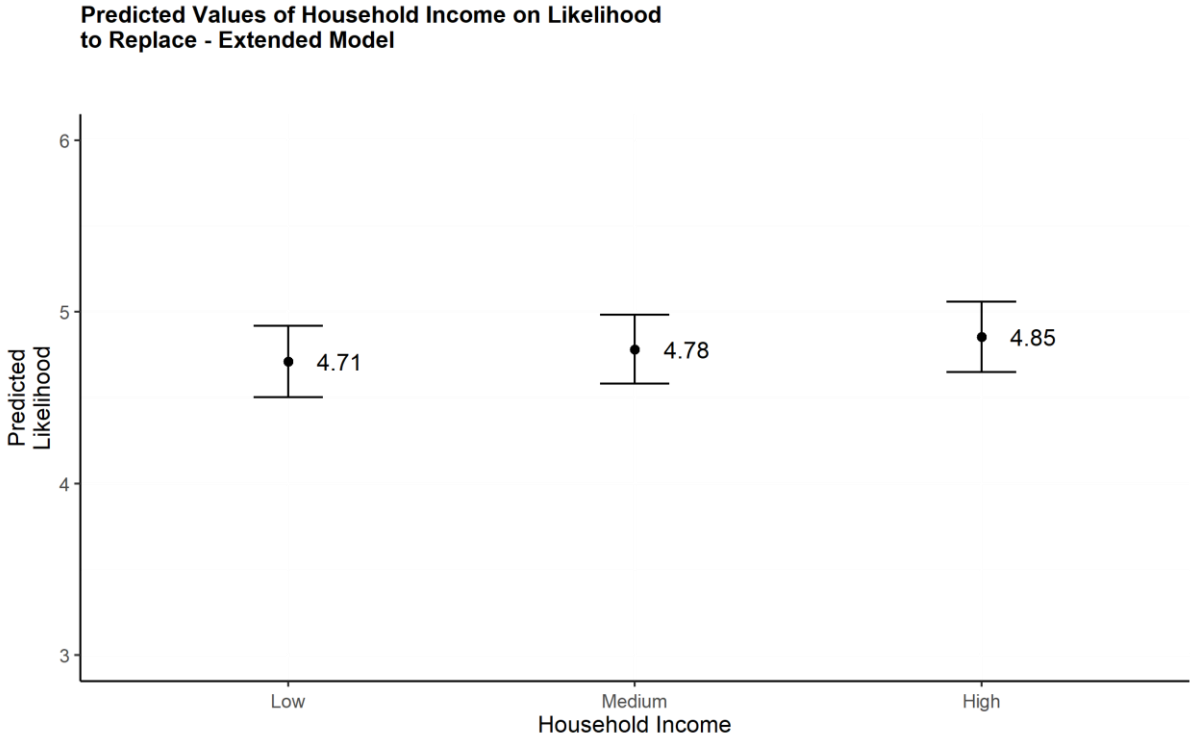
In a similar manner – the effect being statistically significant just in the case of likelihood to repair – the retired consumers have a slight tendency to exhibit a lower likelihood to repair than other occupational groups.

Figure 58 - Effect of occupation on likelihood to repair



When it comes to the likelihood to replace, the results of the multivariate analysis show that the household income has a statistically significant effect on it: there is a statistically significant, slightly higher likelihood for consumers with high incomes to replace.

Figure 59 - Effect of household income on likelihood to replace



2.4.3.4. Willingness to pay for used goods under the condition of aligned guarantee periods

As detailed in section **2.4.1. Method**, a third experimental component of the questionnaire related to policy measure that seek an alignment of the legal guarantee period for used goods with the legal guarantee period for new products.

This component comprised a two-stage decision task which, having as reference a new product with a 2-year guarantee period, was aimed at firstly assessing the value consumers placed on a used product with a 1-year guarantee period relative to the new product, and secondly, the value consumers place on a used product with a 2-year guarantee period compared to the same used product with a 1-year guarantee period. This was tested with three types of used products: second hand products, low refurbished products, and high refurbished products.

The following table summarises the specifications of the individual treatments that were used in the experimental assessment of this measure.

Table 11 - Treatments and the encompassed policy measure specifications (T5 treatments)

Treatment	Policy measure specifications
T5.11	Willingness to pay for second hand-product, 1-year guarantee period
T5.12	Willingness to pay for second hand-product, 2-year guarantee period
T5.21	Willingness to pay for lowly refurbished product, 1-year guarantee period

T5.22	Willingness to pay for lowly refurbished product, 2-year guarantee period
T5.31	Willingness to pay for highly refurbished product, 1-year guarantee period
T5.32	Willingness to pay for highly refurbished product, 2-year guarantee period

The definition of second-hand, lowly and highly refurbished is provided below:

	Used item	Functional	Cleaned	Prior user data deleted	Functionality tested by technical expert, structurally repaired if necessary	Professionally cleaned and sanitised	Preventive repairs or replacements of parts	Looks like new, aesthetically repaired if necessary
1. Second hand	1	1	1	1				
2. Refurbished (low)	2	2	2	2	2	2		
3. Refurbished (high)	3	3	3	3	3	3	3	3

Based on the design of the experiment, in a sequential approach, participants were asked to choose between pairs of matched products, the first one being constant in terms of all information provided – the reference product – while the price for the other one[30] (the one subject to experimental manipulation) kept decreasing until the participants chose the manipulated product. The decision task was presented in the context of the same three products, a smartphone, a refrigerator, and a pair of shoes, following the completely random allocation of the participants to the experimental groups.[31]

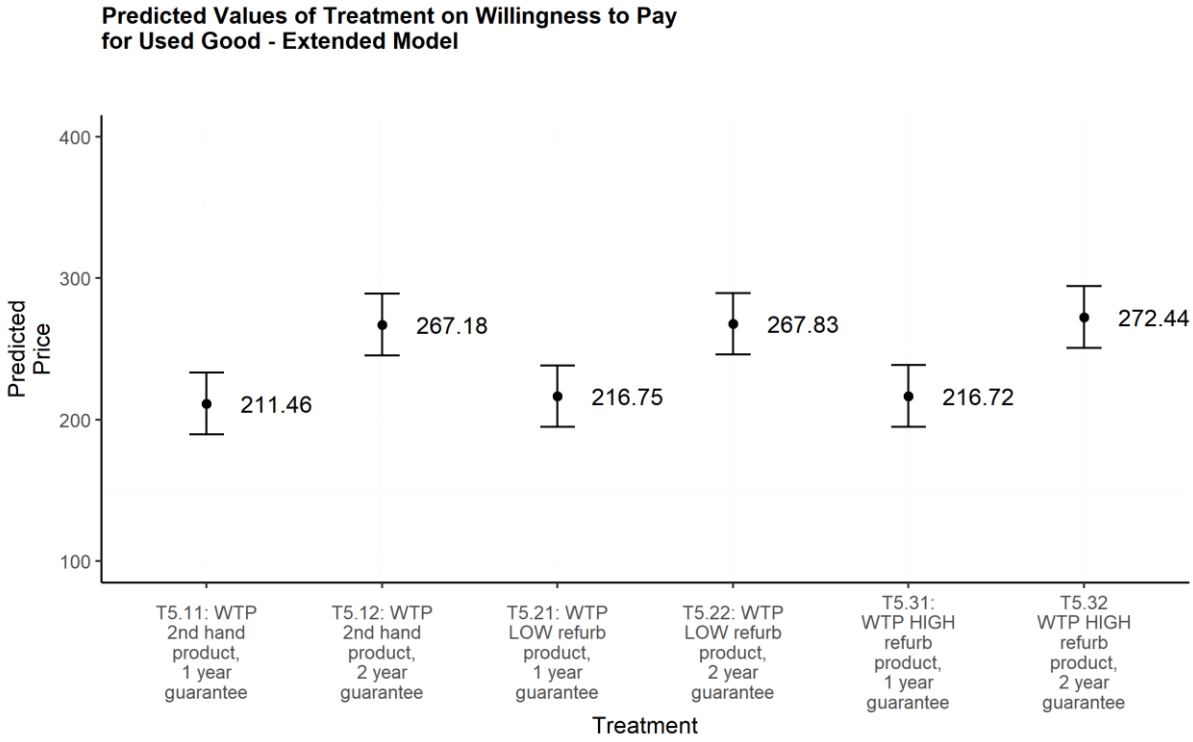
The overall results of the experimental manipulation on the duration of the guarantee period and the type of product are presented in the below figure, the values ascribed to the amount people are willing to pay for each category of products and guarantee periods, being generated as predicted values of a mixed effects linear model that considers as explanatory factors the treatment, the demographic characteristics, and the attitudinal indexes.

By comparing the pairs of treatments (e.g., T5.11 vs. T5.12), the difference represents the estimated value ascribed on the difference between the specifications of the products. Thus, when it comes to second hand, low refurbished and high refurbished products, across all the 3 products considered, a difference of one year in the guarantee period has an estimated value of approximately EUR 55.

[30] The reference price was chosen by using an average retail price for such a product.

[31] The groups had similar sociodemographic profiles. The products were allocated randomly.

Figure 60 - Effect of aligned guarantee periods on the amount consumers are willing to pay for used products (T5 treatments)



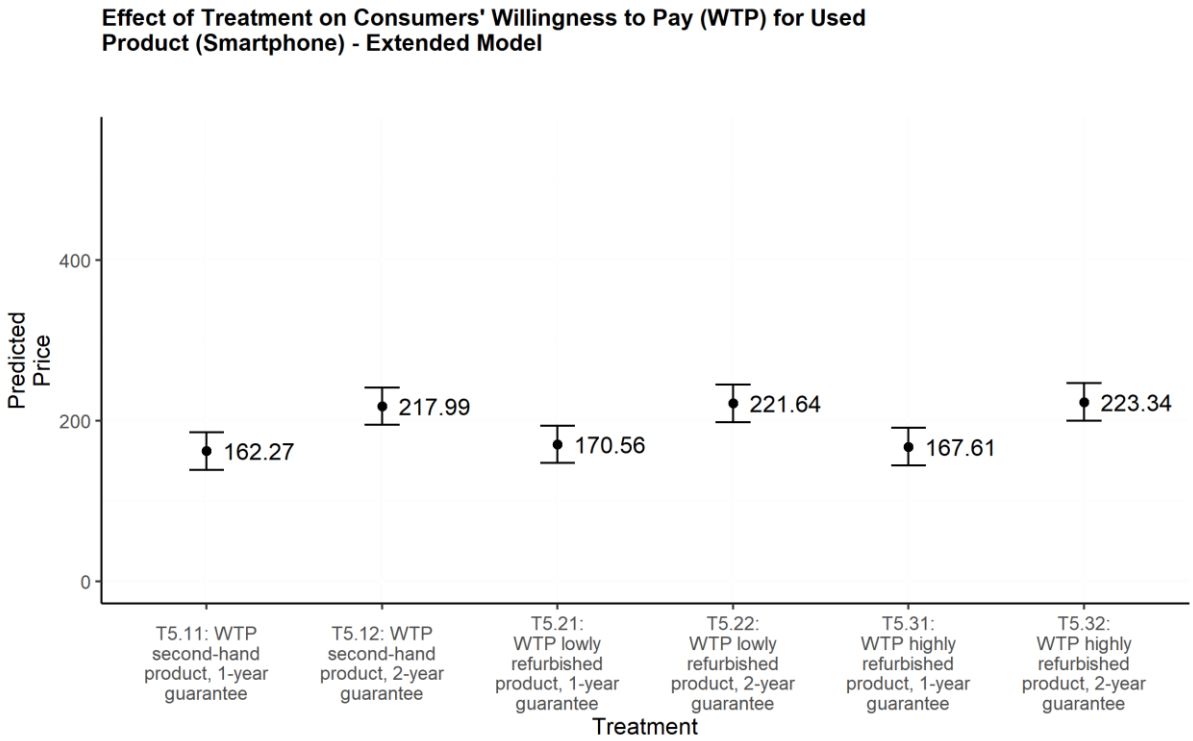
Product-specific differences

This difference in price while consistent across the types of used products (second hand, lowly refurbished and highly refurbished), depends very much on the actual products considered (refrigerator, smartphone, pair of shoes).

Smartphone

Considering the willingness to pay for a used smartphone, the price premium for a used smartphone with an extended guarantee period ranges between EUR 51 and EUR 55. The relative price increase between the used smartphone with 1-year guarantee period and the used smartphone with a 2-year guarantee period is around 30%-34%.

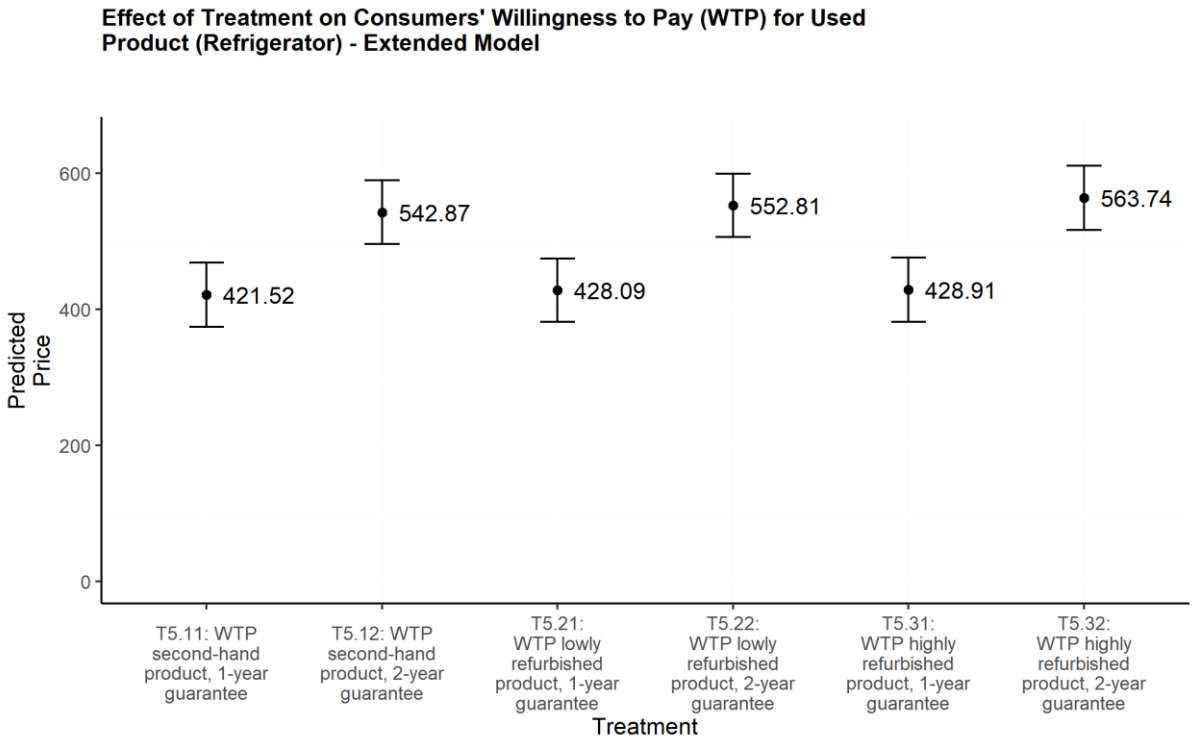
Figure 61 - Effect of aligned guarantee periods on the amount consumers are willing to pay for a used smartphone (T5 treatments)



Refrigerator

When it comes to refrigerators, the average price premium for used products with an aligned guarantee period varies between EUR 121-134, depending on the type of used product. The absolute price premium is highest in the case of the highly refurbished product with EUR 134. The relative price difference between a used refrigerator with a 1-year guarantee period compared to a 1-year guarantee period is 29%-30%, with little differences between the type of used product.

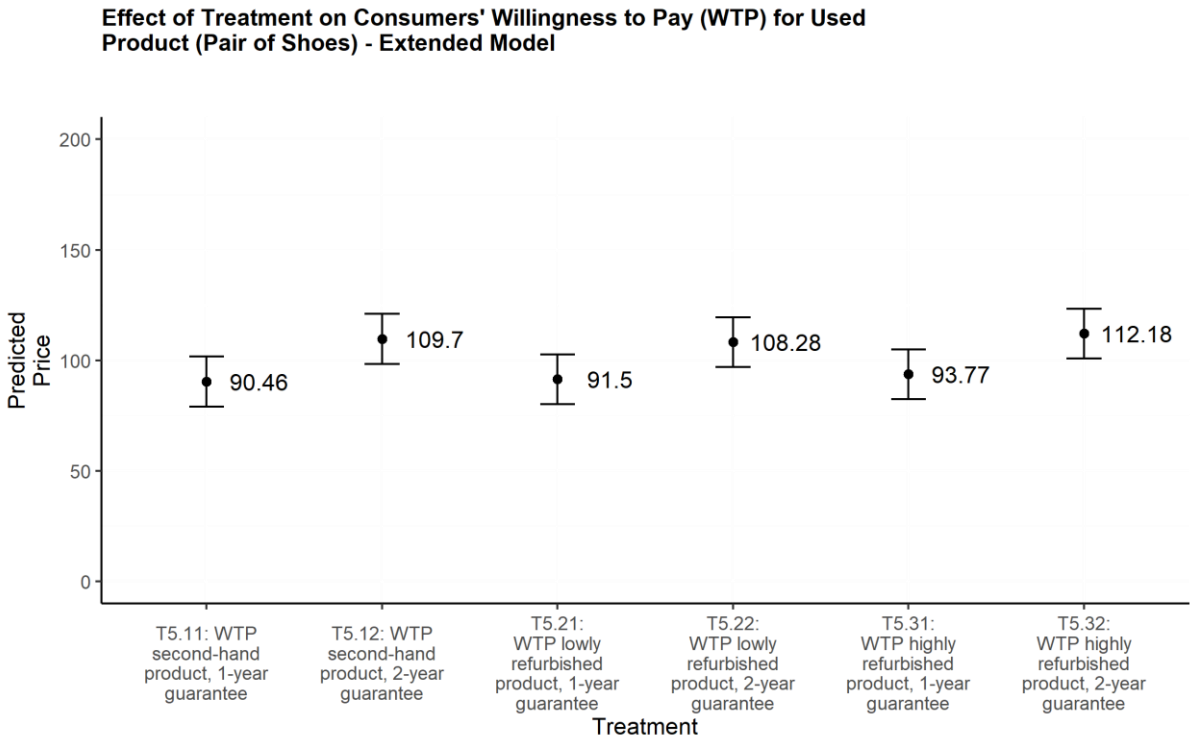
Figure 62 - Effect of aligned guarantee periods on the amount consumers are willing to pay for a used refrigerator (T5 treatments)



Pair of shoes

Considering shoes, the absolute price premium that participants assigned to a used product with a 2-year guarantee period compared to a 1-year guarantee period varies between EUR 16-19, depending on the type of used product (second hand, lowly refurbished, highly refurbished). The relative price premium ranges between 18%-21%, considerably lower than for the other types of products that were tested in the experiment.

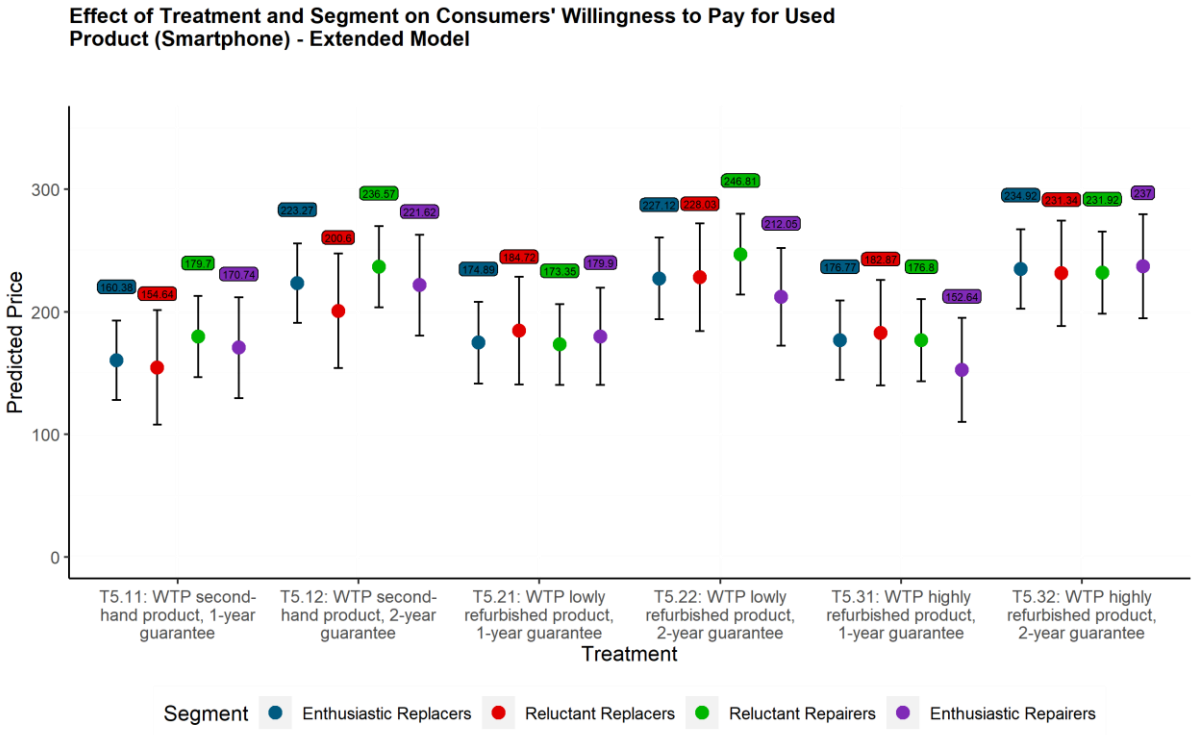
Figure 63 - Effect of aligned guarantee periods on the amount consumers are willing to pay for a used pair of shoes (T5 treatments)



Differences between population segments

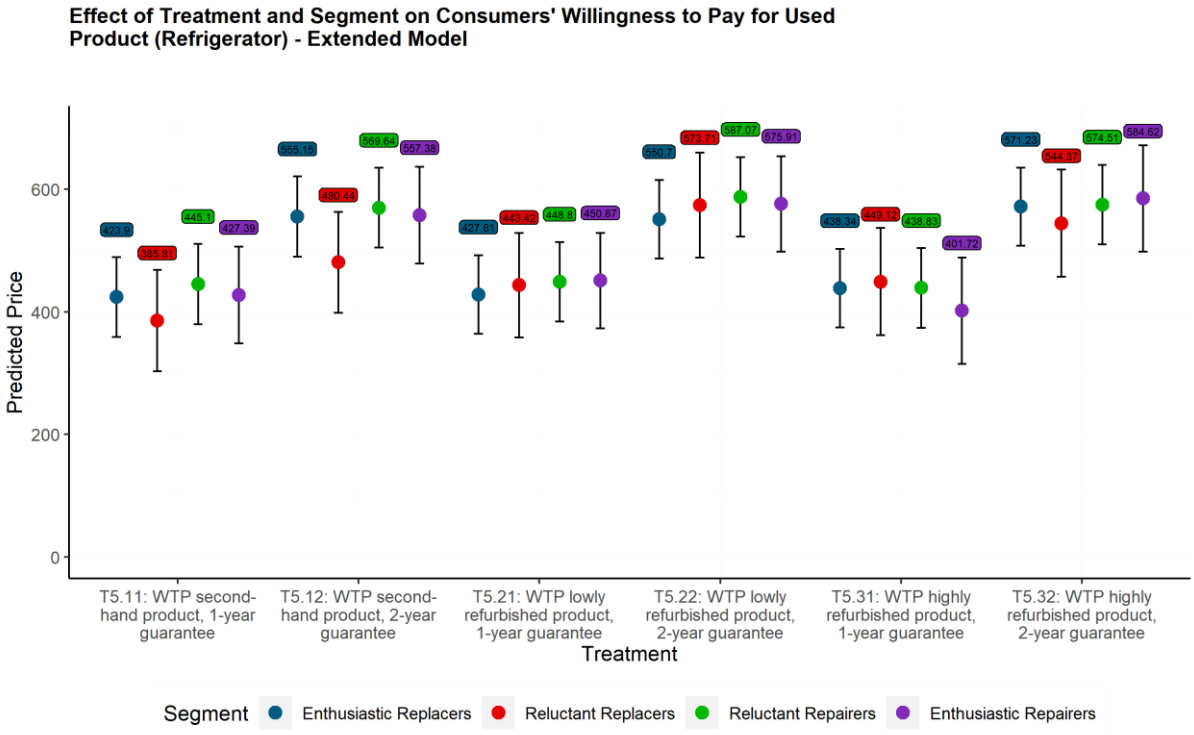
When considering different population segments, there are few systematic differences visible. All consumer segments put a significant price premium on an aligned guarantee period of 2 years duration for a used smartphone. This is the case for all types of used products tested (second hand, lowly refurbished, highly refurbished).

Figure 64 - Effect of aligned guarantee periods on the amount consumers are willing to pay for a used smartphone by population segments (T5 treatments)



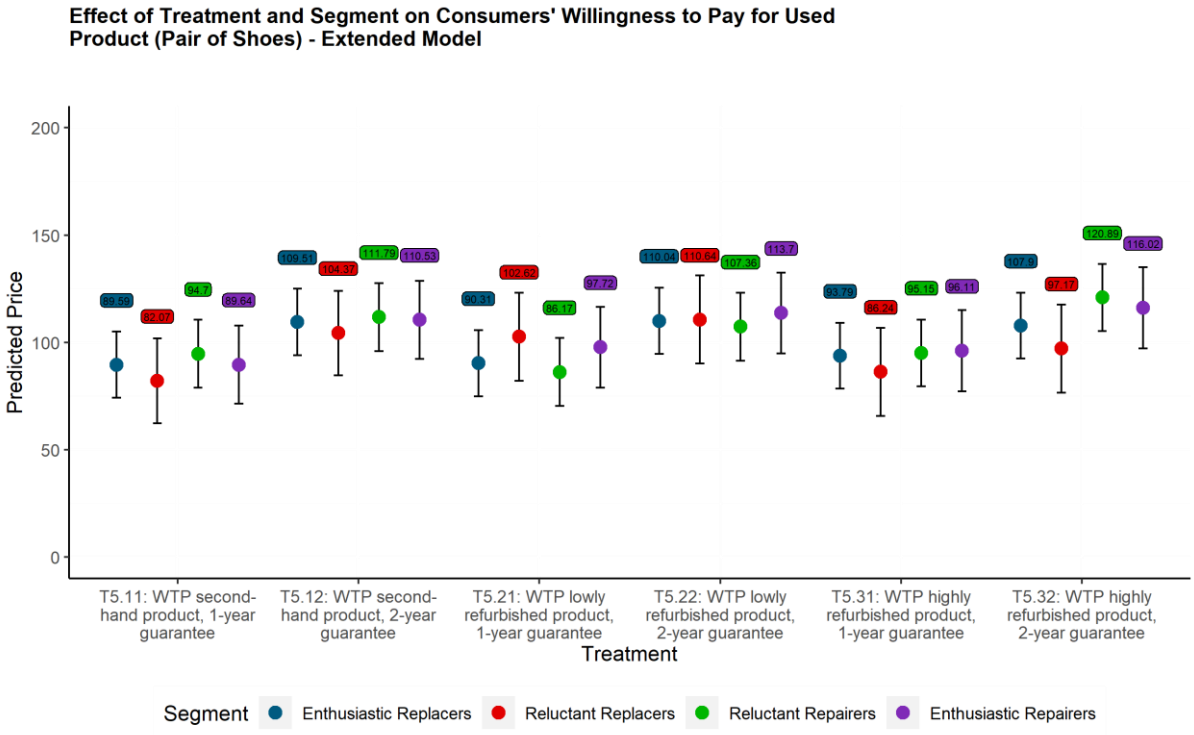
The same is the case when it comes to refrigerators. There is a significant price premium that participants across all population segments assign to an aligned guarantee period.

Figure 65 - Effect of aligned guarantee periods on the amount consumers are willing to pay for a used refrigerator by population segments (T5 treatments)



Also, regarding shoes, participants from each population segment assign a considerable higher value to a used product with a 2-year guarantee period compared to a used product with a 1-year guarantee period. The differences are significant for most population segments, but not for the segment of 'reluctant replacers' who put similar values on both guarantee periods.

Figure 66 - Effect of aligned guarantee periods on the amount consumers are willing to pay for a used pair of shoes by population segments (T5 treatments)



2.4.4. Detailed information on results

The following tables summarise the results of the regression analysis (mixed-effects linear model). The figures in the table show the size of the coefficients and in parentheses, the standard errors are indicated. The level of significance is marked by asterisks next to the figure of the effect sizes. The tables present a basis model (left-hand columns) and an extended model which includes additional explanatory variables (right-hand column).

Table 12 - Likelihood to have product repaired replaced mixed-effects linear model (estimates and standard errors)

Likelihood to Have Product Repaired/Replaced				
	Mixed-effects linear model			
	Baseline (Repair)	Extended (Repair)	Baseline (Replace)	Extended (Replace)
Country: Germany		-0.151*		-0.151*
		(0.070)		(0.061)
Country: France		-0.006		-0.122*
		(0.070)		(0.061)
Country: Netherlands		-0.195**		0.096
		(0.070)		(0.061)
Country: Spain		0.028		0.157*
		(0.071)		(0.062)
Country: Italy		-0.034		0.058
		(0.070)		(0.062)

Likelihood to Have Product Repaired/Replaced				
	Mixed-effects linear model			
	Baseline (Repair)	Extended (Repair)	Baseline (Replace)	Extended (Replace)
Country: Greece		-0.237**		0.243***
		(0.072)		(0.063)
Country: Poland		-0.149*		0.163*
		(0.073)		(0.064)
Country: Romania		-0.198**		-0.041
		(0.073)		(0.064)
Country: Hungary		-0.411***		0.032
		(0.072)		(0.063)
Gender: Female		0.015		-0.011
		(0.032)		(0.028)
Gender: None of the Above / Non-Binary		0.215		-0.209
		(0.413)		(0.360)
Age: 25-39		0.024		0.068
		(0.067)		(0.058)
Age: 40-54		-0.024		0.123*
		(0.067)		(0.059)
Age: 55-64		-0.130		0.148*
		(0.072)		(0.063)
Age: 65+		-0.107		0.187**
		(0.082)		(0.071)
Education: Medium		-0.084		0.0003
		(0.052)		(0.045)
Education: High		-0.110*		-0.069
		(0.053)		(0.047)
Household Income: Medium		-0.060		0.071*
		(0.040)		(0.035)
Household Income: High		-0.075		0.144**
		(0.055)		(0.048)
Occupation: Manager		-0.047		-0.005
		(0.068)		(0.059)
Occupation: Other White Collar		-0.113*		-0.030
		(0.054)		(0.047)
Occupation: Manual Worker		-0.084		-0.045
		(0.068)		(0.059)
Occupation: House Person		-0.152		0.055
		(0.082)		(0.072)
Occupation: Unemployed		-0.029		-0.092
		(0.084)		(0.073)
Occupation: Retired		-0.192**		-0.033
		(0.068)		(0.059)
Occupation: Student		-0.112		0.058
		(0.096)		(0.084)
Affinity to Repair		0.099***		-0.084***
		(0.016)		(0.014)
Prejudice towards used goods		-0.119***		0.118***
		(0.016)		(0.014)

Likelihood to Have Product Repaired/Replaced				
	Mixed-effects linear model			
	Baseline (Repair)	Extended (Repair)	Baseline (Replace)	Extended (Replace)
Sustainability engagement		0.141***		0.0001
		(0.016)		(0.014)
Product: Refrigerator	-0.139*	-0.139*	0.060	0.058
	(0.066)	(0.066)	(0.063)	(0.063)
Product: Pair of Shoes	-0.088	-0.085	-0.038	-0.041
	(0.067)	(0.067)	(0.064)	(0.064)
T3/4.02: Repair&Replace, 1.5 years, Order: 1	0.022	0.012	-0.017	-0.015
	(0.078)	(0.077)	(0.071)	(0.070)
T3/4.02: Repair&Replace, 1.5 years, Order: 2	-0.096	-0.097	-0.018	-0.019
	(0.058)	(0.058)	(0.055)	(0.055)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended	0.116	0.105	-0.112	-0.112
	(0.084)	(0.083)	(0.077)	(0.076)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair	0.430***	0.435***	-0.398***	-0.411***
	(0.084)	(0.083)	(0.077)	(0.076)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair	0.466***	0.473***	-0.507***	-0.521***
	(0.084)	(0.083)	(0.077)	(0.076)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace	0.099	0.096	0.018	0.018
	(0.083)	(0.082)	(0.076)	(0.075)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace	-0.044	-0.048	0.017	0.017
	(0.083)	(0.082)	(0.076)	(0.075)
T4.11: Repair&Replace NOT covered, 2.5 years	-0.080	-0.089	-1.169***	-1.175***
	(0.084)	(0.083)	(0.077)	(0.076)
T4.12: Repair&Replace NOT covered, 4.5 years	-0.699***	-0.708***	-1.100***	-1.105***
	(0.084)	(0.083)	(0.077)	(0.076)
T4.21 Repair-Only, NO replace, 2.5 years	1.085***	1.094***	-1.822***	-1.825***
	(0.083)	(0.082)	(0.077)	(0.076)
T4.22 Repair-Only, NO replace, 4.5 years	0.533***	0.541***	-1.553***	-1.556***
	(0.084)	(0.083)	(0.077)	(0.076)
T4.31: Repair&Replace, 2.5 years	0.016	0.034	0.085	0.064
	(0.084)	(0.083)	(0.077)	(0.076)
T4.32: Repair&Replace, 4.5 years	-0.319***	-0.300***	-0.009	-0.029
	(0.084)	(0.083)	(0.077)	(0.076)
T3/4.02: Repair&Replace, 1.5 years, Refrigerator	0.091	0.092	0.024	0.026
	(0.078)	(0.078)	(0.075)	(0.075)
T3/4.02: Repair&Replace, 1.5 years, Pair of Shoes	-0.018	-0.018	-0.001	0.002
	(0.079)	(0.079)	(0.075)	(0.075)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Refrigerator	0.120	0.122	-0.055	-0.051
	(0.094)	(0.094)	(0.090)	(0.090)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Pair of Shoes	-0.076	-0.077	0.023	0.029
	(0.095)	(0.094)	(0.091)	(0.090)

Likelihood to Have Product Repaired/Replaced				
	Mixed-effects linear model			
	Baseline (Repair)	Extended (Repair)	Baseline (Replace)	Extended (Replace)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Refrigerator	0.087 (0.094)	0.086 (0.094)	0.025 (0.090)	0.034 (0.090)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.018 (0.095)	-0.023 (0.095)	-0.009 (0.091)	-0.001 (0.091)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Refrigerator	0.154 (0.094)	0.152 (0.094)	-0.079 (0.090)	-0.068 (0.090)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.134 (0.095)	-0.139 (0.095)	0.090 (0.091)	0.101 (0.091)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Refrigerator	0.067 (0.094)	0.067 (0.094)	0.005 (0.090)	0.007 (0.090)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.139 (0.094)	-0.140 (0.093)	-0.034 (0.089)	-0.031 (0.089)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Refrigerator	0.112 (0.094)	0.113 (0.094)	-0.085 (0.090)	-0.084 (0.090)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.063 (0.094)	-0.063 (0.093)	0.016 (0.089)	0.017 (0.089)
T4.11: Repair&Replace NOT covered, 2.5 years, Refrigerator	0.348*** (0.095)	0.351*** (0.095)	-0.387*** (0.091)	-0.382*** (0.091)
T4.11: Repair&Replace NOT covered, 2.5 years, Pair of Shoes	0.299** (0.094)	0.299** (0.094)	-0.164 (0.091)	-0.158 (0.091)
T4.12: Repair&Replace NOT covered, 4.5 years, Refrigerator	0.652*** (0.095)	0.655*** (0.095)	-0.091 (0.091)	-0.087 (0.091)
T4.12: Repair&Replace NOT covered, 4.5 years, Pair of Shoes	0.345*** (0.094)	0.346*** (0.094)	-0.179* (0.091)	-0.174 (0.091)
T4.21 Repair-Only, NO replace, 2.5 years, Refrigerator	0.305** (0.094)	0.308** (0.094)	-0.255** (0.090)	-0.256** (0.090)
T4.21 Repair-Only, NO replace, 2.5 years, Pair of Shoes	-0.008 (0.094)	-0.010 (0.094)	0.020 (0.091)	0.019 (0.090)
T4.22 Repair-Only, NO replace, 4.5 years, Refrigerator	0.589*** (0.094)	0.592*** (0.094)	-0.357*** (0.090)	-0.358*** (0.090)
T4.22 Repair-Only, NO replace, 4.5 years, Pair of Shoes	0.070 (0.094)	0.068 (0.094)	-0.041 (0.091)	-0.041 (0.091)
T4.31: Repair&Replace, 2.5 years, Refrigerator	0.163 (0.094)	0.162 (0.094)	-0.130 (0.091)	-0.127 (0.090)
T4.31: Repair&Replace, 2.5 years, Pair of Shoes	0.127 (0.094)	0.121 (0.094)	-0.234** (0.090)	-0.223* (0.090)
T4.32: Repair&Replace, 4.5 years, Refrigerator	0.279** (0.095)	0.277** (0.095)	-0.119 (0.091)	-0.116 (0.091)

Likelihood to Have Product Repaired/Replaced				
	Mixed-effects linear model			
	Baseline (Repair)	Extended (Repair)	Baseline (Replace)	Extended (Replace)
T4.32: Repair&Replace, 4.5 years, Pair of Shoes	0.104 (0.095)	0.098 (0.095)	-0.141 (0.090)	-0.132 (0.090)
Constant	3.673*** (0.059)	4.086*** (0.120)	4.876*** (0.054)	4.712*** (0.106)
N	25431	25431	25403	25403
Log Likelihood	-43704.700	-43595.380	-42032.420	-41955.660
AIC	87493.410	87332.760	84148.850	84053.320
BIC	87835.440	87910.960	84490.840	84631.450
***p < .001; **p < .01; *p < .05				

Table 13 - Price at which to buy used product mixed-effects linear model (estimates and standard errors)

Price at Which to buy Used Product		
	Mixed-effects linear model	
	Basic	Extended
Country: Germany		-0.763 (6.853)
Country: France		1.396 (6.871)
Country: Netherlands		-23.574*** (6.881)
Country: Spain		-6.914 (6.960)
Country: Italy		-26.771*** (6.920)
Country: Greece		-22.263** (7.166)
Country: Poland		-15.626* (7.153)
Country: Romania		45.208*** (7.400)
Country: Hungary		-66.048*** (7.167)
Gender: Female		-8.161** (3.154)
Gender: None of the Above / Non-Binary		-64.164 (47.202)
Age: 25-39		-31.683*** (6.600)
Age: 40-54		-47.684*** (6.609)
Age: 55-64		-64.863*** (7.103)
Age: 65+		-80.916*** (8.058)
Education: Medium		-5.576 (5.302)
Education: High		-1.482 (5.425)
Household Income: Medium		-3.216 (4.050)
Household Income: High		-17.917** (5.521)

Price at Which to buy Used Product		
	Mixed-effects linear model	
	Basic	Extended
Occupation: Manager		2.562 (6.946)
Occupation: Other White Collar		4.588 (5.415)
Occupation: Manual Worker		6.995 (6.759)
Occupation: House Person		-6.360 (7.995)
Occupation: Unemployed		7.429 (8.541)
Occupation: Retired		6.809 (6.807)
Occupation: Student		-6.070 (10.341)
Affinity to Repair		5.333*** (1.601)
Prejudice towards used goods		-18.596*** (1.641)
Sustainability engagement		5.435*** (1.554)
Product: Refrigerator	138.554*** (5.605)	137.880*** (5.573)
Product: Pair of Shoes	-93.260*** (5.552)	-93.255*** (5.523)
T5.12: WTP 2nd hand product, 2 year guarantee	55.724*** (5.300)	55.724*** (5.300)
T5.21: WTP LOW refurb product, 1 year guarantee	6.760 (6.554)	5.289 (6.273)
T5.22: WTP LOW refurb product, 2 year guarantee	57.841*** (6.554)	56.370*** (6.273)
T5.31: WTP HIGH refurb product, 1 year guarantee	6.063 (6.539)	5.257 (6.254)
T5.32: WTP HIGH refurb product, 2 year guarantee	61.786*** (6.539)	60.980*** (6.254)
T5.12: WTP 2nd hand product, 2 year guarantee, Refrigerator	65.620*** (7.510)	65.620*** (7.510)
T5.12: WTP 2nd hand product, 2 year guarantee, Pair of Shoes	-36.480*** (7.458)	-36.480*** (7.458)
T5.21: WTP LOW refurb product, 1 year guarantee, Refrigerator	-0.235 (7.946)	0.513 (7.901)
T5.21: WTP LOW refurb product, 1 year guarantee, Pair of Shoes	-2.092 (7.893)	-2.056 (7.852)
T5.22: WTP LOW refurb product, 2 year guarantee, Refrigerator	73.412*** (7.946)	74.160*** (7.901)
T5.22: WTP LOW refurb product, 2 year guarantee, Pair of Shoes	-36.392*** (7.893)	-36.356*** (7.852)
T5.31: WTP HIGH refurb product, 1 year guarantee, Refrigerator	0.771 (7.983)	1.158 (7.937)
T5.31: WTP HIGH refurb product, 1 year guarantee, Pair of Shoes	-2.590 (7.852)	-2.304 (7.812)
T5.32: WTP HIGH refurb product, 2 year guarantee, Refrigerator	79.875*** (7.983)	80.262*** (7.937)
T5.32: WTP HIGH refurb product, 2 year guarantee, Pair of Shoes	-39.903*** (7.852)	-39.616*** (7.812)
Constant	140.740*** (4.609)	211.461*** (11.101)
N	11616	11616
Log Likelihood	-71251.840	-70837.240

Price at Which to buy Used Product		
	Mixed-effects linear model	
	Basic	Extended
AIC	142543.700	141772.500
BIC	142690.900	142133.100
$^{***}p < .001$; $^{**}p < .01$; $^{*}p < .05$		

Table 14 - Likelihood to have product repaired/replaced (enthusiastic repairers) mixed-effects linear model (estimates and standard errors)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Repairers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Country: Germany		0.614		-0.713*
		(0.358)		(0.343)
Country: France		0.414		-0.341
		(0.291)		(0.279)
Country: Netherlands		0.206		0.063
		(0.286)		(0.273)
Country: Spain		0.393		-0.021
		(0.288)		(0.276)
Country: Italy		0.021		-0.064
		(0.284)		(0.272)
Country: Greece		-0.076		-0.051
		(0.286)		(0.273)
Country: Poland		-0.238		0.240
		(0.302)		(0.292)
Country: Romania		-0.251		-0.069
		(0.291)		(0.279)
Country: Hungary		0.005		-0.149
		(0.273)		(0.263)
Gender: Female		-0.038		0.297**
		(0.115)		(0.110)
Age: 25-39		-0.050		0.224
		(0.210)		(0.202)
Age: 40-54		0.089		0.372
		(0.222)		(0.214)
Age: 55-64		-0.080		0.158
		(0.238)		(0.230)
Age: 65+		0.017		0.235
		(0.293)		(0.282)
Education: Medium		-0.253		-0.183
		(0.209)		(0.199)
Education: High		-0.313		-0.228
		(0.207)		(0.197)
Household Income: Medium		0.333*		-0.091
		(0.142)		(0.136)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Repairers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Household Income: High		-0.268		-0.277
		(0.211)		(0.202)
Occupation: Manager		-0.298		0.053
		(0.239)		(0.229)
Occupation: Other White Collar		0.099		-0.026
		0.181)		(0.174)
Occupation: Manual Worker		0.116		-0.114
		(0.224)		(0.215)
Occupation: House Person		0.363		0.140
		(0.314)		(0.300)
Occupation: Unemployed		-0.075		-0.449
		(0.334)		(0.319)
Occupation: Retired		0.034		-0.230
		(0.261)		(0.250)
Occupation: Student		-0.308		0.229
		(0.287)		(0.276)
Affinity to Repair		0.130*		0.084
		(0.057)		(0.054)
Prejudice towards used goods		0.138*		0.115*
		(0.057)		(0.055)
Sustainability engagement		0.193***		0.021
		(0.058)		(0.056)
Product: Refrigerator	0.262	0.248	-0.040	-0.048
	(0.228)	(0.228)	(0.226)	(0.226)
Product: Pair of Shoes	0.318	0.301	-0.370	-0.370
	(0.218)	(0.218)	(0.217)	(0.217)
T3/4.02: Repair&Replace, 1.5 years, Order: 1	-0.006	-0.014	-0.029	-0.019
	(0.185)	(0.185)	(0.185)	(0.185)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended	0.189	0.178	-0.103	-0.080
	(0.243)	(0.243)	(0.244)	(0.244)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair	0.597*	0.688*	-0.539*	-0.459
	(0.274)	(0.272)	(0.267)	(0.269)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair	0.788**	0.879**	-0.797**	-0.715**
	(0.276)	(0.275)	(0.267)	(0.269)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace	0.207	0.224	-0.242	-0.110
	(0.277)	(0.276)	(0.268)	(0.269)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace	0.002	0.023	-0.334	-0.203
	(0.280)	(0.279)	(0.271)	(0.272)
T4.11: Repair&Replace NOT covered, 2.5 years	0.084	0.071	-0.964***	-0.993***
	(0.295)	(0.293)	(0.288)	(0.289)
T4.12: Repair&Replace NOT covered, 4.5 years	-0.598*	-0.611*	-1.196***	-1.218***
	(0.297)	(0.295)	(0.286)	(0.287)
T4.21 Repair-Only, NO replace, 2.5 years	1.106***	1.117***	-1.956***	-1.910***
	(0.282)	(0.280)	(0.272)	(0.273)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Repairers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
T4.22 Repair-Only, NO replace, 4.5 years	0.567* (0.282)	0.579* (0.280)	-1.807*** (0.274)	-1.762*** (0.275)
T4.31: Repair&Replace, 2.5 years	0.685* (0.291)	0.660* (0.289)	0.070 (0.282)	0.074 (0.283)
T4.32: Repair&Replace, 4.5 years	-0.144 (0.291)	-0.169 (0.289)	0.132 (0.282)	0.133 (0.283)
T3/4.02: Repair&Replace, 1.5 years, Refrigerator	-0.149 (0.268)	-0.138 (0.268)	0.028 (0.268)	0.034 (0.268)
T3/4.02: Repair&Replace, 1.5 years, Pair of Shoes	-0.181 (0.262)	-0.166 (0.262)	0.097 (0.261)	0.099 (0.261)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Refrigerator	-0.290 (0.322)	-0.273 (0.322)	-0.062 (0.322)	-0.053 (0.322)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Pair of Shoes	-0.215 (0.321)	-0.193 (0.321)	0.313 (0.320)	0.314 (0.320)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Refrigerator	-0.214 (0.324)	-0.198 (0.324)	0.047 (0.325)	0.063 (0.325)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.425 (0.315)	-0.375 (0.315)	0.242 (0.315)	0.239 (0.316)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Refrigerator	-0.600 (0.325)	-0.588 (0.325)	0.252 (0.323)	0.264 (0.323)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.563 (0.316)	-0.512 (0.316)	0.570 (0.314)	0.558 (0.314)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Refrigerator	-0.496 (0.327)	-0.456 (0.327)	0.064 (0.324)	0.094 (0.325)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	0.635* (0.317)	-0.621 (0.317)	0.384 (0.317)	0.376 (0.317)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Refrigerator	-0.246 (0.330)	-0.208 (0.331)	-0.010 (0.327)	0.020 (0.327)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	0.635* (0.320)	-0.625 (0.320)	0.612 (0.319)	0.608 (0.319)
T4.11: Repair&Replace NOT covered, 2.5 years, Refrigerator	-0.403 (0.339)	-0.362 (0.339)	0.853* (0.338)	-0.834* (0.338)
T4.11: Repair&Replace NOT covered, 2.5 years, Pair of Shoes	-0.358 (0.344)	-0.332 (0.344)	-0.094 (0.344)	-0.077 (0.344)
T4.12: Repair&Replace NOT covered, 4.5 years, Refrigerator	0.140 (0.338)	0.175 (0.338)	-0.231 (0.336)	-0.215 (0.336)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Repairers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
T4.12: Repair&Replace NOT covered, 4.5 years, Pair of Shoes	0.014 (0.347)	0.044 (0.347)	0.400 (0.339)	0.401 (0.339)
T4.21 Repair-Only, NO replace, 2.5 years, Refrigerator	-0.135 (0.325)	-0.111 (0.325)	-0.277 (0.323)	-0.264 (0.323)
T4.21 Repair-Only, NO replace, 2.5 years, Pair of Shoes	-0.529 (0.325)	-0.505 (0.325)	0.321 (0.321)	0.333 (0.321)
T4.22 Repair-Only, NO replace, 4.5 years, Refrigerator	0.345 (0.325)	0.369 (0.325)	-0.447 (0.324)	-0.433 (0.324)
T4.22 Repair-Only, NO replace, 4.5 years, Pair of Shoes	-0.444 (0.326)	-0.419 (0.326)	0.264 (0.325)	0.279 (0.325)
T4.31: Repair&Replace, 2.5 years, Refrigerator	-0.024 (0.337)	0.011 (0.337)	-0.222 (0.335)	-0.213 (0.335)
T4.31: Repair&Replace, 2.5 years, Pair of Shoes	-0.382 (0.334)	-0.336 (0.334)	-0.524 (0.333)	-0.530 (0.333)
T4.32: Repair&Replace, 4.5 years, Refrigerator	0.568 (0.336)	0.603 (0.336)	-0.232 (0.335)	-0.220 (0.336)
T4.32: Repair&Replace, 4.5 years, Pair of Shoes	0.234 (0.334)	0.264 (0.334)	-0.336 (0.334)	-0.337 (0.334)
Constant	3.815*** (0.181)	4.228*** (0.414)	4.883*** (0.176)	5.176*** (0.398)
N	1737	1737	1722	1722
Log Likelihood	-2861.824	-2855.438	-2800.221	-2805.679
AIC	5805.647	5848.876	5682.442	5749.358
BIC	6029.504	6225.610	5905.943	6125.494
***p < .001; **p < .01; *p < .05				

Table 15 - Likelihood to have product repaired/replaced (enthusiastic replacers) mixed-effects linear model (estimates and standard errors)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Country: Germany		-0.369* (0.153)		0.048 (0.131)
Country: France		-0.316 (0.164)		0.057 (0.141)
Country: Netherlands		-0.240 (0.159)		0.099 (0.136)
Country: Spain		-0.071 (0.149)		0.363** (0.127)
Country: Italy		-0.233 (0.165)		0.382** (0.141)
Country: Greece		-0.324* (0.158)		0.308* (0.135)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Country: Poland		-0.185		0.238
		(0.155)		(0.133)
Country: Romania		-0.268		0.082
		(0.153)		(0.131)
Country: Hungary		-0.623***		0.270*
		(0.151)		(0.130)
Gender: Female		-0.062		-0.006
		(0.068)		(0.058)
Age: 25-39		0.009		0.064
		(0.138)		(0.118)
Age: 40-54		-0.064		0.120
		(0.140)		(0.120)
Age: 55-64		-0.277		0.176
		(0.156)		(0.134)
Age: 65+		-0.038		0.280
		(0.182)		(0.156)
Education: Medium		-0.294*		0.217*
		(0.119)		(0.103)
Education: High		-0.318*		0.101
		(0.124)		(0.106)
Household Income: Medium		-0.026		0.107
		(0.086)		(0.074)
Household Income: High		-0.131		0.122
		(0.119)		(0.102)
Occupation: Manager		-0.023		0.031
		(0.142)		(0.122)
Occupation: Other White Collar		-0.265*		-0.047
		(0.111)		(0.095)
Occupation: Manual Worker		-0.067		-0.202
		(0.140)		(0.121)
Occupation: House Person		-0.342		0.170
		(0.176)		(0.151)
Occupation: Unemployed		-0.138		-0.045
		(0.186)		(0.159)
Occupation: Retired		-0.446**		-0.048
		(0.150)		(0.129)
Occupation: Student		-0.049		0.098
		(0.198)		(0.171)
Affinity to Repair		0.014		-0.085**
		(0.035)		(0.030)
Prejudice towards used goods		-0.024		0.099**
		(0.035)		(0.030)
Sustainability engagement		0.092**		0.018
		(0.034)		(0.029)
Product: Refrigerator	-0.200	-0.205	0.126	0.124
	(0.151)	(0.151)	(0.142)	(0.142)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Product: Pair of Shoes	-0.231	-0.231	0.031	0.024
	(0.148)	(0.148)	(0.138)	(0.138)
T3/4.02: Repair&Replace, 1.5 years, Order: 1	0.034	0.029	0.035	0.036
	(0.129)	(0.129)	(0.120)	(0.120)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended	-0.021	-0.032	0.117	0.118
	(0.160)	(0.160)	(0.149)	(0.148)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair	0.466*	0.447*	-0.535**	-0.530**
	(0.182)	(0.182)	(0.164)	(0.163)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair	0.503**	0.487**	-0.618***	-0.612***
	(0.182)	(0.182)	(0.165)	(0.164)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace	-0.124	-0.108	-0.056	-0.058
	(0.173)	(0.172)	(0.156)	(0.156)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace	-0.288	-0.272	-0.027	-0.028
	(0.173)	(0.173)	(0.156)	(0.156)
T4.11: Repair&Replace NOT covered, 2.5 years	-0.228	-0.211	-1.156***	-1.169***
	(0.175)	(0.175)	(0.159)	(0.158)
T4.12: Repair&Replace NOT covered, 4.5 years	-0.783***	-0.765***	-1.019***	-1.032***
	(0.175)	(0.174)	(0.158)	(0.158)
T4.21 Repair-Only, NO replace, 2.5 years	1.129***	1.112***	-1.771***	-1.763***
	(0.184)	(0.184)	(0.167)	(0.166)
T4.22 Repair-Only, NO replace, 4.5 years	0.457*	0.441*	-1.282***	-1.273***
	(0.186)	(0.185)	(0.168)	(0.168)
T4.31: Repair&Replace, 2.5 years	-0.159	-0.160	-0.025	-0.024
	(0.178)	(0.178)	(0.160)	(0.160)
T4.32: Repair&Replace, 4.5 years	-0.318	-0.321	-0.143	-0.142
	(0.177)	(0.177)	(0.161)	(0.160)
T3/4.02: Repair&Replace, 1.5 years, Refrigerator	0.085	0.091	-0.097	-0.093
	(0.177)	(0.177)	(0.166)	(0.166)
T3/4.02: Repair&Replace, 1.5 years, Pair of Shoes	-0.058	-0.055	-0.145	-0.137
	(0.175)	(0.175)	(0.164)	(0.164)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Refrigerator	0.247	0.257	-0.257	-0.250
	(0.209)	(0.209)	(0.196)	(0.196)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Pair of Shoes	0.130	0.136	-0.150	-0.131
	(0.209)	(0.209)	(0.195)	(0.195)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Refrigerator	0.153	0.159	0.251	0.267
	(0.214)	(0.214)	(0.199)	(0.199)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.167	-0.169	0.108	0.117
	(0.213)	(0.213)	(0.197)	(0.197)

Likelihood to Have Product Repaired/Replaced (Enthusiastic Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Refrigerator	0.286 (0.214)	0.288 (0.214)	0.027 (0.200)	0.043 (0.200)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.310 (0.213)	-0.310 (0.213)	0.271 (0.198)	0.280 (0.198)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Refrigerator	0.264 (0.207)	0.270 (0.207)	-0.043 (0.194)	-0.036 (0.194)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.134 (0.202)	-0.138 (0.202)	-0.115 (0.188)	-0.120 (0.188)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Refrigerator	0.316 (0.208)	0.322 (0.208)	-0.121 (0.194)	-0.113 (0.194)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	0.006 (0.201)	0.004 (0.201)	-0.141 (0.188)	-0.145 (0.188)
T4.11: Repair&Replace NOT covered, 2.5 years, Refrigerator	0.334 (0.211)	0.345 (0.211)	-0.350 (0.198)	-0.341 (0.198)
T4.11: Repair&Replace NOT covered, 2.5 years, Pair of Shoes	0.440* (0.205)	0.431* (0.205)	-0.180 (0.192)	-0.164 (0.192)
T4.12: Repair&Replace NOT covered, 4.5 years, Refrigerator	0.613** (0.211)	0.624** (0.211)	-0.096 (0.196)	-0.091 (0.196)
T4.12: Repair&Replace NOT covered, 4.5 years, Pair of Shoes	0.405* (0.204)	0.396 (0.204)	-0.331 (0.191)	-0.320 (0.191)
T4.21 Repair-Only, NO replace, 2.5 years, Refrigerator	0.258 (0.220)	0.261 (0.220)	-0.090 (0.205)	-0.095 (0.205)
T4.21 Repair-Only, NO replace, 2.5 years, Pair of Shoes	0.079 (0.214)	0.073 (0.214)	-0.086 (0.200)	-0.082 (0.200)
T4.22 Repair-Only, NO replace, 4.5 years, Refrigerator	0.607** (0.220)	0.610** (0.220)	-0.516* (0.206)	-0.519* (0.206)
T4.22 Repair-Only, NO replace, 4.5 years, Pair of Shoes	0.324 (0.216)	0.319 (0.216)	-0.274 (0.202)	-0.269 (0.202)
T4.31: Repair&Replace, 2.5 years, Refrigerator	0.140 (0.209)	0.141 (0.209)	-0.055 (0.196)	-0.053 (0.196)
T4.31: Repair&Replace, 2.5 years, Pair of Shoes	0.331 (0.208)	0.333 (0.208)	-0.087 (0.194)	-0.070 (0.194)
T4.32: Repair&Replace, 4.5 years, Refrigerator	0.245 (0.210)	0.246 (0.210)	-0.184 (0.196)	-0.180 (0.196)
T4.32: Repair&Replace, 4.5 years, Pair of Shoes	0.106 (0.208)	0.108 (0.208)	0.037 (0.194)	0.054 (0.194)
Constant	3.626*** (0.123)	4.506*** (0.255)	4.957*** (0.112)	4.453*** (0.222)
N	5475	5475	5470	5470
Log Likelihood	-9537.909	-9539.031	-9046.631	-9051.398
AIC	19157.820	19216.060	18175.260	18240.800

Likelihood to Have Product Repaired/Replaced (Enthusiastic Replacers)				
		Mixed-effects linear model		
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
BIC	19428.740	19672.010	18446.150	18696.680
***p < .001; **p < .01; *p < .05				

Table 16 - Likelihood to have product repaired/replaced (reluctant repairers) mixed-effects linear (estimates and standard errors)

Likelihood to Have Product Repaired/Replaced (Reluctant Repairers)				
		Mixed-effects linear model		
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Country: Germany		-0.011		0.063
		(0.182)		(0.165)
Country: France		0.028		0.097
		(0.175)		(0.159)
Country: Netherlands		-0.313		0.176
		(0.189)		(0.172)
Country: Spain		-0.146		0.315*
		(0.166)		(0.152)
Country: Italy		-0.009		0.319*
		(0.167)		(0.152)
Country: Greece		-0.210		0.416**
		(0.166)		(0.152)
Country: Poland		-0.188		0.396*
		(0.173)		(0.158)
Country: Romania		-0.341*		0.125
		(0.172)		(0.156)
Country: Hungary		-0.363*		0.166
		(0.174)		(0.159)
Gender: Female		0.102		-0.038
		(0.070)		(0.064)
Age: 25-39		0.172		0.084
		(0.127)		(0.115)
Age: 40-54		-0.023		0.138
		(0.129)		(0.118)
Age: 55-64		-0.134		0.102
		(0.146)		(0.133)
Age: 65+		-0.187		0.043
		(0.171)		(0.156)
Education: Medium		0.134		-0.066
		(0.120)		(0.109)
Education: High		0.114		-0.110
		(0.123)		(0.112)
Household Income: Medium		0.006		0.147
		(0.085)		(0.078)

Likelihood to Have Product Repaired/Replaced (Reluctant Repairers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Household Income: High		0.049		0.204
		(0.123)		(0.112)
Occupation: Manager		-0.124		0.020
		(0.141)		(0.129)
Occupation: Other White Collar		-0.131		0.071
		(0.114)		(0.104)
Occupation: Manual Worker		-0.108		0.219
		(0.148)		(0.135)
Occupation: House Person		-0.225		-0.235
		(0.189)		(0.174)
Occupation: Unemployed		0.018		0.237
		(0.185)		(0.168)
Occupation: Retired		-0.031		0.046
		(0.154)		(0.140)
Occupation: Student		-0.243		0.076
		(0.196)		(0.179)
Affinity to Repair		0.007		-0.067*
		(0.035)		(0.032)
Prejudice towards used goods		-0.083*		0.148***
		(0.036)		(0.032)
Sustainability engagement		0.111**		-0.048
		(0.034)		(0.031)
Product: Refrigerator	-0.122	-0.132	0.008	0.001
	(0.150)	(0.150)	(0.146)	(0.146)
Product: Pair of Shoes	0.094	0.099	-0.005	-0.017
	(0.154)	(0.154)	(0.150)	(0.150)
T3/4.02: Repair&Replace, 1.5 years	-0.061	-0.062	0.002	0.004
	(0.134)	(0.134)	(0.131)	(0.131)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended	0.225	0.221	-0.125	-0.122
	(0.170)	(0.170)	(0.164)	(0.164)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair	0.423*	0.434*	-0.339	-0.320
	(0.190)	(0.190)	(0.183)	(0.182)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair	0.663***	0.674***	-0.476**	-0.455*
	(0.190)	(0.190)	(0.181)	(0.180)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace	0.007	0.002	0.092	0.124
	(0.178)	(0.178)	(0.170)	(0.170)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace	0.080	0.076	-0.020	0.012
	(0.179)	(0.179)	(0.171)	(0.170)
T4.11: Repair&Replace NOT covered, 2.5 years	0.343	0.319	-1.219***	-1.198***
	(0.189)	(0.188)	(0.180)	(0.180)
T4.12: Repair&Replace NOT covered, 4.5 years	-0.494**	-0.521**	-0.936***	-0.917***
	(0.189)	(0.189)	(0.183)	(0.182)

Likelihood to Have Product Repaired/Replaced (Reluctant Repairers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
T4.21 Repair-Only, NO replace, 2.5 years	1.093***	1.095***	-1.608***	-1.607***
	(0.176)	(0.176)	(0.168)	(0.168)
T4.22 Repair-Only, NO replace, 4.5 years	0.663***	0.665***	-1.418***	-1.417***
	(0.176)	(0.176)	(0.168)	(0.167)
T4.31: Repair&Replace, 2.5 years	0.001	0.062	0.164	0.135
	(0.182)	(0.182)	(0.175)	(0.174)
T4.32: Repair&Replace, 4.5 years	-0.162	-0.102	0.038	0.013
	(0.184)	(0.184)	(0.175)	(0.175)
T3/4.02: Repair&Replace, 1.5 years, Refrigerator	0.100	0.104	0.038	0.038
	(0.177)	(0.177)	(0.173)	(0.173)
T3/4.02: Repair&Replace, 1.5 years, Pair of Shoes	-0.143	-0.144	0.032	0.038
	(0.181)	(0.181)	(0.176)	(0.176)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Refrigerator	0.020	0.030	0.082	0.083
	(0.215)	(0.215)	(0.209)	(0.208)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Pair of Shoes	-0.480*	-0.479*	0.053	0.065
	(0.219)	(0.219)	(0.212)	(0.212)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Refrigerator	0.230	0.241	0.009	0.001
	(0.221)	(0.221)	(0.215)	(0.215)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Pair of Shoes	0.185	0.175	-0.213	-0.198
	(0.220)	(0.220)	(0.215)	(0.215)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Refrigerator	0.003	0.015	-0.146	-0.156
	(0.221)	(0.221)	(0.215)	(0.215)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.258	-0.267	-0.098	-0.086
	(0.220)	(0.220)	(0.213)	(0.213)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Refrigerator	0.170	0.180	0.074	0.083
	(0.211)	(0.211)	(0.204)	(0.204)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.173	-0.179	0.100	0.125
	(0.212)	(0.211)	(0.205)	(0.205)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Refrigerator	-0.109	-0.101	-0.013	-0.004
	(0.210)	(0.210)	(0.204)	(0.204)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.293	-0.298	0.123	0.148
	(0.212)	(0.212)	(0.206)	(0.206)
T4.11: Repair&Replace NOT covered, 2.5 years, Refrigerator	0.165	0.177	-0.167	-0.165
	(0.219)	(0.219)	(0.214)	(0.214)
T4.11: Repair&Replace NOT covered, 2.5 years, Pair of Shoes	-0.145	-0.149	0.008	0.014
	(0.221)	(0.221)	(0.215)	(0.215)

Likelihood to Have Product Repaired/Replaced (Reluctant Repairers)				
			Mixed-effects linear model	
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
T4.12: Repair&Replace NOT covered, 4.5 years, Refrigerator	0.631** (0.220)	0.645** (0.220)	-0.089 (0.216)	-0.082 (0.215)
T4.12: Repair&Replace NOT covered, 4.5 years, Pair of Shoes	0.226 (0.223)	0.229 (0.223)	-0.253 (0.218)	-0.244 (0.218)
T4.21 Repair-Only, NO replace, 2.5 years, Refrigerator	0.244 (0.205)	0.258 (0.205)	-0.201 (0.199)	-0.205 (0.199)
T4.21 Repair-Only, NO replace, 2.5 years, Pair of Shoes	-0.192 (0.207)	-0.195 (0.207)	0.119 (0.202)	0.126 (0.202)
T4.22 Repair-Only, NO replace, 4.5 years, Refrigerator	0.491* (0.205)	0.505* (0.205)	-0.218 (0.199)	-0.221 (0.199)
T4.22 Repair-Only, NO replace, 4.5 years, Pair of Shoes	-0.201 (0.207)	-0.203 (0.207)	-0.026 (0.201)	-0.019 (0.201)
T4.31: Repair&Replace, 2.5 years, Refrigerator	0.207 (0.221)	0.218 (0.221)	-0.196 (0.215)	-0.177 (0.215)
T4.31: Repair&Replace, 2.5 years, Pair of Shoes	0.083 (0.212)	0.076 (0.212)	-0.354 (0.207)	-0.328 (0.207)
T4.32: Repair&Replace, 4.5 years, Refrigerator	0.149 (0.223)	0.162 (0.223)	-0.0003 (0.216)	0.013 (0.216)
T4.32: Repair&Replace, 4.5 years, Pair of Shoes	-0.036 (0.213)	-0.044 (0.213)	-0.197 (0.207)	-0.179 (0.207)
Constant	3.738*** (0.126)	3.836*** (0.262)	4.769*** (0.122)	4.367*** (0.242)
N	4851	4851	4848	4848
Log Likelihood	-8235.822	-8244.006	-8021.648	-8024.305
AIC	16553.650	16626.010	16125.300	16186.610
BIC	16819.610	17073.610	16391.240	16634.170
***p < .001; **p < .01; *p < .05				

Table 17 - Likelihood to have product repaired/replaced (reluctant replacers) mixed-effects linear model (estimates and standard errors)

Likelihood to Have Product Repaired/Replaced (Reluctant Replacers)				
			Mixed-effects linear model	
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Country: Germany		0.217 (0.339)		-0.289 (0.308)
Country: France		0.384 (0.364)		-0.186 (0.330)
Country: Netherlands		-0.453 (0.289)		0.322 (0.262)
Country: Spain		0.502 (0.344)		-0.094 (0.311)
Country: Italy		-0.049 (0.346)		-0.105 (0.312)

Likelihood to Have Product Repaired/Replaced (Reluctant Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Country: Greece		-0.030		0.404
		(0.356)		(0.323)
Country: Poland		0.028		0.212
		(0.347)		(0.314)
Country: Romania		0.020		-0.113
		(0.321)		(0.291)
Country: Hungary		-0.646*		-0.101
		(0.321)		(0.291)
Gender: Female		0.140		-0.003
		(0.142)		(0.129)
Age: 25-39		0.002		0.319
		(0.250)		(0.227)
Age: 40-54		0.192		0.237
		(0.245)		(0.223)
Age: 55-64		0.319		0.190
		(0.287)		(0.261)
Age: 65+		0.502		0.597
		(0.354)		(0.321)
Education: Medium		0.473*		0.041
		(0.232)		(0.211)
Education: High		0.301		-0.104
		(0.239)		(0.217)
Household Income: Medium		-0.243		-0.148
		(0.183)		(0.165)
Household Income: High		0.119		-0.226
		(0.248)		(0.225)
Occupation: Manager		-0.167		-0.192
		(0.293)		(0.266)
Occupation: Other White Collar		0.032		-0.083
		(0.224)		(0.202)
Occupation: Manual Worker		-0.041		-0.049
		(0.303)		(0.275)
Occupation: House Person		0.024		0.230
		(0.362)		(0.329)
Occupation: Unemployed		0.104		-0.730*
		(0.319)		(0.288)
Occupation: Retired		-0.367		-0.352
		(0.321)		(0.290)
Occupation: Student		0.158		-0.092
		(0.470)		(0.426)
Affinity to Repair		0.019		-0.002
		(0.067)		(0.061)
Prejudice towards used goods		-0.175*		0.092
		(0.072)		(0.065)
Sustainability engagement		0.102		0.086
		(0.068)		(0.061)

Likelihood to Have Product Repaired/Replaced (Reluctant Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
Product: Refrigerator	-0.125	-0.148	0.158	0.141
	(0.314)	(0.315)	(0.309)	(0.309)
Product: Pair of Shoes	-0.061	-0.055	-0.024	0.030
	(0.288)	(0.288)	(0.288)	(0.289)
T3/4.02: Repair&Replace, 1.5 years	-0.251	-0.264	0.135	0.149
	(0.246)	(0.247)	(0.247)	(0.247)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended	0.025	-0.012	0.144	0.170
	(0.326)	(0.326)	(0.325)	(0.326)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair	0.425	0.524	-0.434	-0.543
	(0.357)	(0.358)	(0.344)	(0.346)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair	-0.002	0.099	0.024	-0.086
	(0.360)	(0.360)	(0.347)	(0.350)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace	0.539	0.397	0.570	0.496
	(0.346)	(0.349)	(0.330)	(0.335)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace	0.350	0.215	0.585	0.516
	(0.342)	(0.344)	(0.328)	(0.332)
T4.11: Repair&Replace NOT covered, 2.5 years	-0.308	-0.289	-0.743*	-0.675*
	(0.339)	(0.339)	(0.330)	(0.334)
T4.12: Repair&Replace NOT covered, 4.5 years	-0.569	-0.553	-0.534	-0.464
	(0.337)	(0.337)	(0.326)	(0.329)
T4.21 Repair-Only, NO replace, 2.5 years	0.994**	0.946*	-1.343***	-1.259***
	(0.380)	(0.382)	(0.365)	(0.369)
T4.22 Repair-Only, NO replace, 4.5 years	0.429	0.381	-0.952**	-0.868*
	(0.380)	(0.382)	(0.365)	(0.369)
T4.31: Repair&Replace, 2.5 years	-0.111	-0.160	0.067	0.086
	(0.377)	(0.381)	(0.367)	(0.373)
T4.32: Repair&Replace, 4.5 years	-0.415	-0.464	0.480	0.495
	(0.377)	(0.381)	(0.363)	(0.369)
T3/4.02: Repair&Replace, 1.5 years, Refrigerator	-0.064	-0.055	0.082	0.086
	(0.373)	(0.373)	(0.369)	(0.369)
T3/4.02: Repair&Replace, 1.5 years, Pair of Shoes	0.001	-0.024	0.090	0.061
	(0.345)	(0.345)	(0.346)	(0.346)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Refrigerator	-0.187	-0.173	-0.136	-0.130
	(0.451)	(0.451)	(0.446)	(0.447)
T3.1: Repair&Relace, 1.5 years, Guarantee Suspended, Pair of Shoes	-0.403	-0.443	0.029	-0.025
	(0.416)	(0.417)	(0.419)	(0.419)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Refrigerator	-0.109	-0.134	0.428	0.451
	(0.439)	(0.439)	(0.437)	(0.437)
T3.21: Repair&Replace, 0.5 years, Guarantee Restarts Repair, Pair of Shoes	-0.123	-0.201	0.960*	0.946*
	(0.427)	(0.427)	(0.429)	(0.429)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Refrigerator	0.395	0.359	0.046	0.077
	(0.443)	(0.443)	(0.443)	(0.444)

Likelihood to Have Product Repaired/Replaced (Reluctant Replacers)				
	Mixed-effects linear model			
	Basic (Repair)	Extended (Repair)	Basic (Replace)	Extended (Replace)
T3.22: Repair&Replace, 1.5 years, Guarantee Restarts Repair, Pair of Shoes	0.235 (0.430)	0.158 (0.431)	0.168 (0.431)	0.155 (0.431)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Refrigerator	-0.715 (0.437)	-0.697 (0.437)	-0.302 (0.436)	-0.293 (0.437)
T3.31: Repair&Replace, 0.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.252 (0.411)	-0.226 (0.411)	-0.416 (0.413)	-0.466 (0.413)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Refrigerator	-0.440 (0.435)	-0.428 (0.435)	-0.345 (0.432)	-0.337 (0.432)
T3.32: Repair&Replace, 1.5 years, Guarantee Restarts Repair/Replace, Pair of Shoes	-0.089 (0.405)	-0.073 (0.405)	-0.165 (0.410)	-0.218 (0.410)
T4.11: Repair&Replace NOT covered, 2.5 years, Refrigerator	0.726 (0.423)	0.761 (0.423)	-0.554 (0.426)	-0.537 (0.427)
T4.11: Repair&Replace NOT covered, 2.5 years, Pair of Shoes	0.403 (0.407)	0.385 (0.408)	0.065 (0.412)	0.030 (0.412)
T4.12: Repair&Replace NOT covered, 4.5 years, Refrigerator	0.740 (0.421)	0.779 (0.421)	-0.217 (0.419)	-0.207 (0.420)
T4.12: Repair&Replace NOT covered, 4.5 years, Pair of Shoes	-0.118 (0.404)	-0.136 (0.404)	-0.212 (0.408)	-0.249 (0.408)
T4.21 Repair-Only, NO replace, 2.5 years, Refrigerator	0.380 (0.458)	0.427 (0.458)	-0.357 (0.455)	-0.339 (0.455)
T4.21 Repair-Only, NO replace, 2.5 years, Pair of Shoes	0.057 (0.457)	0.068 (0.457)	0.066 (0.463)	-0.021 (0.464)
T4.22 Repair-Only, NO replace, 4.5 years, Refrigerator	0.279 (0.458)	0.326 (0.458)	-0.143 (0.456)	-0.132 (0.456)
T4.22 Repair-Only, NO replace, 4.5 years, Pair of Shoes	-0.378 (0.457)	-0.367 (0.457)	0.354 (0.459)	0.279 (0.459)
T4.31: Repair&Replace, 2.5 years, Refrigerator	0.144 (0.471)	0.166 (0.472)	0.196 (0.471)	0.237 (0.471)
T4.31: Repair&Replace, 2.5 years, Pair of Shoes	0.170 (0.434)	0.137 (0.434)	-0.199 (0.438)	-0.221 (0.439)
T4.32: Repair&Replace, 4.5 years, Refrigerator	0.166 (0.475)	0.192 (0.476)	-0.505 (0.472)	-0.464 (0.473)
T4.32: Repair&Replace, 4.5 years, Pair of Shoes	-0.119 (0.434)	-0.153 (0.434)	-0.424 (0.436)	-0.443 (0.436)
Constant	3.901*** (0.233)	3.601*** (0.490)	4.397*** (0.226)	4.391*** (0.454)
N	1250	1250	1246	1246
Log Likelihood	-2154.698	-2148.816	-2120.924	-2124.612
AIC	4391.396	4435.632	4323.848	4387.224
BIC	4601.763	4789.664	4534.083	4741.035
***p < .001; **p < .01; *p < .05				

Table 18 - Price at which to buy used product (enthusiastic repairers) mixed effects linear model (estimates and standard errors)

Price at Which to buy Used Product (Enthusiastic Repairers)		
	Mixed-effects linear model	
	Basic	Extended
Country: Germany		-40.812 (29.549)
Country: France		7.289 (27.517)
Country: Netherlands		23.208 (29.655)
Country: Spain		6.784 (27.919)
Country: Italy		-17.723 (27.997)
Country: Greece		-19.112 (28.463)
Country: Poland		-12.031 (26.637)
Country: Romania		4.894 (28.709)
Country: Hungary		-53.601* (26.101)
Gender: Female		-11.145 (12.850)
Age: 25-39		-37.952 (25.607)
Age: 40-54		-53.798* (24.627)
Age: 55-64		-50.535 (26.007)
Age: 65+		-109.817***. (29.214)
Education: Medium		-21.858 (19.470)
Education: High		-10.118 (20.342)
Household Income: Medium		22.214 (14.184)
Household Income: High		23.889 (20.804)
Occupation: Manager		-45.713 (23.658)
Occupation: Other White Collar		-53.268**. (19.956)
Occupation: Manual Worker		-17.721 (25.507)

Occupation: House Person		-29.367
		(31.133)
Occupation: Unemployed		-48.140
		(30.366)
Occupation: Retired		-25.419
		(23.766)
Occupation: Student		-59.609
		(34.294)
Affinity to Repair		-25.421
		14.296)
Prejudice towards used goods		-22.546*
		(9.449)
Sustainability engagement		45.999***.
		(11.756)
Product: Refrigerator	166.116***.	161.371***.
	(22.355)	(22.433)
Product: Pair of Shoes	-103.922***.	-105.889***
	(21.782)	(21.701)
T5.12: WTP 2nd hand product, 2 year guarantee	49.537*	50.876*
	(22.103)	(22.279)
T5.21: WTP LOW refurb product, 1 year guarantee	11.339	16.841
	(25.415)	(24.969)
T5.22: WTP LOW refurb product, 2 year guarantee	42.024	48.987*
	(25.415)	(24.969)
T5.31: WTP HIGH refurb product, 1 year guarantee	-13.651	-20.639
	(26.938)	(26.176)
T5.32: WTP HIGH refurb product, 2 year guarantee	69.730**	63.723*
	(26.938)	(26.176)
T5.12: WTP 2nd hand product, 2 year guarantee, Refrigerator	80.271**	79.114**
	(29.724)	(29.926)
T5.12: WTP 2nd hand product, 2 year guarantee, Pair of Shoes	-28.646	-29.985
	(29.198)	(29.265)
T5.21: WTP LOW refurb product, 1 year guarantee, Refrigerator	1.779	9.337
	(30.608)	(30.831)
T5.21: WTP LOW refurb product, 1 year guarantee, Pair of Shoes	-1.275	0.177
	(30.598)	(30.507)
T5.22: WTP LOW refurb product, 2 year guarantee, Refrigerator	102.920***	102.229***.
	(30.608)	(30.831)
T5.22: WTP LOW refurb product, 2 year guarantee, Pair of Shoes	-15.983	-15.993
	(30.598)	(30.507)
T5.31: WTP HIGH refurb product, 1 year guarantee, Refrigerator	-29.298	-19.750
	(34.053)	(34.031)
T5.31: WTP HIGH refurb product, 1 year guarantee, Pair of Shoes	24.593	29.494
	(31.514)	(31.549)
T5.32: WTP HIGH refurb product, 2 year guarantee, Refrigerator	70.228*	78.794*
	(34.053)	(34.031)
T5.32: WTP HIGH refurb product, 2 year guarantee, Pair of Shoes	-38.940	-34.960
	(31.514)	(31.549)
Constant	159.225***	275.938***
	(18.553)	(58.149)
N	768	752

Log Likelihood	-4634.197	-4382.526
AIC	9308.394	8861.052
BIC	9401.270	9082.943

***p < .001; **p < .01; *p < .05

Table 19 - Price at which to buy used product (enthusiastic replacers) mixed-effects linear model (estimates and standard errors)

Price at Which to buy Used Product (Enthusiastic Replacers)		
		Model linear mixed-effects
	Basic	**Extended**
Country: Germany		12.178 (13.847)
Country: France		-2.144 (15.163)
Country: Netherlands		-9.659 (13.598)
Country: Spain		8.776 (13.751)
Country: Italy		-24.593 (14.707)
Country: Greece		-10.196 (13.768)
Country: Poland		-10.800 (14.949)
Country: Romania		59.947*** (14.498)
Country: Hungary		-61.503*** (13.631)
Gender: Female		-2.375 (6.418)
Age: 25-39		-29.970* (12.779)
Age: 40-54		-51.496*** (12.863)
Age: 55-64		-72.024*** (14.221)
Age: 65+		-80.997*** (16.274)
Education: Medium		-10.877 (11.287)
Education: High		-6.109 (11.508)
Household Income: Medium		-10.513 (8.252)
Household Income: High		-30.426** (11.384)

Occupation: Manager		11.837
		(14.030)
Occupation: Other White Collar		16.874
		(10.911)
Occupation: Manual Worker		9.836
		(13.941)
Occupation: House Person		6.866
		(15.907)
Occupation: Unemployed		-3.678
		(16.707)
Occupation: Retired		6.760
		(14.082)
Occupation: Student		-14.444
		(19.599)
Affinity to Repair		15.349**
		(5.794)
Prejudice towards used goods		-23.383***.
		(4.927)
Sustainability engagement		12.510*
		(5.338)
Product: Refrigerator	134.381***.	134.697***.
	(11.656)	(11.766)
Product: Pair of Shoes	-86.574***.	-85.148***.
	(11.209)	(11.283)
T5.12: WTP 2nd hand product, 2 year guarantee	62.905***.	62.893***.
	(10.807)	(10.923)
T5.21: WTP LOW refurb product, 1 year guarantee	13.160	10.971
	(13.268)	(12.929)
T5.22: WTP LOW refurb product, 2 year guarantee	65.925***.	63.203***.
	(13.268)	(12.929)
T5.31: WTP HIGH refurb product, 1 year guarantee	18.129	14.469
	(13.178)	(12.720)
T5.32: WTP HIGH refurb product, 2 year guarantee	75.960***.	72.610***.
	(13.178)	(12.720)
T5.12: WTP 2nd hand product, 2 year guarantee, Refrigerator	68.635***.	68.361***.
	(15.551)	(15.785)
T5.12: WTP 2nd hand product, 2 year guarantee, Pair of Shoes	-42.522**	-42.975**.
	(15.113)	(15.296)
T5.21: WTP LOW refurb product, 1 year guarantee, Refrigerator	-3.945	-7.206
	(15.991)	(16.228)
T5.21: WTP LOW refurb product, 1 year guarantee, Pair of Shoes	-6.009	-8.201
	(15.856)	(16.017)
T5.22: WTP LOW refurb product, 2 year guarantee, Refrigerator	64.841***.	63.450***.
	(15.991)	(16.228)
T5.22: WTP LOW refurb product, 2 year guarantee, Pair of Shoes	-38.392*	-40.699*
	(15.856)	(16.017)
T5.31: WTP HIGH refurb product, 1 year guarantee, Refrigerator	-2.192	1.184
	(16.037)	(16.186)
T5.31: WTP HIGH refurb product, 1 year guarantee, Pair of Shoes	-12.309	-14.790
	(15.669)	(15.773)

T5.32: WTP HIGH refurb product, 2 year guarantee, Refrigerator	69.531*** (16.037)	75.928*** (16.186)
T5.32: WTP HIGH refurb product, 2 year guarantee, Pair of Shoes	-56.451*** (15.669)	-58.826*** (15.773)
Constant	130.519*** (9.455)	212.247*** (26.687)
N	2868	2780
Log Likelihood	-17503.910	-16777.130
AIC	35047.820	33650.260
BIC	35167.050	33934.910

***p < .001; **p < .01; *p < .05

Table 20 - Price at which to buy used product (reluctant repairers) mixed-effects linear model (estimates and standard errors)

Price at Which to buy Used Product (Reluctant Repairers)		
	Model linear mixed-effects	
	Basic	Extended
Country: Germany		-12.078 (18.226)
Country: France		-38.582* (18.415)
Country: Netherlands		-50.014** (18.981)
Country: Spain		-23.117 (17.663)
Country: Italy		-55.629** (17.937)
Country: Greece		-45.982** (16.754)
Country: Poland		-47.567** (18.033)
Country: Romania		16.066 (17.141)
Country: Hungary		-86.615*** (18.699)
Gender: Female		-10.342 (7.329)
Age: 25-39		-38.508** (13.019)
Age: 40-54		-49.267*** (13.106)
Age: 55-64		-65.989*** (14.705)
Age: 65+		-80.876*** (17.991)
Education: Medium		-2.333 (14.286)

Education: High		4.839 (14.352)
Household Income: Medium		9.635 (8.670)
Household Income: High		11.188 (12.921)
Occupation: Manager		-1.525 (15.786)
Occupation: Other White Collar		-4.574 (10.938)
Occupation: Manual Worker		0.825 (14.304)
Occupation: House Person		0.400 (21.263)
Occupation: Unemployed		-6.257 (16.965)
Occupation: Retired		-8.157 (16.120)
Occupation: Student		-0.543 (20.575)
Affinity to Repair		10.032 (6.298)
Prejudice towards used goods		-19.625***. (5.638)
Sustainability engagement		4.394 (6.021)
Product: Refrigerator	153.726***. (12.398)	148.815***. (12.509)
Product: Pair of Shoes	-97.931***. (12.295)	-97.658***. (12.415)
T5.12: WTP 2nd hand product, 2 year guarantee	58.258***. (11.562)	56.872***. (11.737)
T5.21: WTP LOW refurb product, 1 year guarantee	-7.818 (14.390)	-13.822 (14.010)
T5.22: WTP LOW refurb product, 2 year guarantee	65.062***. (14.390)	59.636***. (14.010)
T5.31: WTP HIGH refurb product, 1 year guarantee	-1.110 (14.513)	-1.542 (14.097)
T5.32: WTP HIGH refurb product, 2 year guarantee	53.547***. (14.513)	53.574***. (14.097)
T5.12: WTP 2nd hand product, 2 year guarantee, Refrigerator	65.107***. (16.649)	67.662***. (16.876)
T5.12: WTP 2nd hand product, 2 year guarantee, Pair of Shoes	-40.538* (16.546)	-39.783* (16.768)
T5.21: WTP LOW refurb product, 1 year guarantee, Refrigerator	11.793 (17.677)	17.000 (17.759)
T5.21: WTP LOW refurb product, 1 year guarantee, Pair of Shoes	3.365 (17.631)	0.893 (17.744)
T5.22: WTP LOW refurb product, 2 year guarantee, Refrigerator	75.674***. (17.677)	81.812***. (17.759)

T5.22: WTP LOW refurb product, 2 year guarantee, Pair of Shoes	-48.881**	-51.385**
	(17.631)	(17.744)
T5.31: WTP HIGH refurb product, 1 year guarantee, Refrigerator	-3.971	-2.829
	(17.708)	(17.789)
T5.31: WTP HIGH refurb product, 1 year guarantee, Pair of Shoes	-2.161	-1.009
	(17.331)	(17.397)
T5.32: WTP HIGH refurb product, 2 year guarantee, Refrigerator	75.322***	77.734***
	(17.708)	(17.789)
T5.32: WTP HIGH refurb product, 2 year guarantee, Pair of Shoes	-31.250	-30.376
	(17.331)	(17.397)
Constant	156.980***	259.519***
	(10.088)	(28.668)
N	2256	2216
Log Likelihood	-13737.660	-13323.600
AIC	27515.330	26743.200
BIC	27629.760	27016.970

***p < .001; **p < .01; *p < .05

Table 21 - Price at which to buy used product (reluctant replacers) mixed-effects linear model (estimates and standard errors)

Price at Which to buy Used Product (Reluctant Replacers)		
	Model linear mixed-effects	
	Basic	Extended
Country: Germany		0.548
		(36.075)
Country: France		-3.388
		(35.312)
Country: Netherlands		-25.467
		(35.435)
Country: Spain		3.421
		(37.656)
Country: Italy		13.215
		(36.658)
Country: Greece		21.976
		(45.726)
Country: Poland		-17.013
		(37.660)
Country: Romania		35.054
		(44.986)
Country: Hungary		-82.067*
		(39.866)
Gender: Female		-21.962
		(16.259)
Age: 25-39		-44.511
		(28.242)
Age: 40-54		-57.511*
		(28.955)

Age: 55-64		-59.150 (31.702)
Age: 65+		-66.067 (41.727)
Education: Medium		43.723 (27.176)
Education: High		39.059 (26.212)
Household Income: Medium		47.020* (22.873)
Household Income: High		30.203 (29.892)
Occupation: Manager		-24.144 (39.509)
Occupation: Other White Collar		7.210 (31.235)
Occupation: Manual Worker		50.358 (37.908)
Occupation: House Person		5.873 (41.119)
Occupation: Unemployed		44.061 (45.527)
Occupation: Retired		-4.925 (42.046)
Affinity to Repair		-7.521 (19.819)
Prejudice towards used goods		-12.451 (11.268)
Sustainability engagement		-10.306 (13.683)
Product: Refrigerator	125.319***. (25.948)	137.422***. (26.542)
Product: Pair of Shoes	-102.327***. (26.608)	-94.568***. (27.003)
T5.12: WTP 2nd hand product, 2 year guarantee	44.125 (26.940)	45.964 (27.489)
T5.21: WTP LOW refurb product, 1 year guarantee	25.723 (31.721)	29.718 (32.522)
T5.22: WTP LOW refurb product, 2 year guarantee	69.033* (31.721)	73.028* (32.522)
T5.31: WTP HIGH refurb product, 1 year guarantee	24.292 (30.005)	26.575 (30.740)
T5.32: WTP HIGH refurb product, 2 year guarantee	72.773* (30.005)	75.045* (30.740)
T5.12: WTP 2nd hand product, 2 year guarantee, Refrigerator	50.642 (34.511)	48.666 (35.113)
T5.12: WTP 2nd hand product, 2 year guarantee, Pair of Shoes	-21.824 (35.068)	-23.663 (35.488)
T5.21: WTP LOW refurb product, 1 year guarantee, Refrigerator	43.554 (36.714)	29.923 (37.265)

T5.21: WTP LOW refurb product, 1 year guarantee, Pair of Shoes	-0.743 (37.581)	-10.936 (38.070)
T5.22: WTP LOW refurb product, 2 year guarantee, Refrigerator	126.456*** (36.714)	116.896** (37.265)
T5.22: WTP LOW refurb product, 2 year guarantee, Pair of Shoes	-36.302 (37.581)	-46.227 (38.070)
T5.31: WTP HIGH refurb product, 1 year guarantee, Refrigerator	33.716 (35.589)	20.489 (36.209)
T5.31: WTP HIGH refurb product, 1 year guarantee, Pair of Shoes	-18.149 (35.891)	-29.817 (36.475)
T5.32: WTP HIGH refurb product, 2 year guarantee, Refrigerator	80.488* (35.589)	67.271 (36.209)
T5.32: WTP HIGH refurb product, 2 year guarantee, Pair of Shoes	-55.547 (35.891)	-67.359 (36.475)
Constant	148.134*** (22.888)	190.351* (82.266)
N	580	568
Log Likelihood	-3479.621	-3274.674
AIC	6999.241	6643.349
BIC	7086.502	6847.428

***p < .001; **p < .01; *p < .05

The full version of the experiment can be found in the Excel file attached to the report.

2.5. Experiment 2: Behavioural experiment on measures related to a potential 'Right to Repair'

This chapter presents the method used for designing the study's behavioural experiment (2). The main results are also presented.

2.5.1. Method

As part of the survey, a behavioural experiment was conducted to measure the potential effects of introducing a 'Right to Repair' on the behaviour of consumers. Specifically, the experiment was concerned with behavioural aspects of:

- Consumers' lack of information when deciding on whether to commission a repair
- The effect of diagnosis costs as a barrier for consumers to repair
- Relative importance of factors such as price and duration when deciding for or against a repair

This experiment was split into three separate parts. In the first experiment, participants were exposed to a situation in which they needed to decide whether

or not they would commission the repair of a defective product, with varying degrees of information available to them. The second experiment measured the effect of different levels of diagnosis costs on the likelihood of participants to commission such an assessment of repair costs. Both experiments were designed as a parallel-group study. The third experiment tested in a conjoint analysis design the relative importance the different factors of a repair offer may have for respondents. The four factors tested were handling, price, responsible party, and duration of the repair.

The experiment was conducted as part of an online survey. The online survey was carried out in a total 10 Member States of the European Union and included a sample of at least 800 participants per country. The countries covered are France, Germany, Greece, Hungary, Italy, Netherlands, Poland, Romania, Spain, and Sweden. The selection of countries was driven by a multitude of criteria, including geographical coverage, population size, known repair behaviour of the population, existing legal framework.[32]

Participants were selected from an online survey panel. This selection was carried out with a quota-based sampling approach applying fixed quotas based on national population statistics for each country of the study (on age, gender, region, with additional monitoring of soft quotas on factors like education and income). The fieldwork was carried out between 16 and 27 May 2022. Overall, 8,032 participants took part in the experiment. The achieved sample is representative for the general population 18 years and older in each of the countries.

The participant sample was split and respondents either participated in the first experiment or the second experiment. The participants were allocated either with 60% probability to the first experiment (with around 4,800 participants in total) and with 40% probability to the second experiment (with around 3,200 participants in total). While in the first experiment, three types of products were tested in a between-subject design (smartphones, refrigerators, pair of shoes), the second experiments tested two types of products (smartphones, refrigerators). These products were selected in order to capture various factors influencing consumer decisions to repair popular consumer goods (type of product, including electronic and non-electronic goods, its value, modularity, need for transportation to repair and general likelihood to repair). The results of the experiments are therefore relevant for different product groups. Since the costs for receiving a repair quote is less relevant in the case of shoes, this product type was not included in the second experiment.

All respondents participated in the third experiment, in which participants' implicit preferences for different factors in relation to repair services were tested. The experiment used a conjoint analysis design to elicit the relative importance of various factors for consumers in a situation where they would claim a right to repair. The factors tested were price and duration of the repair, the handling of the product, and the party that is responsible for the repair.

[32] The country selection is described in detail in the main report

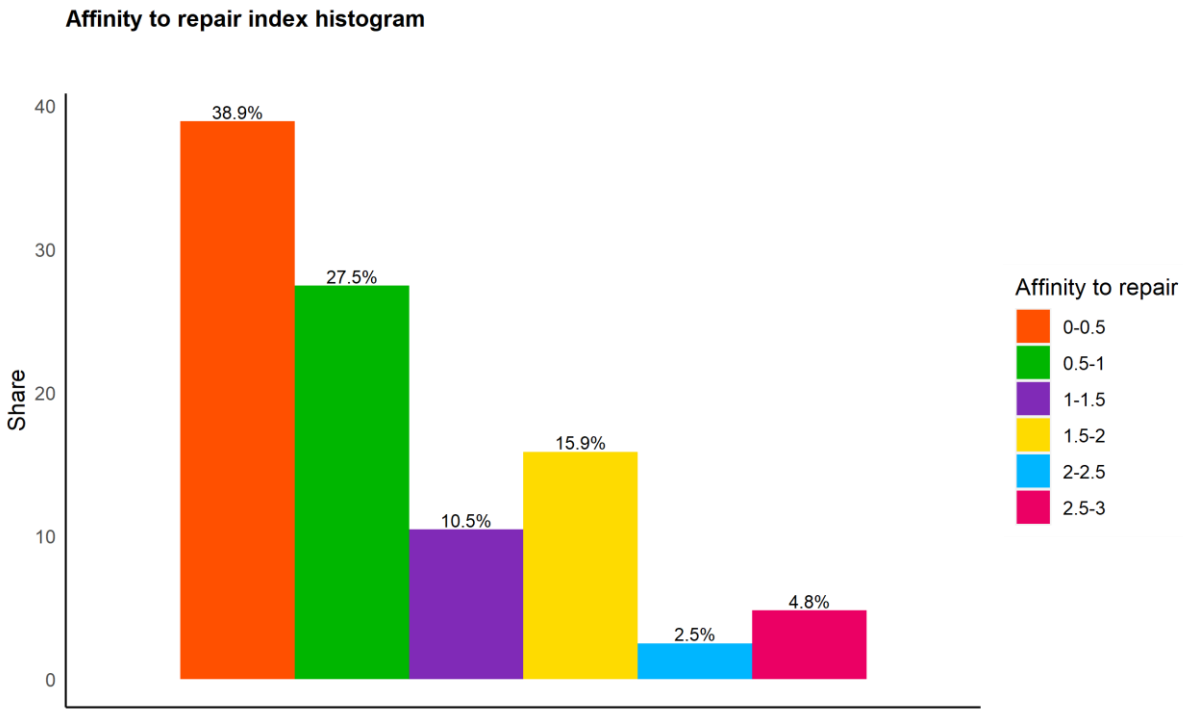
2.5.2. Consumer attitudes towards repair and second-hand and refurbished goods

2.5.2.1 Consumer's affinity to repair

In the survey part of this study, participants were asked about how likely they are to either repair or replace a product that they own and that is no longer working properly. They were asked to assume that the defect occurred within the legal guarantee period and without it being their fault. Based on the answers across three tested products, we created an index that summarises the affinity of respondents to repair.[33]

This affinity to repair index ranges from 0 to 3, with 0 indicating the lowest affinity to repair and 3 the highest. A majority have a lower score, which indicates that they have a lower affinity to repair. Strikingly, 38.9% of the respondents have an affinity to repair scores between 0-0.5. More than half of the participants (66.4%) have a score lower than 1. On the other hand, 4.8% of respondents are in the group with the highest scores (2.5-3), indicating a very high affinity to repair.

Figure 67 - Affinity to repair index – distribution of scores

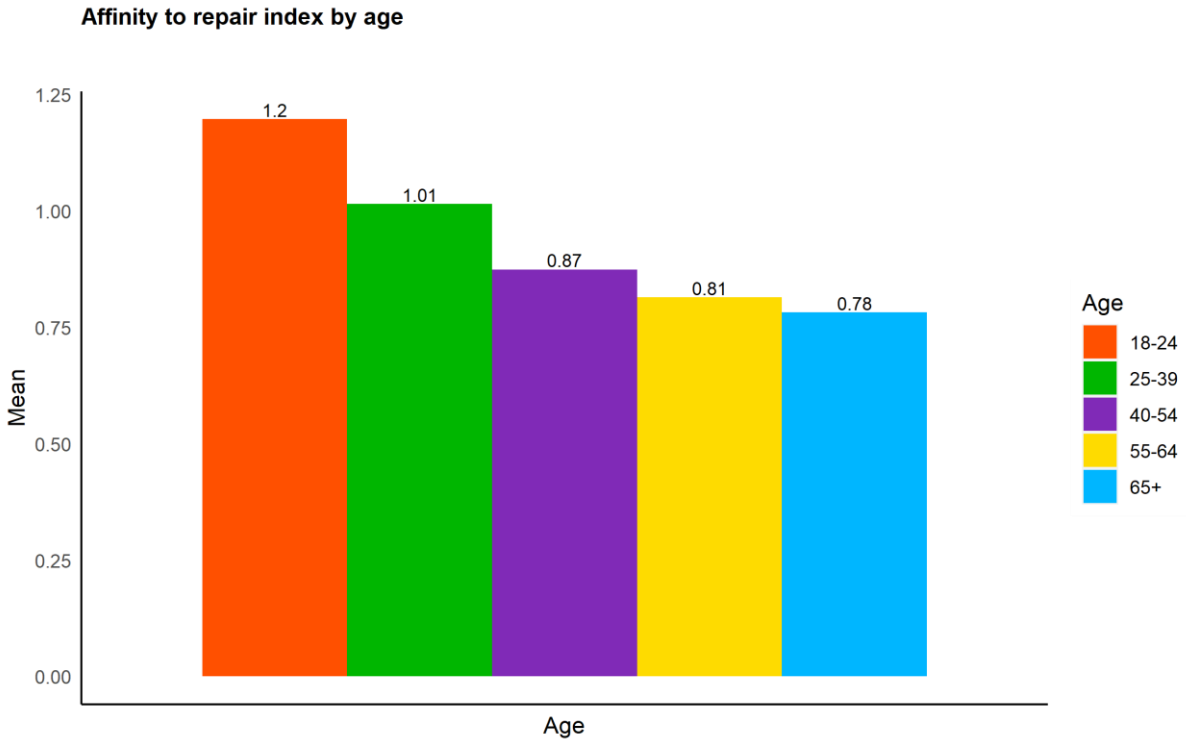


[33] This index was constructed by awarding a point score to respondents based on their answers on each item of question QB1 in the survey. The points awarded were 'Always have it replaced' 0 points, 'Probably have it replaced' 1 point, 'Probably have it repaired' 2 points, 'Always have repaired' 3 points. The results were normalised based on the number of items answered to range from 0-3. As regards the scale reliability diagnostic, the value obtained for Cronbach's Alpha value is > 0.75, indicating the scale as reliable.

Considering sociodemographic differences in the results, we see that

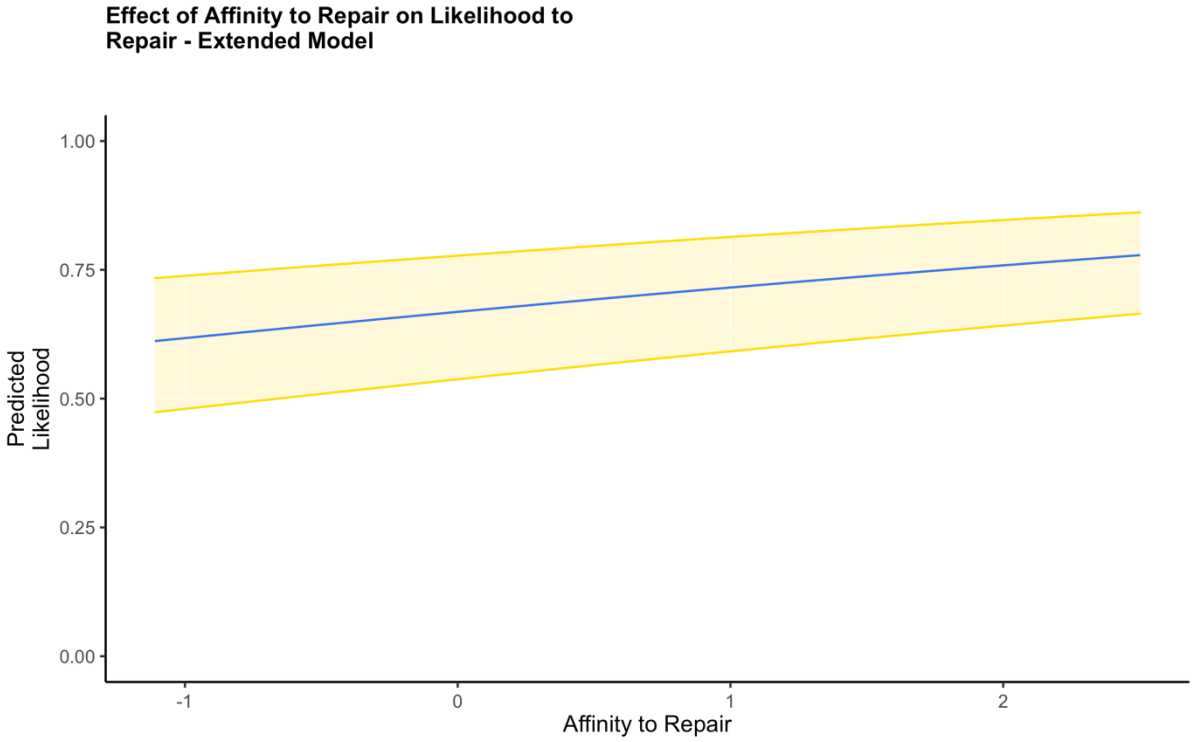
- Younger respondents have a higher affinity towards repair than older age groups. The average score among those ages 18-24 is 1.2, while on the other hand those aged 55-64 have an average score of 0.81 and those 65 years and older have an average score of 0.78
- Overall, the average affinity to repair score of men is slightly higher than women. Their average score is 0.94, while those of women is 0.89.

Figure 68 - Affinity to repair index by age groups



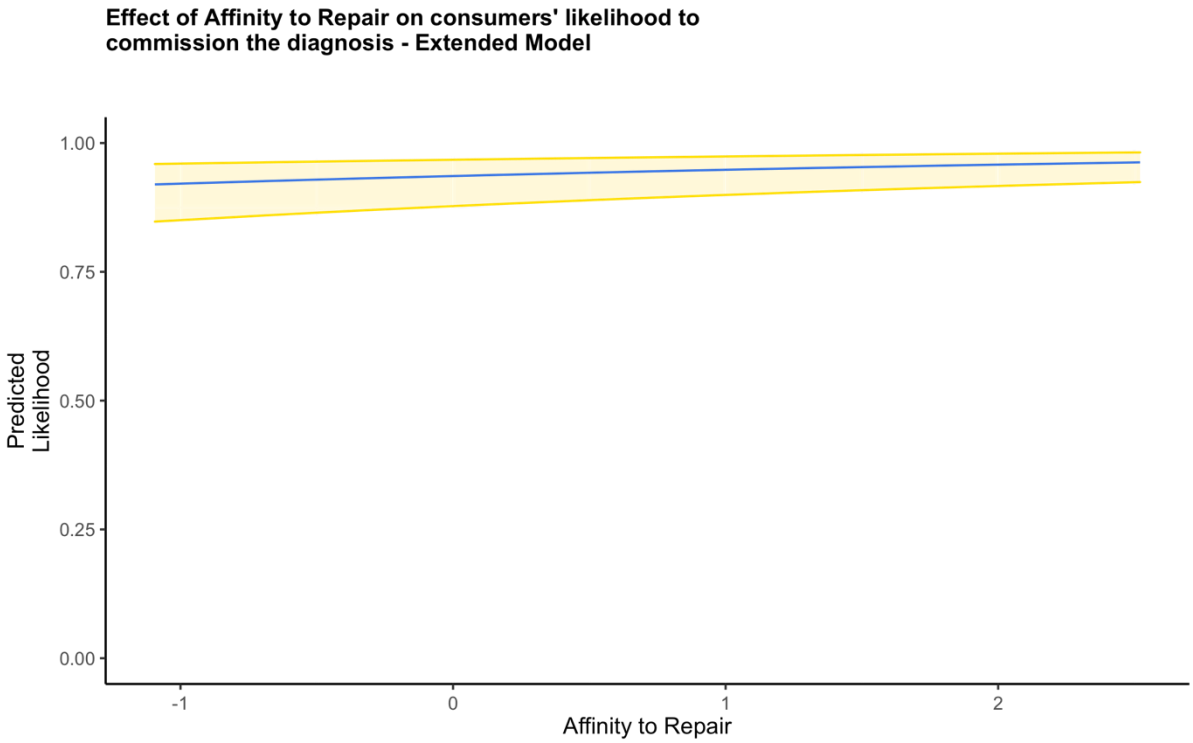
Considering consumers' likelihood to repair, consumers' affinity to repair has a significant positive effect. Perhaps unsurprisingly, the higher a consumer's affinity to have products repaired, the more they are likely to choose to have products repaired.

Figure 69 - Effect of affinity to repair on consumers' likelihood to repair



When it comes to consumers' likelihood to commission the diagnosis, consumers' affinity to repair had a significant positive effect on consumers' decision to request a quote for the repair costs. The higher the affinity of a consumer to have products repaired, the more likely they are to commission the diagnosis. The effect size is relatively small.

Figure 70 - Effect of affinity to repair on consumers' likelihood to commission the diagnosis



2.5.2.2 Sustainability engagement of consumers

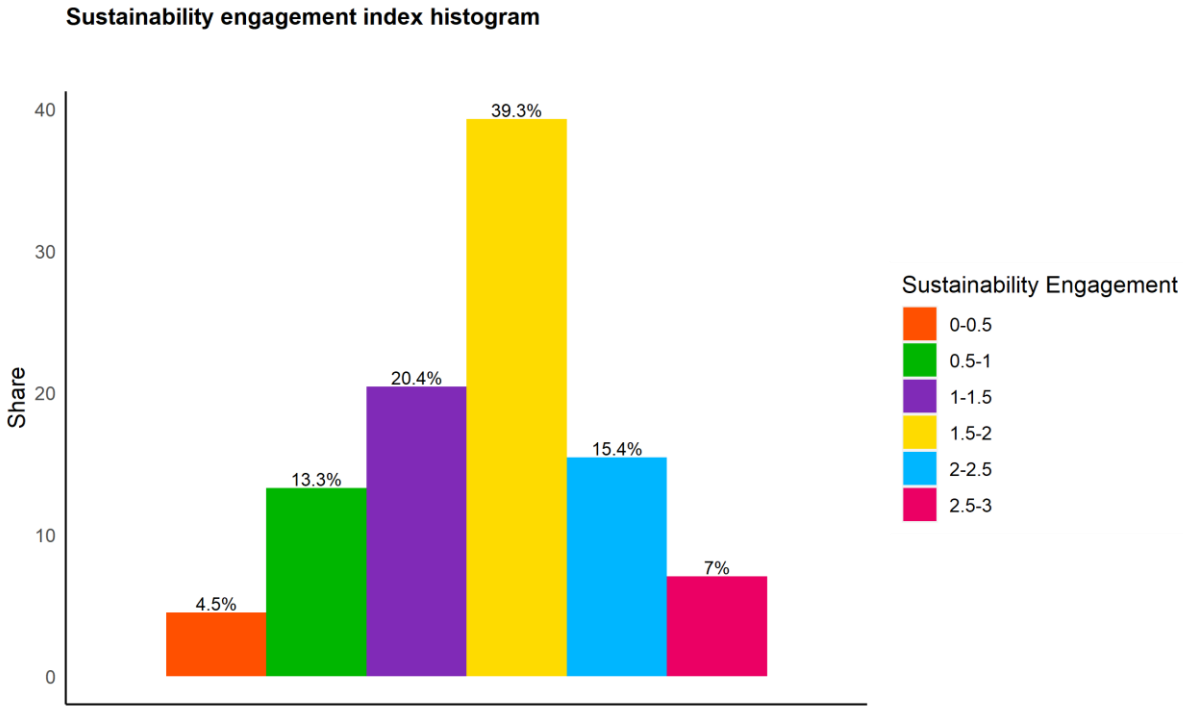
Respondents were asked to what extent they agree with statements on how much they value sustainability and reflect in their own actions as consumers. To summarise this level of engagement with sustainable practices, we created an index based on the statements that were tested in the survey.[34] This 'sustainability engagement index' is designed to indicate the level to which participants are engaged in sustainable behaviour, in particular regarding their consumer choices.

The sustainability engagement index ranges from 0 to 3. The distribution follows a normal distribution as 39.3% of the respondents have a score between 1.5-2. The sustainability engagement score of more than half participants (59.7%) is

[34] The question was adapted from Kantar's Sustainable Transformation Practice. As part of the questionnaire, agreement with overall 5 statements was tested, namely "I actively seek out companies and brands that offer ways of offsetting their impact on the environment", "I have stopped buying certain products/services because of their impact on the environment or society", "I am prepared to invest my time and money to support companies that try to do good". "Buying sustainable products shows others who I am and what I believe in", and "I don't believe environmental problems are bad enough to justify going out of my way to be green" (negative). Based on the answers, the following points were awarded: 'Fully agree' 3 points, 'Tend to agree' 2 points, 'Tend to disagree' 1 point, 'Fully disagree' 0 points. Points for item 5 were inverted. The results were normalised based on the number of items answered to range from 0-3.

between 1-2. On the other hand, the share of those who have the lowest scores, ranging between 0-0.5, is 4.5%.

Figure 71 - Sustainability engagement index – distribution of scores

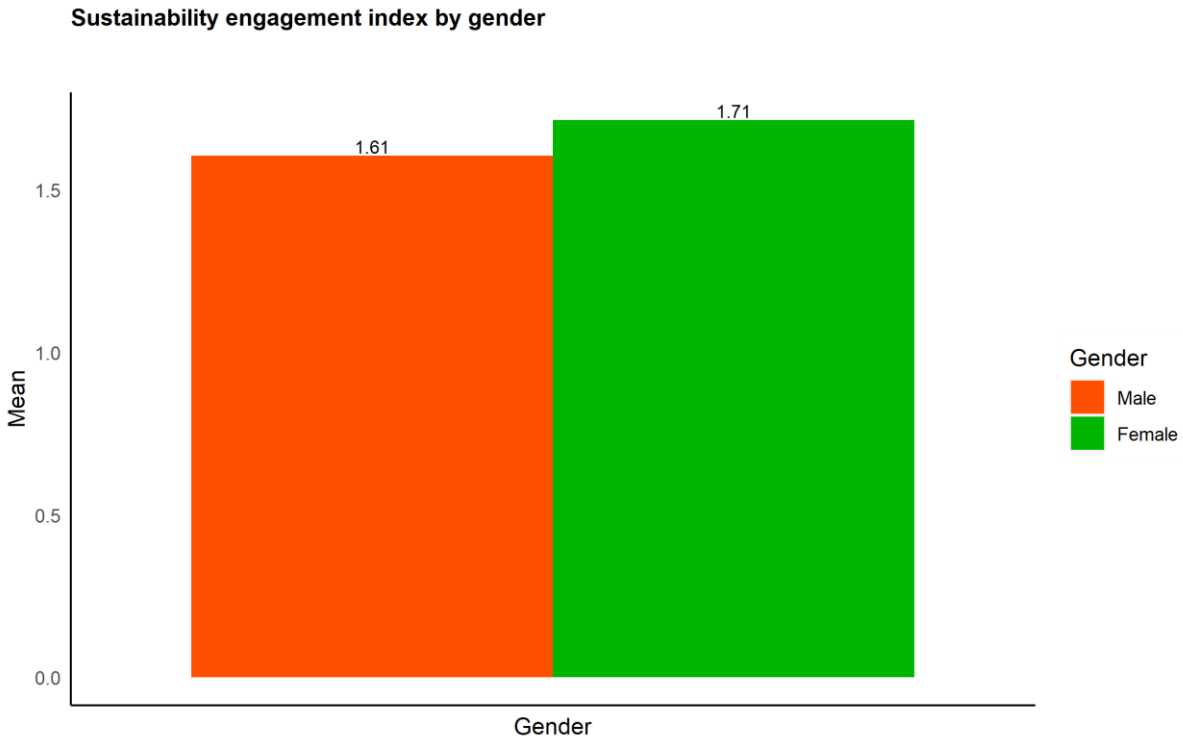


Considering sociodemographic differences in the results, it can be observed that:

- ➔ Overall, women have higher average sustainability engagement score than their male counterparts. Their average is 1.71, while men have an average score of 1.61.
- ➔ Sustainability engagement index appear to increase as the education level increases, although the trend is not quite pronounced.

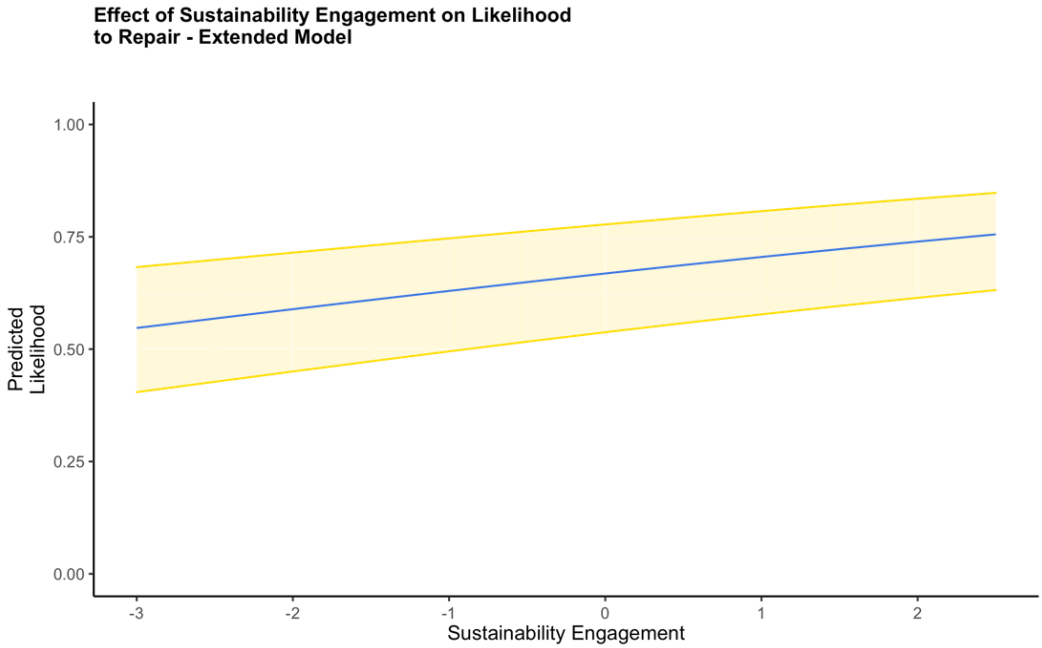
Interestingly, there seems to be no significant difference by age and income regarding consumers' level of engagement in sustainable practices.

Figure 72 - Sustainability engagement index by gender



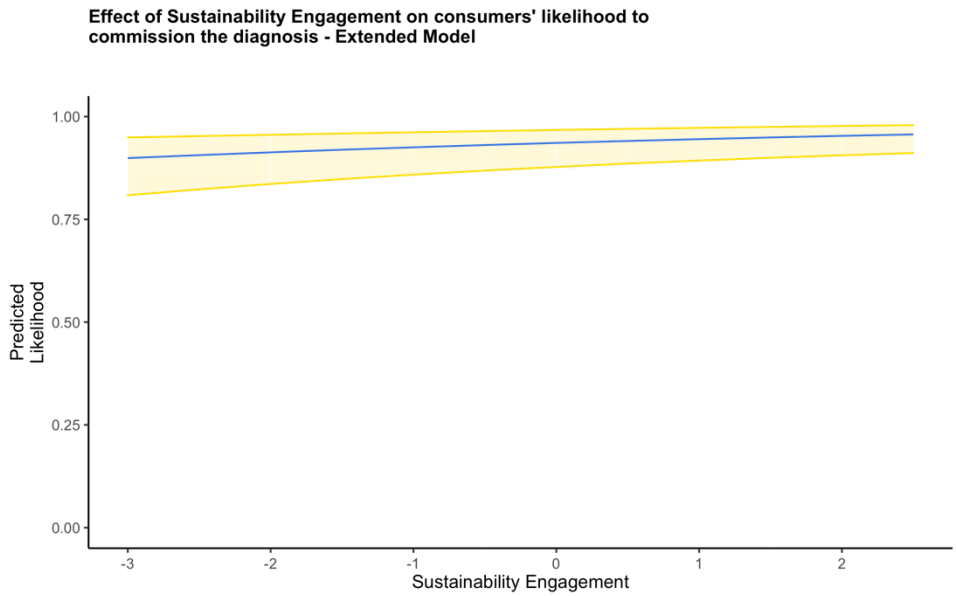
Considering the effect of the level of sustainability engagement on the likelihood to have a defective product repaired, the experiment reveals a significant positive effect. The higher the level of consumers' engagement in sustainable practices, the more likely they are to choose to have a defective product repaired. The effect size is moderate.

Figure 73 - Effect of sustainability engagement on likelihood to repair



The sustainability engagement also has a significant positive effect on consumers likelihood to commission the diagnosis, i.e., ask for a repair quote. The higher a consumer's level of engagement in sustainable practices, the more likely they are to commission the diagnosis of a defective product. However, the effect size is very small.

Figure 74 - Effect of sustainability engagement on consumers likelihood to commission the diagnosis



2.5.3. Consumer choices under the conditions of a 'Right to Repair'

As described in the introduction, participants were exposed to overall three experiments. These experiments aimed to capture different aspects that can be relevant for the design of a repair right for consumers. In the following sections, the findings from each of the experiments are analysed in detail.

2.5.3.1. Lack of information as a barrier to repair

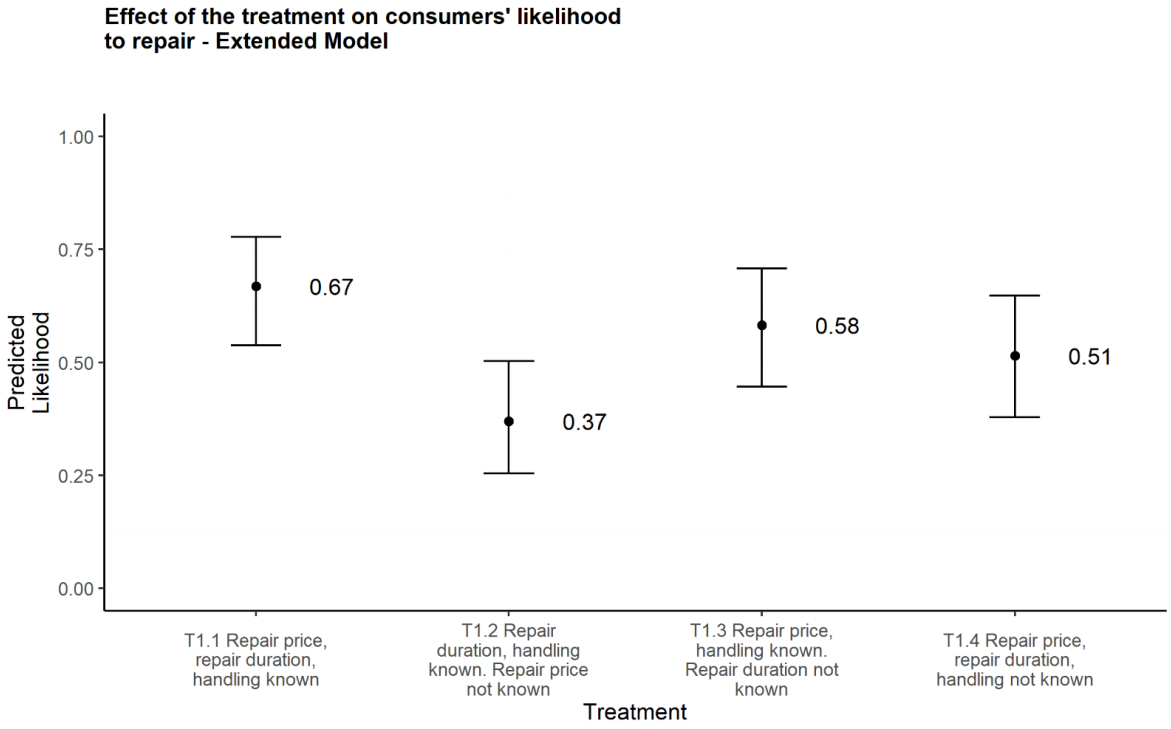
The aim of the first experiment was to show to what extent having certain information is affecting consumers' likelihood to decide for a repair. Such information could be the price of the repair, the duration of the repair, or the handling of the defective product. Participants were given different pieces of information about the repair of products in four treatment groups and were asked to report their willingness (to repair or not to repair) to repair under such conditions. They were exposed to treatments that contained different levels of information about the repair. Subsequently, they were asked to state whether or not they would commission the repair. The following table summarises the treatments participants were exposed to. We ran a multivariate logistic predictive analysis for each treatment group to analyse the results.

Table 22 - Treatments of first experiment and the encompassed specifications

Treatment	Specifications
T1.1	Repair price, repair duration, handling known
T1.2	Repair duration, handling known. Repair price not known
T1.3	Repair price, handling known. Repair duration not known
T1.4	Repair price, repair duration, handling not known

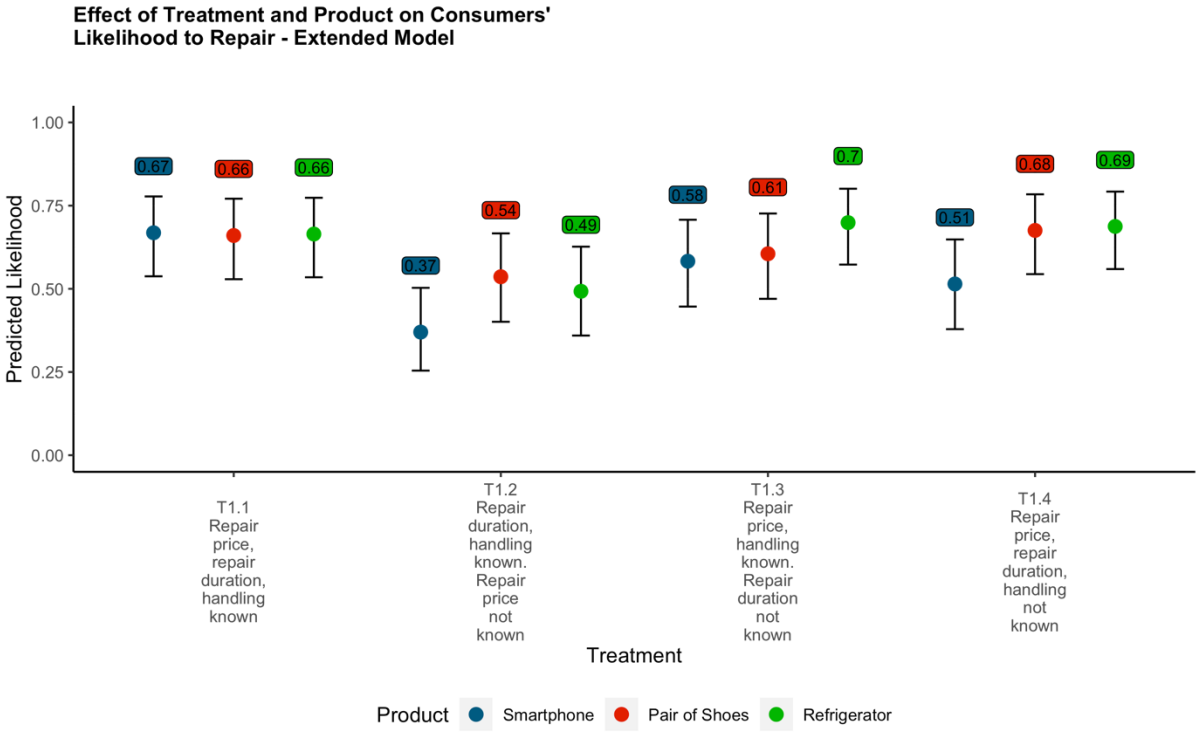
Participants are most likely to repair when all three elements of information regarding the repair (i.e., repair price, repair duration, and handling) were known, with a 0.67 predicted likelihood. In the results, we see that the largest negative effect can be observed for the second treatment, in which participants received all information about the repair options except for the price. The likelihood decreases to 0.37 in this case. Interestingly, the effect is less pronounced for the option where no information is known, but still significantly lower compared to the treatment in which all information is shown to respondents. Finally, the effect difference of the treatment where the repair duration is not known is not significant, if compared to the situation in which participants had full information. It can be concluded that the repair duration is of less crucial importance for respondents.

Figure 75 - Effect of different levels of repair information on the consumers' likelihood to repair



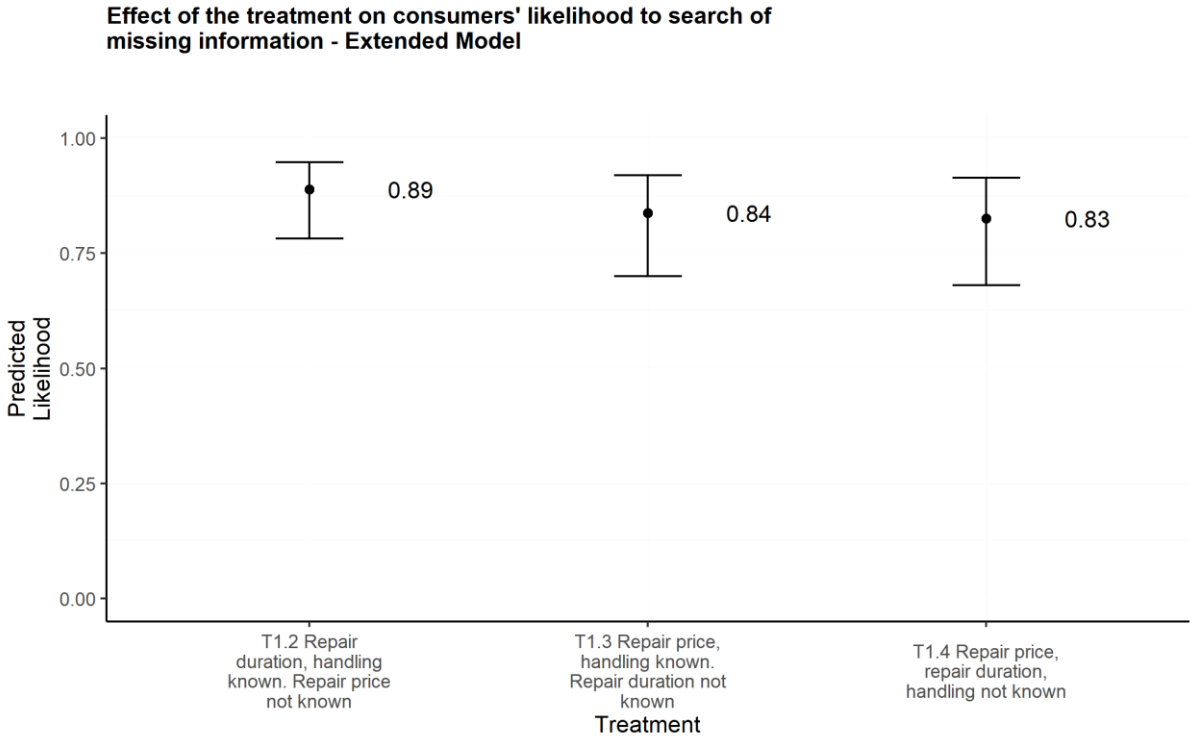
Some differences in the results by product type can be observed. There is a significantly lower likelihood in the case of smartphones for consumers to commission the repair when the price of the repair is not known. Conversely, the analysis shows that the missing information on the repair duration has no significant effect in the case of refrigerators.

Figure 76 - Effect of different levels of repair information on the consumers' likelihood to repair by product



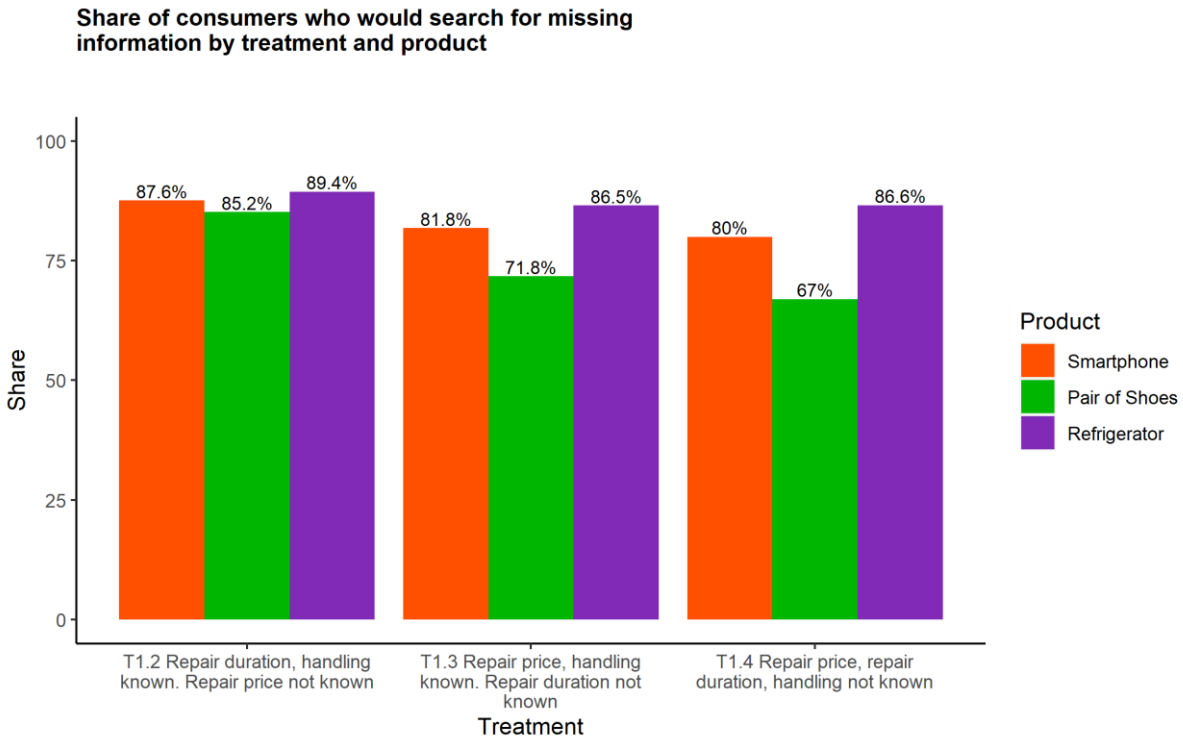
Subsequently, participants who were allocated to one of the three treatment groups where information was missing (treatment T1.2, T1.3 or T1.4) were asked whether they would search for missing information in this given situation. The likelihood of searching for missing information appears to be high across all treatment groups (above 0.80). The participants were most likely to search for missing information when repair duration and handling were known, but repair price was not known, with a predicted likelihood of 0.89. The probability of searching for missing information is similar between when the participants do not know the repair duration only (0.84) and no information is given about the repair (0.83).

Figure 77 - Effect of different repair information on consumers' likelihood to search of missing information



Considering the share of participants who would search for missing information, the results show notable differences by type of product and treatment. For smartphones and shoes, the share of the participants who report that they would search for missing information is highest when only missing information is repair price (all above 80%). For these two products, the participants are least likely to search for missing information when all three pieces of information regarding the repair is not provided, although the share of consumers is still high (smartphone 80%; pair of shoes 67%). On the other hand, for refrigerators, participants' likelihood of enquiring missing information mainly remains the same and high (above 86%) across conditions.

Figure 78 - Share of consumers who would search for missing information by treatment and product

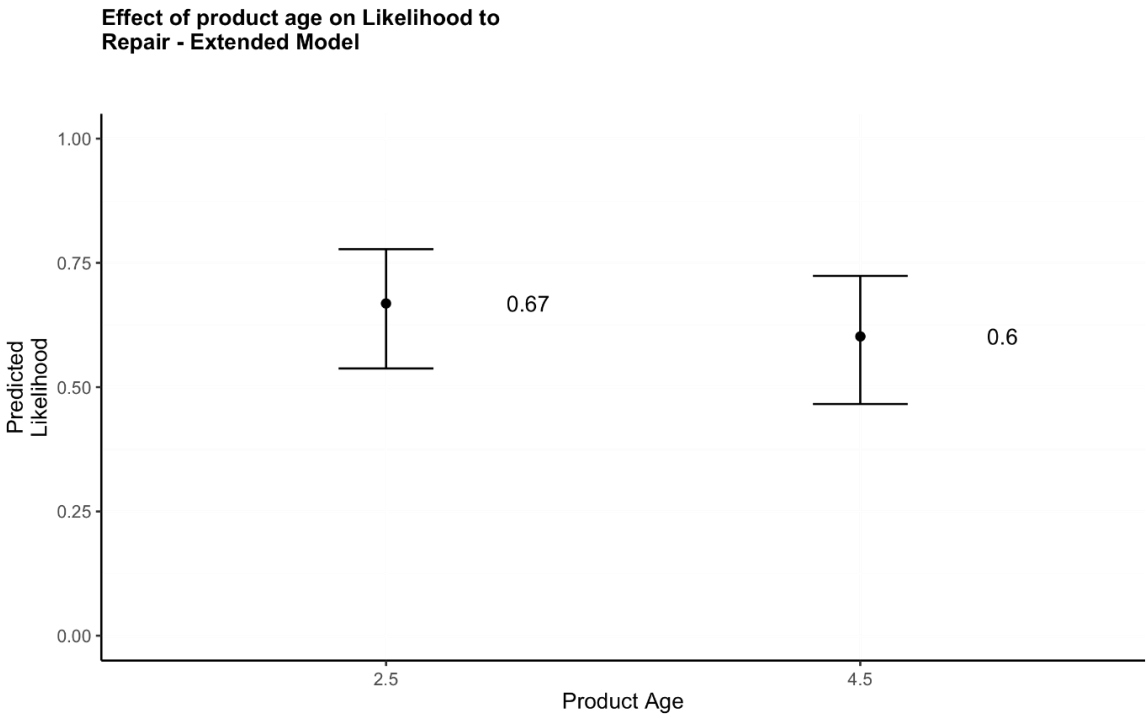


Finally, participants were given the missing information and subsequently asked whether they would repair under these circumstances. The information was the same across all treatment groups. The answers to this question can be used to calculate the magnitude to which missing information on repairs prevents consumers to commission a repair. Those consumers who would not repair under the conditions of missing information and not search for missing information, but then commission the repair when all information is provided to them, is the 'lost potential' of repairs that could be realised in the population if missing information is provided. Overall, this share was 2.9% among all participants in the experiment.

Sociodemographic differences

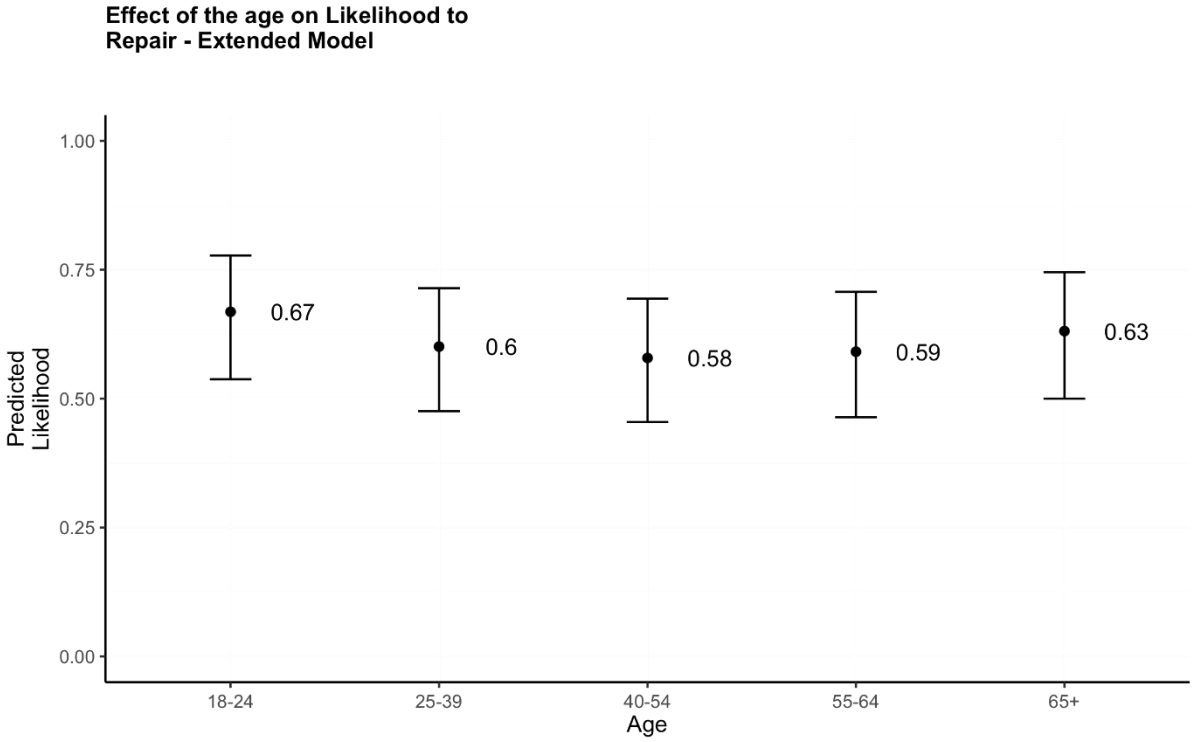
The results show few differences by characteristics of the product and the respondents. The age of the product has a small significant effect. Consumers are less likely to decide for a repair when the product is older.

Figure 79 - Effect of product age on likelihood to repair



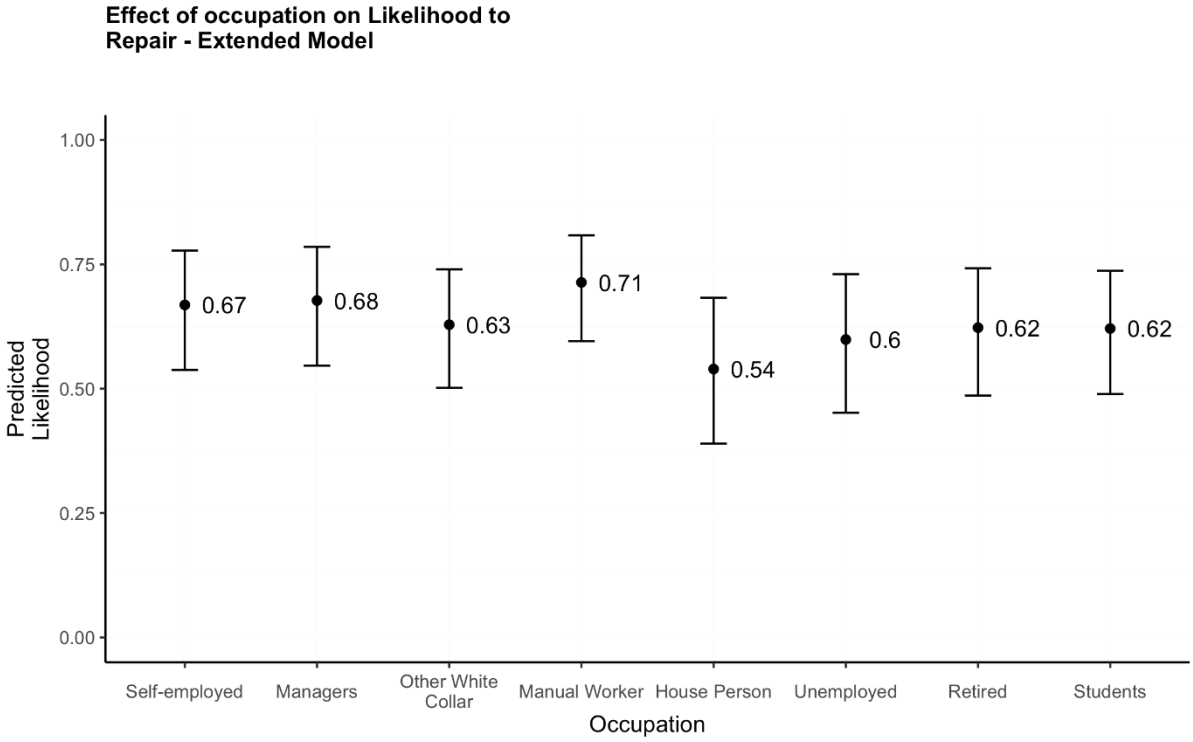
There are some differences by age of the participants. Participants from the youngest and oldest age groups are more likely to commission a repair than other age groups.

Figure 80 - Effect of age on likelihood to repair



The results show some difference by occupation. Manual workers are more likely to opt for a repair than other occupational groups. House persons are least likely to repair.

Figure 81 - Effect of occupation on likelihood to repair



2.5.3.2. The effect of diagnosis costs on the likelihood to repair

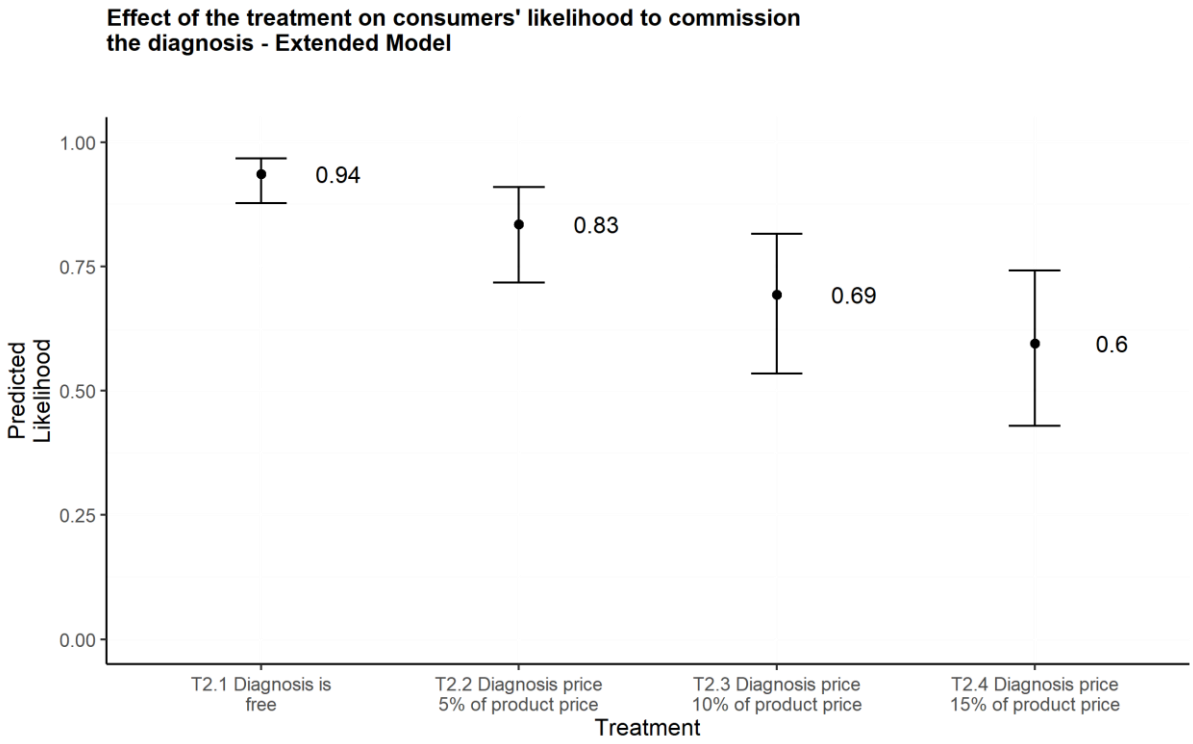
In the second experiment, participants were divided randomly into four groups and received different price information how much it would cost to receive a repair quote in a situation where a specific product is broken. The amounts that were presented to participants were the equivalent of 15%, 10% and 5% of the product price. The fourth group received the information that they would receive the repair quote for free. Following the exposure, participants were asked whether or not they would commission this repair quote.

Table 23 - Treatments of second experiment and the encompassed specifications

Treatment	Specifications
T2.1	Diagnosis is free
T2.2	Diagnosis price is 5% of product price
T2.3	Diagnosis price is 10% of product price
T2.4	Diagnosis price is 15% of product price

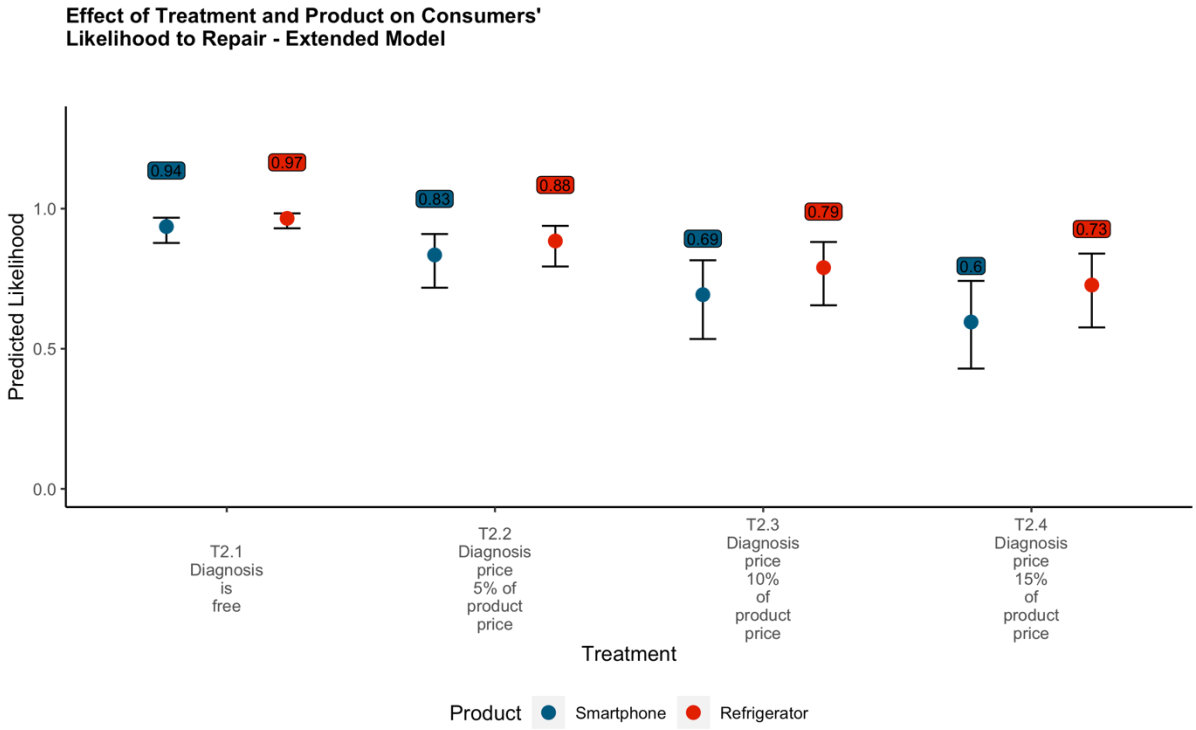
The aggregated results for all products show that the higher the diagnosis price is, the less likely participants were to commission the diagnosis. When the diagnosis was free, the predicted likelihood was 0.94; while the likelihood was 0.6 when the diagnosis price was 15% of the product price.

Figure 82 - Effect of diagnosis price on likelihood to commission the diagnosis



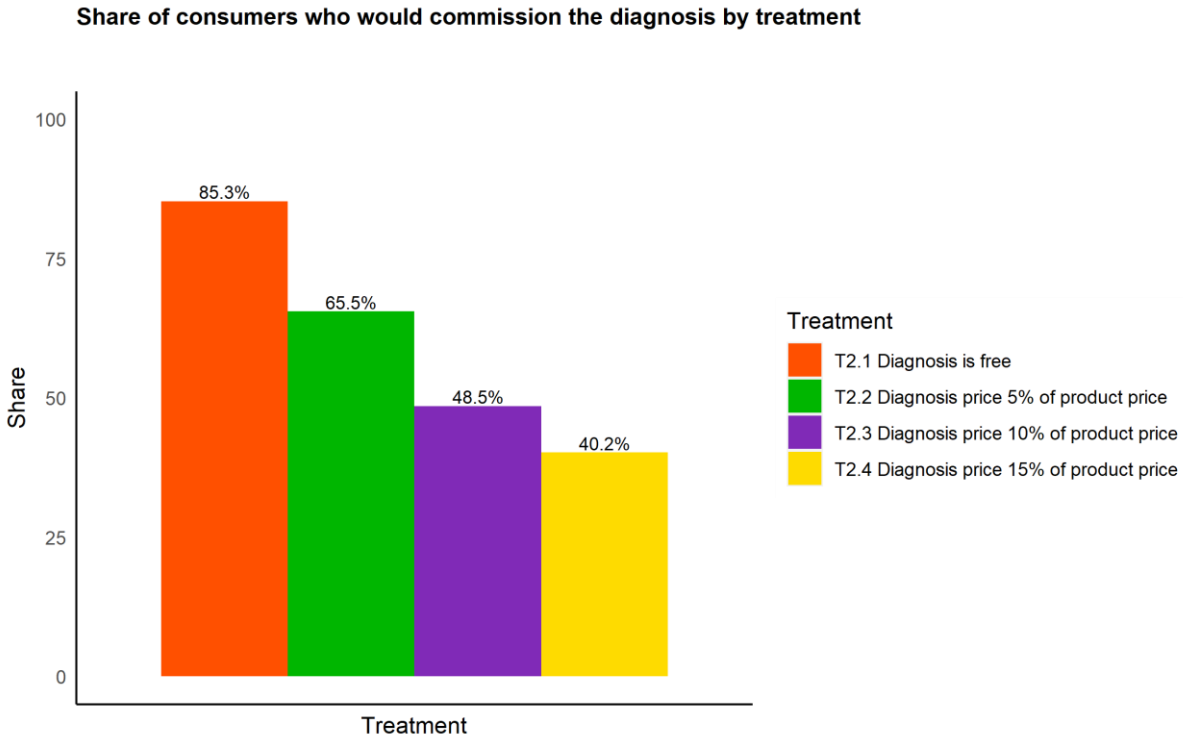
There are some differences by product. The likelihood to commission the diagnosis decreases faster in the case of the smartphone than in the case of refrigerator. With 15% diagnosis costs, consumers are considerably less likely to request a repair quote for smart phones than for refrigerators.

Figure 83 - Effect of diagnosis price on the consumers' likelihood to commission the diagnosis by product



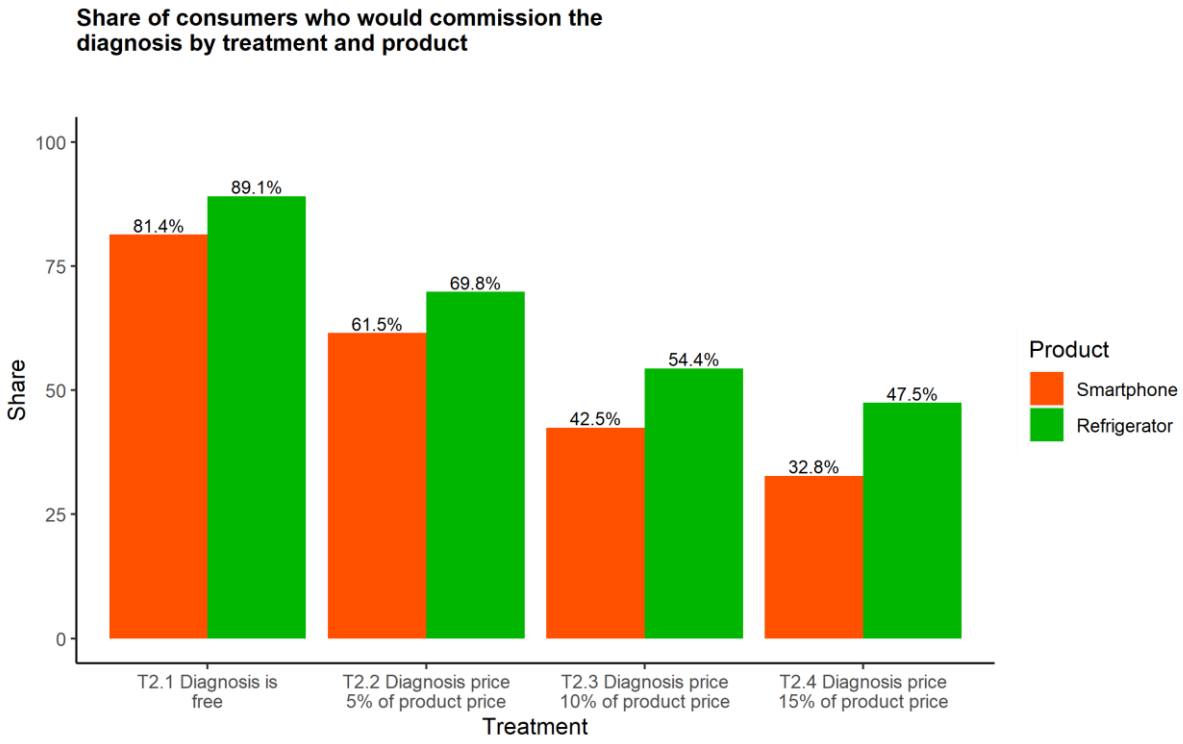
Considering the share of consumers who would commission the diagnosis under the conditions of different diagnosis prices, the results show that the share is highest when the diagnosis is free (85.3%). As the diagnosis price increases, the percentage of consumers who would commission the diagnosis decreases to 40.2%.

Figure 84 - Share of consumers who would commission the diagnosis by treatment



For both products, the share of those who would commission the diagnosis decreased as the diagnosis price of the product increased. Overall, a higher share of respondents would commission the diagnosis for the repair of the defective refrigerator compared to the smartphone. The percentage of respondents who would commission the diagnosis when the diagnosis is free (smartphone 81.4%; refrigerator 89.1%) and the diagnosis price is 5% of the product price (smartphone 61.5%; refrigerator 69.8%) is overall high.

Figure 85 - Share of consumers who would commission the diagnosis by product and treatment



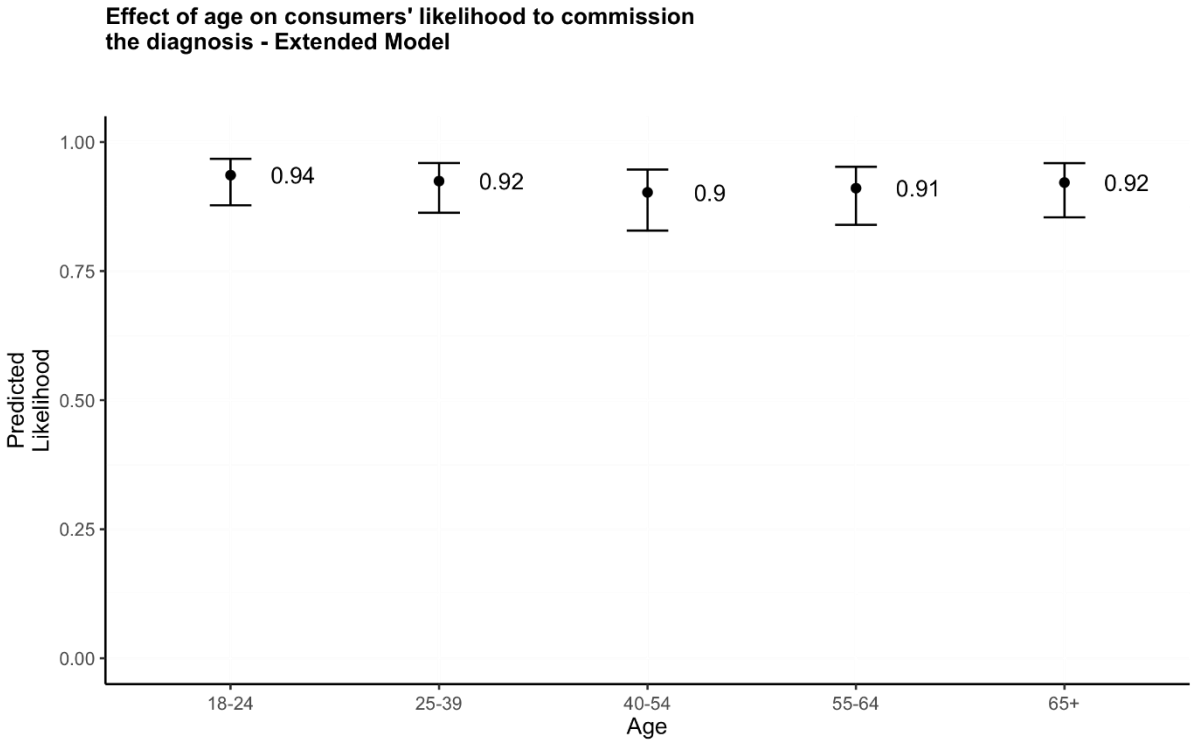
In a follow up question, participants were given the repair price, thus putting them in a situation in which they received a free repair quote. They were then asked if they would commission the repair. The proposed price for the repair was the same across all treatment groups. Those who previously said that they would not commission the repair quote, but in the follow up declare that they would commission the repair, can be considered as 'lost potential' for repairs that could be realised in in society. In the experiment, this overall share was 21% of all participants. When the diagnosis price was set at 15% of the product price, the share of those who would not initially commission the diagnosis but decide to repair after receiving a free repair quote, increased to 35% of the participants in this group.

To calculate the relative increase in the willingness to repair of consumers, we considered a scenario in which the maximum price of the diagnosis price is limited to 5% of the product value. In the experiment, the effective repair rate was 47.6%. We defined the effective repair the share of consumers that were willing to commission the diagnosis, and, after receiving the information on the repair costs, decided to commission the repair. We then considered the share of additional repairs that could be achieved when the diagnosis costs in groups T2.3 (initial price level 10%) and T2.4 (initial price level15%) were limited to 5% and extrapolated the expected effect size to the whole sample. Under these conditions, the effective repair rate increased to 53.9%, a relative increase of +13.4% in the willingness to take up repair among the experiment participants.

Sociodemographic differences

There are few sociodemographic differences. Younger participants are slightly more likely to commission the diagnosis than those belonging to older age groups.

Figure 86 - Share of consumers who would commission the diagnosis by product and treatment



2.5.3.3. Willingness to pay for used goods under the condition of aligned guarantee periods

In the third experiment, participants were exposed to a conjoint design, in which they could choose between different configurations of repair or decide not to repair, if this is their preferred option. This comparison reveals the relative importance of different factors in a repair situation where consumers decide to repair or not to repair. The collected data allows to simulate how different conditions changes will change consumers' likelihood to have defective products repaired.

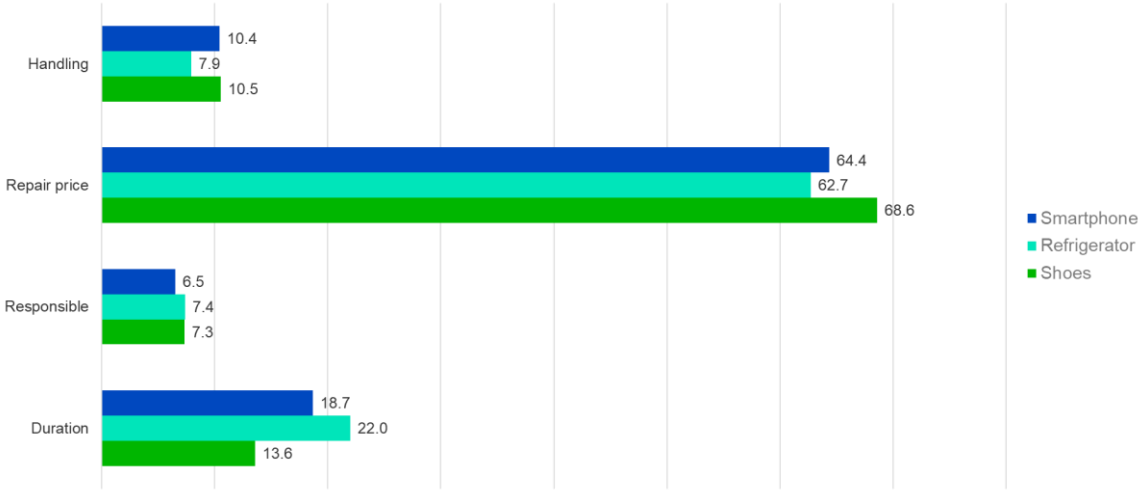
Participants were randomly assigned with equal probability to one of three groups. For each group, a different product was tested (smartphone, refrigerator, shoes). The table below summarises the factors that were explored in this experiment.

Table 24 - Treatments for third experiment and the encompassed specifications

Factor	Treatment	Specifications
Handling	Mechanic at home	Mechanic will repair product in home (only smartphone and refrigerator)
	Pick up	Product will be picked up and after repair shipped back for free
	Shipping	Consumer ships the product to repair service for free
	Bring to specific store	Consumer brings product to store (in case of vendor or producer responsibility) or repair shop (in case of third-party responsibility)
Repair price	10%	Repair price is set at 10% of product price
	20%	Repair price is set at 20% of product price
	40%	Repair price is set at 40% of product price
Responsible	Producer	Producer is responsible for repair
	Vendor	Vendor is responsible for repair
	Third party	Licensed repair provider is responsible for repair
Duration	Two weeks	Repair takes two weeks
	Four weeks	Repair takes four weeks
	Six weeks	Repair takes six weeks

The results show a strong relevance of price for consumers. The below chart summarises the average importance of factor that was revealed in the experiment.

Figure 87 - Relative importance of factors in the repair situation (all countries)



The results enable us to simulate the likelihood of consumers to repair products in different situations. In the following, we present three scenarios for each tested type of product and the associated likelihood of consumers to decide to repair under these circumstances.

Table 25 - Simulated likelihood to repair under different configurations of the repair situation

Smartphone

	Scenario 1	Scenario 2	Scenario 3
Handling	Pick up	Shipping	Bring to specific store
Repair price	10%	20%	40%
Responsible	Producer	Vendor	Third party
Duration	Two weeks	Four weeks	Six weeks
Likelihood to repair	81.7%	55.9%	26.6%

Refrigerator

	Scenario 1	Scenario 2	Scenario 3
Handling	Mechanic at home	Pick up	Pick up
Repair price	10%	20%	40%
Responsible	Third party	Third party	Vendor
Duration	Two weeks	Four weeks	Six weeks
Likelihood to repair	83.4%	53.3%	23.1%

Pair of shoes

	Scenario 1	Scenario 2	Scenario 3
Handling	Pick up	Shipping	Bring to specific store
Repair price	10%	20%	40%
Responsible	Producer	Vendor	Third party
Duration	Two weeks	Four weeks	Six weeks
Likelihood to repair	84.3%	59.6%	26.6%

In order to calculate the increase in the willingness to take up under the conditions of a 'right to repair', we made use of the data from the previous behavioural experiment that tested the likelihood of consumers to commission a repair under conditions when a 'right to repair' is absent.[35] The average likelihood to repair under these baseline conditions was then compared to a realistic constellation simulated on the basis of the 'right to repair' experiment. The conditions that were used here were a price of 20% of the product value, a repair duration of two weeks, shipping of the defective product (refrigerator: mechanic at home), and the responsibility assigned to the producer of the product.

Based on these assumptions, the average increase in the likelihood to have the product repaired increase for smartphones from 45.3% to 63.7% (relative increase of +40.4%), for a pair of shoes from 48.6% to 64.3% (relative increase of +32.2%), and for refrigerators from 53.5% to 65.0% (relative increase of +21.6%). Considering the average off all three products, a 'right to repair' designed in the described way increased the likelihood of consumers to choose a repair for their defective product by +31.1%, from 49.1% to 64.3%, in the experimental situation.

[35] This experiment tested the likelihood of consumers to have a defective product repaired outside of the legal guarantee period. Under the conditions that the product was 2.5 and 4.5 years old and the defect was not covered by the legal guarantee (T4.1), the estimated average likelihood to repair was 49.1% among consumers.

2.5.4. Detailed information on results

Likelihood to Repair (EXA1)		
Mixed-effects linear model		
	Baseline	**Extended (Replace)**
Gender: Female		0.027 (0.074)
Age: 25-39		-0.292 (0.152)
Age: 40-54		-0.383* (0.154)
Age: 55-64		-0.333* (0.169)
Age: 65+		-0.165 (0.194)
Education: Medium		0.058 (0.123)
Education: High		0.071 (0.127)
Household Income: Medium		-0.0002 (0.099)
Household Income: High		0.285 (0.150)
Occupation: Manager		0.040 (0.164)
Occupation: Other White Collar		-0.175 (0.135)
Occupation: Manual Worker		0.212 (0.161)
Occupation: House Person		-0.542** (0.210)
Occupation: Unemployed		-0.300 (0.216)
Occupation: Retired		-0.200 (0.167)
Occupation: Student		-0.207 (0.229)
Affinity to Repair		0.222*** (0.037)
Sustainability Engagement		0.171*** (0.036)
Treatment: 1.2	-1.186*** (0.169)	-1.234*** (0.173)
Treatment: 1.3	-0.316 (0.171)	-0.367* (0.174)
Treatment: 1.4	-0.643*** (0.168)	-0.643*** (0.172)
Product: Pair of Shoes	0.004 (0.171)	-0.037 (0.174)
Product: Refrigerator	0.007 (0.171)	-0.017 (0.175)
Product Age: 4.5 Years	-0.275*** (0.070)	-0.287*** (0.071)
Country: Germany	0.054 (0.151)	0.102 (0.155)
Country: France	0.174 (0.153)	0.256 (0.158)
Country: Netherlands	-0.259 (0.157)	-0.235 (0.162)
Country: Spain	0.200 (0.150)	0.310* (0.157)
Country: Italy	0.350* (0.154)	0.465** (0.160)
Country: Greece	0.418** (0.149)	0.580*** (0.163)
Country: Poland	0.682*** (0.158)	0.759*** (0.166)
Country: Romania	0.845*** (0.154)	0.974***(0.167)
Country: Hungary	0.724*** (0.153)	0.809***(0.166)
Product: Pair of Shoes, Treatment: 1.2	0.711** (0.239)	0.715** (0.244)

Product: Pair of Shoes, Treatment: 1.3	0.076 (0.242)	0.130 (0.246)
Product: Pair of Shoes, Treatment: 1.4	0.685** (0.240)	0.711** (0.245)
Product: Refrigerator, Treatment: 1.2	0.487* (0.238)	0.520* (0.243)
Product: Refrigerator, Treatment: 1.3	0.483* (0.245)	0.525* (0.249)
Product: Refrigerator, Treatment: 1.4	0.728** (0.243)	0.747** (0.247)
Constant	0.459** (0.161)	0.701* (0.281)
N	3649	3649
Log Likelihood	-2352.075	-2300.472
AIC	4748.150	4680.944
BIC		

Likelihood to commission the diagnosis (EXB1)

Mixed-effects linear model

	Baseline	**Extended (Replace)**
Gender: Female		-0.040 (0.095)
Age: 25-39		-0.177 (0.191)
Age: 40-54		-0.455* (0.192)
Age: 55-64		-0.359 (0.211)
Age: 65+		-0.217 (0.240)
Education: Medium		0.056 (0.161)
Education: High		0.092 (0.166)
Household Income: Medium		0.099 (0.125)
Household Income: High		-0.007 (0.189)
Occupation: Manager		-0.358 (0.210)
Occupation: Other White Collar		-0.347* (0.172)
Occupation: Manual Worker		-0.210 (0.208)
Occupation: House Person		-0.485 (0.266)
Occupation: Unemployed		-0.369 (0.274)
Occupation: Retired		-0.515* (0.211)
Occupation: Student		-0.754* (0.293)
Affinity to Repair		0.223*** (0.048)
Sustainability Engagement		0.165*** (0.047)
Treatment: 2.2	-1.033*** (0.189)	-1.062*** (0.192)
Treatment: 2.3	-1.823*** (0.190)	-1.868*** (0.193)
Treatment: 2.4	-2.247*** (0.195)	-2.296*** (0.198)
Product: Refrigerator	0.623** (0.235)	0.641** (0.237)

Product Age: 4.5 Years	-0.176 (0.090)	-0.190* (0.092)
Country: Germany	-0.861*** (0.204)	-0.862*** (0.209)
Country: France	-0.615** (0.204)	-0.555** (0.210)
Country: Netherlands	-0.557* (0.218)	-0.554* (0.223)
Country: Spain	-0.826*** (0.205)	-0.765*** (0.213)
Country: Italy	-0.413* (0.205)	-0.384 (0.212)
Country: Greece	-0.459* (0.202)	-0.433* (0.216)
Country: Poland	-0.717*** (0.209)	-0.711** (0.219)
Country: Romania	-0.060 (0.207)	-0.026 (0.223)
Country: Hungary	-0.959*** (0.204)	-0.953*** (0.217)
Product: Refrigerator, Treatment: 2.2	-0.256 (0.292)	-0.224 (0.296)
Product: Refrigerator, Treatment: 2.3	-0.126 (0.288)	-0.133 (0.292)
Product: Refrigerator, Treatment: 2.4	0.008 (0.291)	-0.046 (0.294)
Constant	2.143*** (0.216)	2.682*** (0.363)
N	2434	2434
Log Likelihood	-1432.739	-1403.580
AIC	2901.478	2879.161

The full version of the experiment can be found in the Excel file attached to the report.

2.6. Business survey

This chapter presents the method used for designing the study's business survey. The main results are also presented.

2.6.1. Method

In addition to the mystery shopping and stakeholder interviews, we undertook a survey of businesses. The businesses targeted by the study were falling into either of these categories: manufacturers, retailers, or repairers of either of the products concerned by the primary data collection. Only businesses producing, selling, or repairing cars, laptops, clothing, mobile phones, shoes, wooden furniture, televisions or refrigerators were included in the survey.

The survey was undertaken online and was translated into the languages of the 12 countries covered by this study.

The analysis of survey results also includes the analysis of partial responses i.e., responses of respondents who dropped out during the survey provided they answered at least some substantive questions. Therefore, the number of respondents varies depending on the question. Furthermore, many questions were filtered and only asked to certain type of business (i.e., only repairers or only retailers) this again means that the number of respondents varies per question.

Due to the survey length the questionnaire was divided into two parts. On the completion of the first part respondents were asked whether they wanted to proceed with some additional optional questions.

Overall:

- 88 respondents fully completed the first part of the survey
    - 124 respondents completed a substantial part of the survey
    - 160 respondents completed at least the initial questions about the extent to which they offer repair or replacement for defect products
- Only 32 of these respondents pursued with additional questions

The respondents were split in a balanced manner between micro-enterprises (30% of the sample), small businesses (35% of the sample), medium sized companies (18%) and large companies (17%).

2.6.2. Questionnaire

Part I [DISPLAY TO ALL]

Company information

Company information

[ALL]

1. Which of these applies to your company?
[multiple answers possible]

1	Manufacturer
2	Retailer of new goods
3	Retailer of second-hand goods
4	Retailer of refurbished goods
5	Authorised repairer
6	Independent repairer
7	Refurbisher

[ALL]

2. Which of the following products do you manufacture / sell / repair?
[multiple answers possible]

1	Mobile phones/Smartphones
2	Televisions
3	Refrigerators
4	Laptops
5	Clothing
6	Shoes/footwear
7	Cars
8	Wooden furniture

IF NONE SELECTED -> TERMINATE

[ALL]

3. What is the size of your company?

1	Micro (<10 employees)
2	Small (< 50 employees)
3	Medium (< 250 employees)
4	Large company (> 250 employees)

[ALL]

4. In what country is your company headquartered?
LIST OF EU27 COUNTRIES
Outside the EU

[ALL]

5. Where do you carry out your activity?
[multiple answers possible]

1	In the country where the business is headquartered
2	In several EU Member States
3	All EU countries
4	Outside the EU

Market practices

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]

6. Do you offer repair services?

1	Yes
2	No

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY ONLY IF "YES" IS SELECTED IN Q6]

7. How are repair services carried out?
[multiple answers possible]

1	In-house
2	By the manufacturer [only displayed to retailer]
3	Authorised repairer
4	Independent repairer
5	Self-repair using our manual (by the customer)
6	Self-repair using our tools (by the customer)
7	Other [specify]

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY ONLY IF "YES" IS SELECTED IN Q6]

8. Where do the repair services take place?
[multiple answers possible]

1	In the country where the product was sold
2	In another EU country [specify]
3	In a non-EU country [specify]

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY ONLY IF "YES" IS SELECTED IN Q6]

9. If you offer a commercial guarantee, how long does it last?

1	Insert number of months	_____ *months*

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

10. What number of products from the following categories got replaced, repaired or consumers were provided a refund last year under legal guarantee (we do not expect you to know the exact number, so please provide an estimate)?
[please insert number or leave the cell empty if you don't know]

		Replaced	Repaired	Refunded
1	**Mobile phones/Smartphones**	*Number*	*Number*	*Number*
2	**Televisions**	*Number*	*Number*	*Number*
3	**Refrigerators**	*Number*	*Number*	*Number*
4	**Laptops**	*Number*	*Number*	*Number*
5	**Clothing**	*Number*	*Number*	*Number*
6	**Shoes/footwear**	*Number*	*Number*	*Number*
7	**Cars**	*Number*	*Number*	*Number*
8	**Wooden furniture**	*Number*	*Number*	*Number*

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]

11. What do you do when consumers have a defective product that is outside the legal or commercial guarantee?
[multiple answers possible]

1	We offer our repair services (paid by consumers)
2	We redirect them to third party services (paid by consumers)
3	We don't do anything
4	Other [specify]

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

12. For each of the following products, please select the frequency to which you refuse to repair a product.

	Products	Frequency to which product repair is refused
1	**Mobile phones/Smartphones**	**1.** Very often **2.** Often **3.** Sometimes **4.** Rarely **5.** Never

	Products	Frequency to which product repair is refused
2	**Televisions**	**6.** Very often **7.** Often **8.** Sometimes **9.** Rarely **10.** Never
3	**Refrigerators**	**11.** Very often **12.** Often **13.** Sometimes **14.** Rarely **15.** Never
4	**Laptops**	**16.** Very often **17.** Often **18.** Sometimes **19.** Rarely **20.** Never
5	**Clothing**	**21.** Very often **22.** Often **23.** Sometimes **24.** Rarely **25.** Never
6	**Shoes/footwear**	**26.** Very often **27.** Often **28.** Sometimes **29.** Rarely **30.** Never
7	**Cars**	**31.** Very often **32.** Often **33.** Sometimes **34.** Rarely **35.** Never
8	**Wooden furniture**	**36.** Very often **37.** Often **38.** Sometimes **39.** Rarely **40.** Never

[DISPLAY ONLY IF ANSWERS 1 IS SELECTED IN Q1]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

13. What is the average designed lifetime of the products you manufacture?

Please note that the consumption lifetime can be indicated on the basis of the consumption by one single consumer or by multiple subsequent users (i.e. taking into account second-hand use), where relevant.

		Average designed lifetime
1	Mobile phones/Smartphones	*Number of years*
2	Televisions	*Number of years*
3	Refrigerators	*Number of years*
4	Laptops	*Number of years*
5	Clothing	*Number of years*
6	Shoes/footwear	*Number of years*
7	Cars	*Number of years*
8	Wooden furniture	*Number of years*

[DISPLAY ONLY IF ANSWERS 1 IS SELECTED IN Q1]

14. Which of the following features do you currently consider as being the most important when designing a product? Which of the features do you think will become most relevant in the next decade? Please select maximum four features that are most important.

Currently important		Will become important in the next 10 years	
Features	***Tick max. 4***	***Features***	***Tick max. 4***
Supply chain processes		Supply chain processes	
Production costs		Production costs	
Durability		Durability	
Repairability		Repairability	
Recyclability		Recyclability	

Reusability		Reusability	
Source/ availability of materials		Source/ availability of materials	
Manufacturing location		Manufacturing location	
Consumer demand (volume)		Consumer demand (volume)	
Consumer preferences in terms of sustainability		Consumer preferences in terms of sustainability	
Other (specify)		Other (specify)	

Repair market

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]

15. Do you have any contractual agreement with manufacturers / retailers relating to handling defective products? [multiple answers possible]

1	Yes, with manufacturers
2	Yes, with retailers
3	No, we deal with consumers directly
4	Other (specify)

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]

16. Who are your clients? [multiple answers possible]

1	Regular consumers
2	Retailers
3	Manufacturers
4	Other (specify)

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1 AND IF ANSWER 1 IS SELECTED IN Q6]

17. Do you carry out a product defect diagnosis before the repair?

1	Yes
2	No

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

18. For the following products, how do you access products for repair/refurbishment? [Multiple answers possible]

		Repair	Refurbishment
1	**Mobile phones/Smartphones**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*
2	**Televisions**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*
3	**Refrigerators**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*
4	**Laptops**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*

		Repair	Refurbishment
5	**Clothing**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*
6	**Shoes/footwear**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*
7	**Cars**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*
8	**Wooden furniture**	*Consumers deliver it* *Pick up service from consumer place* *Repair at consumer place* *Other (specify)*	*Consumers deliver it* *Pick up service from consumer place* *Trade-in / Buy-in option* *Pick up from municipal waste collection* *Container / Boxes in public spaces* *Door-to-Door collection* *Other (specify)*

[ALL]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

19. What % of products from the following categories that were brought got repaired last year (we don't expect you to know the exact number, so please provide an estimate)?

		Were brought	Got repaired
1	**Mobile phones/Smartphones**	*Number*	*%*
2	**Televisions**	*Number*	*%*
3	**Refrigerators**	*Number*	*%*
4	**Laptops**	*Number*	*%*
5	**Clothing**	*Number*	*%*
6	**Shoes/footwear**	*Number*	*%*
7	**Cars**	*Number*	*%*
8	**Wooden furniture**	*Number*	*%*

[ALL]

20. What has been the impact of consumers' purchasing / replacement choices on the repair market? [multiple answers possible]

1	The number of repair companies increased
2	The demand for repair services increased
3	The number of repair companies decreased
4	The demand for repair services decreased
5	There is no impact
6	Other (specify)

[ALL]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

21. What are the most recurrent defects that you observe when consumers ask for repair? [multiple answers possible]

	Products	Defects (pre-defined options)	Other (comments)
1	**Mobile phones/Smartphones**	*1. Broken screen* *2. Bad battery life* *3. Overheating* *4. Slow phone* *5. App crashes / freezes* *6. Damaged charging parts* *7. Viruses or malware* *8. Other (specify)*	*Open answer for other defects*

	Products	Defects (pre-defined options)	Other (comments)
2	**Televisions**	*9. No image* *10. Bowed picture* *11. Video not matching audio* *12. Flat screen has lines or is cracked* *13. Hearing an echo* *14. Other (specify)*	*Open answer for other defects*
3	**Refrigerators**	*15. Water leaking* *16. Freezer isn't cold enough* *17. Unit is cycling too often* *18. Compartments are warming up* *19. Sheet of ice on the freezer floor* *20. Food is freezing* *21. Other (specify)*	*Open answer for other defects*
4	**Laptops**	*22. Overheating* *23. Battery dying quickly* *24. Keyboard is not functioning* *25. System crash* *26. Viruses or malware* *27. Other (specify)*	*Open answer for other defects*
5	**Clothing**	*28. Ripped fabric* *29. Stains or other blemishes* *30. Accessories are not functional (e.g. zippers, buttons)* *31. Other (specify)*	*Open answer for other defects*
6	**Shoes/footwear**	*32. Excess glue, wax or oil* *33. Degumming or weak cementing* *34. Abrasion marks* *35. Asymmetry* *36. Other (specify)*	*Open answer for other defects*
7	**Cars**	*37. Flat tires* *38. Brakes squeaking or grinding* *39. Alternator failure* *40. Broken starter motor* *41. Steering wheel shaking* *42. Failed emission test* *43. Overheating* *44. Other (specify)*	*Open answer for other defects*
8	**Wooden furniture**	*45. Wobbly furniture* *46. Defective drawer corners* *47. Uneven legs* *48. Scratches* *49. Discoloration* *50. Screws coming loose* *51. Other (specify)*	*Open answer for other defects*

[ALL]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

22. What is the average cost and length of repair for the most recurring defects identified in the previous question?

[please select option and complete or leave the cell empty if you don't know]

	Products	Average cost of repair	% of repair costs per category of cost	Length of repair (in days)
1	**Mobile phones/Smartphones**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*
2	**Televisions**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*
3	**Refrigerators**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*
4	**Laptops**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*
5	**Clothing**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*

	Products	Average cost of repair	% of repair costs per category of cost	Length of repair (in days)
6	**Shoes/footwear**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*
7	**Cars**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*
8	**Wooden furniture**	*EUR*	○ *Diagnosis [%]* ○ *Transport [%]* ○ *Personnel [%]* ○ *Spare parts [%]* ○ *Other [%]*	*Number of days*

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

23. Please select the main causes for irreparability and the frequency to which a product cannot be repaired due to these causes.
[please select option and complete or leave the cell empty if you don't know]

	Products	What are the main causes of irreparability? *(multiple answers possible)*	Other (comments)	Percentage of cases when goods irreparable due to these causes
1	**Mobile phones/Smartphones**	○ *Irreparability by design* ○ *Lack of documentation* ○ *Lack of tools* ○ *Lack of spare parts* ○ *Other causes* ○ *None*	*Open answer for other causes*	○ *Less than 10%* ○ *Between 10% and 30%* ○ *Between 30% and 50%* ○ *Between 50% and 70%* ○ *More than 70%*
2	**Televisions**	○ *Irreparability by design* ○ *Lack of documentation* ○ *Lack of tools* ○ *Lack of spare parts* ○ *Other causes* ○ *None*	*Open answer for other causes*	○ *Less than 10%* ○ *Between 10% and 30%* ○ *Between 30% and 50%* ○ *Between 50% and 70%* ○ *More than 70%*
3	**Refrigerators**	○ *Irreparability by design* ○ *Lack of documentation* ○ *Lack of tools* ○ *Lack of spare parts* ○ *Other causes* ○ *None*	*Open answer for other causes*	○ *Less than 10%* ○ *Between 10% and 30%* ○ *Between 30% and 50%* ○ *Between 50% and 70%* ○ *More than 70%*
4	**Laptops**	○ *Irreparability by design* ○ *Lack of documentation* ○ *Lack of tools* ○ *Lack of spare parts* ○ *Other causes* ○ *None*	*Open answer for other causes*	○ *Less than 10%* ○ *Between 10% and 30%* ○ *Between 30% and 50%* ○ *Between 50% and 70%* ○ *More than 70%*
5	**Clothing**	○ *Irreparability by design* ○ *Lack of documentation* ○ *Lack of tools* ○ *Lack of spare parts* ○ *Other causes* ○ *None*	*Open answer for other causes*	○ *Less than 10%* ○ *Between 10% and 30%* ○ *Between 30% and 50%* ○ *Between 50% and 70%* ○ *More than 70%*
6	**Shoes/footwear**	○ *Irreparability by design* ○ *Lack of documentation* ○ *Lack of tools* ○ *Lack of spare parts* ○ *Other causes* ○ *None*	*Open answer for other causes*	○ *Less than 10%* ○ *Between 10% and 30%* ○ *Between 30% and 50%* ○ *Between 50% and 70%* ○ *More than 70%*

	Products	What are the main causes of irreparability? *(multiple answers possible)*	Other (comments)	Percentage of cases when goods irreparable due to these causes
7	**Cars**	o *Irreparability by design* o *Lack of documentation* o *Lack of tools* o *Lack of spare parts* o *Other causes* o *None*	*Open answer for other causes*	o *Less than 10%* o *Between 10% and 30%* o *Between 30% and 50%* o *Between 50% and 70%* o *More than 70%*
8	**Wooden furniture**	o *Irreparability by design* o *Lack of documentation* o *Lack of tools* o *Lack of spare parts* o *Other causes* o *None*	*Open answer for other causes*	o *Less than 10%* o *Between 10% and 30%* o *Between 30% and 50%* o *Between 50% and 70%* o *More than 70%*

Measures to reduce the premature disposal of goods

When consumers buy goods, which turn out to be defective at the time of delivery, they can rely on the legal guarantee and ask the seller for a free remedy (repair or replacement). The legal guarantee means that, for at least 2 years from delivery, sellers are liable for defects that existed at the time of delivery. Member States can establish a longer period than 2 years if they wish.

In addition to the legal guarantee, consumers can also rely on a commercial guarantee in certain situations. The producer or the seller can decide to provide such commercial guarantee and the conditions depend on the concrete terms of the guarantee statement. The current legal framework for the legal and commercial guarantee is regulated by the Directive on the Sale of Goods 2019/771 ("SGD").

The Commission is considering several measures focused on promoting sustainable use of goods, e.g., through incentivising repair within the legal guarantee period and promoting the use of second-hand goods, that could lead to a possible amendment of the SGD. These measures are not mutually exclusive. We would like to hear your views on how these measures could potentially address the issue of premature disposal and how these could impact your business.

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]

24. What is the potential of the following measures in addressing the issue of premature disposal of goods and lead to more repairs under the legal guarantee?
Note that the measures are not mutually exclusive. [one answer per measure]

	Very high potential	High potential	Low potential	Very low potential	Don't know / not relevant for my business
The consumer would be only able to ask to replace the product within the legal guarantee period, if repair is not possible or would impose disproportionate costs on the seller	o	o	o	o	o
Determining the consumer's remedy by the seller when the repair cost is less than or equal to the replacement cost	o	o	o	o	o
The period of the legal guarantee would start anew, if the consumer chooses to repair the product instead of replacing it	o	o	o	o	o

	Very high potential	High potential	Low potential	Very low potential	Don't know / not relevant for my business
Allowing the seller to replace a defective good with a refurbished one within the legal guarantee period.	o	o	o	o	o
Extending the period during which the product is presumed to be defective at delivery (current period is 1 year)	o	o	o	o	o

[ALL]

25. What is the potential of the following measures in addressing the issue of premature disposal of goods and lead to more repairs under the legal guarantee?
Note that the measures are not mutually exclusive. [one answer per measure]

	Very high potential	High potential	Low potential	Very low potential	Don't know / not relevant for my business
Extending the duration of the legal guarantee period beyond the current minimum two years for new goods	o	o	o	o	o
Having the same legal guarantee period for new and second-hand products	o	o	o	o	o
Having the same legal guarantee period for new and refurbished second-hand goods	o	o	o	o	o

[ALL]

26. What is the potential of the following measures in addressing the issue of premature disposal of goods and lead to more repairs outside (or irrespective of) the legal guarantee?
Note that the measures are not mutually exclusive. [one answer per measure]

	Very high potential	High potential	Low potential	Very low potential	Don't know / not relevant for my business
A new consumer right to ask the producer or seller to have the defective product repaired for a reasonable fee for a determined period of time beyond the legal guarantee.	o	o	o	o	o
Introduction of consumer right to claim compensation from the manufacturer whose products do not comply with the reparability requirements (availability of spare parts and repair manuals, disassembly possibility etc.) for the given product category	o	o	o	o	o

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]

27. What would be the economic impacts of the measure (1) on your business?

	Measure: The consumer would be only able to ask to replace the product within the legal guarantee period, if repair is not possible or would impose disproportionate costs on your business
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*

	Measure: The consumer would be only able to ask to replace the product within the legal guarantee period, if repair is not possible or would impose disproportionate costs on your business
	Increase by […] %*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]

28. What would be the economic impacts of the measure (2) on your business?

	Measure: Determining the consumer's remedy by the seller when the repair cost is less than or equal to the replacement cost
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

[DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]

29. What would be the economic impacts of the measure (3) on your business?

	Measure: The period of the legal guarantee would start anew, if the consumer chooses to repair the product instead of replacing it
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*

	Measure: The period of the legal guarantee would start anew, if the consumer chooses to repair the product instead of replacing it
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Provision of commercial guarantees	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

30. [ALL]
What would be the economic impacts of the measure (4) on your business?

	Measure: Extending the duration of the legal guarantee period beyond the current minimum two years for new goods
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Provision of commercial guarantees	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

31. [ALL]
What would be the economic impacts of the measure (5) on your business?

	Measure: Having the same legal guarantee period for new and second-hand products
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*

	Measure: Having the same legal guarantee period for new and second-hand products
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Provision of commercial guarantees	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

32. [ALL]
What would be the economic impacts of the measure (6) on your business?

	Measure: Having the same legal guarantee period for new and refurbished second-hand goods
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Provision of commercial guarantees	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

33. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
What would be the economic impacts of the measure (7) on your business?

	Measure: Allowing the seller to replace a defective good with a refurbished one within the legal guarantee period
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

34. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
What would be the economic impacts of the measure (8) on your business?

	Measure: Extending the period during which the product is presumed to be defective at delivery (current period is 1 year)
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
	Increase by […] %*
Provision of commercial guarantees	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

35. [ALL]
What would be the economic impacts of the measure (9) on your business?

	Measure: A new consumer right to ask the producer or seller to have the defective product repaired for a reasonable fee for a determined period of time beyond the legal guarantee
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business* *Increase* by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business* *Increase* by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business* *Increase* by […] %*
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

36. [ALL]
What would be the economic impacts of the measure (10) on your business?

	Measure: Introduction of consumer right to claim compensation from the manufacturer whose products do not comply with the reparability requirements (availability of spare parts and repair manuals, disassembly possibility etc.) for the given product category
Administrative costs (for offsetting)	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business* *Increase* by […] %*
Adjustment costs	○ *Increase** ○ *Decrease* ○ *No impact* ○ *Not relevant for my business* *Increase* by […] %*
Increase in sale of new goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in sales of second-and / refurbished goods	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Increase in prices for consumers	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business* *Increase* by […] %*

	Measure: Introduction of consumer right to claim compensation from the manufacturer whose products do not comply with the reparability requirements (availability of spare parts and repair manuals, disassembly possibility etc.) for the given product category
Increase of revenue for repair services	○ *Increase* ○ *Decrease* ○ *No impact* ○ *Not relevant for my business*
Other (specify)	*Text*

37. [ALL]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]
In case of introduction of a **horizontal right to repair (Measure 9)** for consumers which allows the latter to ask the producer or seller to have the defective product repaired beyond the legal guarantee for a fee, what would be:

		The cost of your business to offer such repair for	**The expected increase in the initial purchase price**	**Initial compliance cost to adapt to the new requirement (estimate)**
1	**Mobile phones/Smartphones**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*
2	**Televisions**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*
3	**Refrigerators**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*
4	**Laptops**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*
5	**Clothing**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*
6	**Shoes/footwear**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*

		The cost of your business to offer such repair for	The expected increase in the initial purchase price	Initial compliance cost to adapt to the new requirement (estimate)
7	**Cars**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*
8	**Wooden furniture**	▪ 1 year [insert cost] ▪ 2 years [insert cost] ▪ 3 years [insert cost] ▪ 4 or more years [insert cost]	*insert %*	*EUR*

38. [ALL]
In case of introduction of a horizontal right to repair for consumers, what would be the impacted operating costs? [multiple answers possible]

1	Rent and utilities
2	Wages and salaries
3	Administrative fees
4	Overhead costs
5	None of the above
6	Other (specify)

39. [ALL]
[PIPE IN THE RESPONDENT'S ANSWERS FROM QUESTION 21]
[DISPLAY ONLY THE ANSWER OPTIONS AS SELECTED IN Q2]

In case of introduction of a horizontal right to repair for consumers which allows the latter to ask the producer or seller to have the defective product repaired beyond the legal guarantee, what would be the average costs for:

[Think of the most recurring costs irrespective of how they would be covered, as answered in question 210]
[When estimating costs, think of the most recurring defects per product]

		Spare parts	Labour costs	Operating costs (as selected in the previous question)
1	**Mobile phones/Smartphones**	*EUR*	*EUR*	*EUR*
2	**Televisions**	*EUR*	*EUR*	*EUR*
3	**Refrigerators**	*EUR*	*EUR*	*EUR*
4	**Laptops**	*EUR*	*EUR*	*EUR*
5	**Clothing**	*EUR*	*EUR*	*EUR*
6	**Shoes/footwear**	*EUR*	*EUR*	*EUR*
7	**Cars**	*EUR*	*EUR*	*EUR*
8	**Wooden furniture**	*EUR*	*EUR*	*EUR*

40. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 2-4 ARE SELECTED IN Q1]
If you were obliged to repair defective goods under this new right to repair, how would you organise the repair process:
[multiple answers possible]

1	I would use the producer's authorised repair services to carry out such repairs
2	I would invest in in-house repair services
3	I would conclude agreements with independent repairers
4	I don't know
5	Other (specify)

41. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
If such a new right to repair existed, how would this affect you offering a commercial guarantee of your products:

1	I would no longer offer commercial guarantee
2	I would extend the duration of the commercial guarantee
3	I would reduce the duration of the commercial guarantee
4	Other (specify)

42. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 2-4 ARE SELECTED IN Q1]
What would be the opportunities of imposing the right to repair on your business?
[multiple answers possible]

1	Reduced product waste
2	Opportunities for developing a new business line (repair)
3	Development of new business models
4	Reduced requests of product replacement
5	Cost savings due to less refunds
6	Other (specify)

43. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 2-4 ARE SELECTED IN Q1]
What would be the challenges of imposing the right to repair on your business?
[multiple answers possible]

1	Drop in sales for new products
2	Need to invest in an in-house repair department
3	High costs when using third party repair shops compared to the cost of replacement
4	Conflicts between us and producers / repair shops when it comes to division of costs
5	Other (specify)

44. [DISPLAY ONLY IF ANSWERS 1 IS SELECTED IN Q1]
What would be the opportunities of imposing the right to repair on your business?
[multiple answers possible]

1	Reduced product waste
2	Production cost savings
3	Opportunities for developing a new business line (repair)
4	Development of new business models
5	Reduced requests of product replacement
6	Cost savings due to less refunds
7	Other (specify)

45. [DISPLAY ONLY IF ANSWERS 1 IS SELECTED IN Q1]
What would be the challenges of imposing the right to repair on your business?
[multiple answers possible]

1	Drop in sales for new products
2	Need to invest in an in-house repair department
3	High costs when using third party repair shops compared to the cost of replacement
4	Conflicts between us and sellers / repair shops when it comes to division of costs
5	Other (specify)

46. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
What would be the opportunities of imposing the right to repair on your business?
[multiple answers possible]

1	Reduced product waste
2	Opportunities for expanding our offer
3	Development of new business models
4	Increase in demand for repair
5	Other (specify)

47. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
What would be the challenges of imposing the right to repair on your business?
[multiple answers possible]

1	Need to invest to develop our services (e.g. covering more products)
2	Finding staff

1	Need to invest to develop our services (e.g. covering more products)
3	Conflicts between us and producers / sellers when it comes to division of costs
4	Other (specify)

Conclusions

48. [ALL]
Are there any other aspects that you would like to cover and that have not been covered in this questionnaire?

1	Yes (specify)
2	No

- Yes (specify)
- No

49. [ALL]
Are you interested in a follow-up interview on the topic?

1	**Yes**	*Insert email address*
2	**No**	

Part II [DISPLAY ONLY IF COMPANIES OPT IN FOR ADDITIONAL QUESTIONS]

50. [ALL]

Q: Would you like to answer some additional questions on the topic? Your answers will provide additional evidence to our research.

1	Yes
2	No

[IF NO -> TERMINATE]

[IF YES -> DISPLAY NEXT QUESTIONS]

51. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
Do you sell your products to businesses?

1	Yes
2	No

52. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY ONLY IF "YES" TO Q1 PART II]
What is the % of sales to businesses of total sales?

1	% of sales to businesses of total sales	_____ %
2	Volume of sales	_____ *number per year*

53. [ALL]
How often do you replace your equipment?

	Replacement frequency
IT	• *Every year* • *Every 2 years* • *Every 3-5-years* • *Less often than once every 5 years* • *Never*

	Replacement frequency
Furniture	***1.*** *Every year* ***2.*** *Every 2 years* ***3.*** *Every 3-5-years* ***4.*** *Less often than once every 5 years* **5.** *Never*
Machinery	***6.*** *Every year* ***7.*** *Every 2 years* ***8.*** *Every 3-5-years* ***9.*** *Less often than once every 5 years* **10.** *Never*
Vehicles	***11.*** *Every year* ***12.*** *Every 2 years* ***13.*** *Every 3-5-years* ***14.*** *Less often than once every 5 years* **15.** *Never*
Tools	***16.*** *Every year* ***17.*** *Every 2 years* ***18.*** *Every 3-5-years* ***19.*** *Less often than once every 5 years* **20.** *Never*

54. [ALL]

Do you have arrangements in place to carry out repairs of broken devices?

	Arrangements in place to carry out repairs for:
IT	○ *Yes* ○ *No*
Furniture	○ *Yes* ○ *No*
Machinery	○ *Yes* ○ *No*
Vehicles	○ *Yes* ○ *No*
Tools	○ *Yes* ○ *No*

55. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 2-4 ARE SELECTED IN Q1]
What would incentivise you to offer more product repair instead of replacement of a defect product within the legal guarantee period?
[multiple answers possible]

1	Better availability of repair services in my country
2	Financial support to conduct repairs in-house
3	Consumer demand for repair
4	Wider range of repairable products
5	Availability of product spare parts
6	Partnerships with authorised / independent repairers
7	Other [specify]

56. [DISPLAY ONLY IF ANSWERS 1 IS SELECTED IN Q1]
What would incentivise you to offer more product repair instead of replacement within the legal guarantee period? [multiple answers possible]

1	Consumer demand for repair
2	Repair services offered by my competitors
3	Competition from companies active in the refurbishment industry
4	Other [specify]

57. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
What would incentivise you to offer repair outside the legal guarantee period?
[multiple answers possible]

1	Better availability of repair services in my country
2	Financial support to conduct repair in-house
3	Consumer demand for repair

1	Better availability of repair services in my country
4	Wider range of repairable products
5	Availability of product spare parts
6	Partnerships with authorised / independent repairers
7	Other [specify]

58. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
Do you offer any commercial guarantees for your products?
[multiple answers possible]

1	Yes, for new products
2	Yes, for second-hand
3	Yes, for refurbished products
4	No, we do not offer commercial guarantees

59. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
How often did you offer replacement due to impossibility of repair?

1	Very often
2	Often
3	Sometimes
4	Rarely
5	Never

60. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
What are the reasons for offering repair and replacement within the legal guarantee period?
[multiple answers possible]

		Consumer demand	Consumers want their product back fast	Burdensome return process	Lower costs (than repair or replacement)	Offers a competitive advantage compared to our main competitors	None of these options	Other (specify)
1	Repair within the legal guarantee	○	○	○	○	○	○	*Text*
2	Replacement within the legal guarantee	○	○	○	○	○	○	*Text*

61. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY IF "LOWER COSTS" [answer 1] WAS SELECTED IN Q10]
Why is repair cheaper?

[open question]

62. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
[DISPLAY IF "LOWER COSTS" [answer 2] WAS SELECTED IN Q10]

Why is replacement cheaper?
[open question]

63. [DISPLAY ONLY IF ANSWERS 1 IS SELECTED IN Q1]
What do you do with the defective products that are returned / replaced by the consumers?
[multiple answers possible]

1	We refurbish and re-sell them
2	We use non-defective components to manufacture new products
3	We dispose them
4	We sell them in third markets as second-hand
5	We sell them in third markets as refurbished
6	Other (specify)

64. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 2-4 ARE SELECTED IN Q1]
What do you do with the defective products that are returned / replaced by the consumers?
[multiple answers possible]

1	We refurbish and re-sell them
2	We dispose them

1	We refurbish and re-sell them
3	We sell them in third markets as second-hand
4	We sell them in third markets as refurbished
5	Send them back to producer
6	Other (specify)

65. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 1-4 ARE SELECTED IN Q1]
What are the main reasons for not repairing a product under the legal guarantee?
[multiple answers possible]

1	The default is caused by the consumer and not covered under the guarantee
2	The issue cannot be fixed due to the design of the product
3	Repair is more expensive than replacement
4	Consumers prefer replacement
5	The repair would take too long
6	Spare parts are not available
7	We do not have repair services
8	Other (specify)

66. [ALL]
Which of the following features describe best a "refurbished product"?
[multiple answers possible]

1	Used item
2	Functional
3	Cleaned
4	Prior user data deleted
5	Functionality tested by a technical expert
6	Structurally repaired (if necessary)
7	Professionally cleaned and sanitised
8	Preventive repairs of replacements of parts were carried out
9	Looks like new, aesthetically repaired if necessary
10	None of the above
11	Other [specify]

67. [ALL]
Select the type of products that your company is selling or interested in selling:
[multiple answers possible]

	Selling	Interested in selling
New products		
Refurbished products		
Second-hand products		

68. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
Which of the following products did you buy last year with the intention to repair and resell them? Please insert an estimate number of products purchased [multiple answers possible]

1	Mobile phones/Smartphones	_____ *number*
2	Televisions	_____ *number*
3	Refrigerators	_____ *number*
4	Laptops	_____ *number*
5	Clothing	_____ *number*
6	Shoes/footwear	_____ *number*
7	Cars	_____ *number*
8	Wooden furniture	_____ *number*
9	Other (specify)	*text*
10	None of the above	

69. [DISPLAY ONLY IF AT LEAST ONE OF ANSWERS 5-7 ARE SELECTED IN Q1]
To which extent do you agree with the following statements? [one answer possible per statement]

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know/ refuse to respond
Manufacturers make products that are difficult to repair (e.g. glued together)	o	o	o	o	o	o
There is a scarcity of spare parts which allows us to repair products	o	o	o	o	o	o
Spare parts are too expensive	o	o	o	o	o	o
Repair manuals are not made available by the manufacturers	o	o	o	o	o	o
Repair costs are deemed too high by consumers (resulting in low demand)	o	o	o	o	o	o
It's difficult to assess how much repair would cost	o	o	o	o	o	o
Consumers are concerned about warranty from supplier / manufacturer and thus prefer not to repair the product themselves or by an independent repairer	o	o	o	o	o	o
Consumers are concerned about the safety of the product after it being repaired by themselves of by an independent repairer	o	o	o	o	o	o

70. [ALL]
Should businesses benefit from the same repair/replacement possibilities as consumers for the products they acquire for its own use?

1	Yes
2	No

2.6.3. Results

The main results are presented in Annex 1.3.

2.7. Mystery shopping

This chapter presents the method used for designing the study's mystery shopping exercise. The main results are also presented.

2.7.1. Method

Mystery shopping exercise will be carried out in four steps:

- **Step #1: Selection of the sample of products for mystery shopping together with a sample of Member States**

We will aim for at least **600 completed observations** as part of the mystery shopping exercise. Whereby one observation equals one product covered in one country.

In order to ensure that we have several services of the same type in each country in the sample, we propose to split the observations as follows:

- Selection of countries: 12
- Number of observations per country: 50
- Selection of products: 3
- Number of observations of the same service/ product category in the same country: 16
- Number of observations per product, within country, under guarantee and outside guarantee: 8 for each scenario

For the selection of services or goods to be covered in this assignment we will follow the same process as described in the section on scope. We assume that the products will be covered (the final choice will be made based on the results of the product selection):

Product category	Products	Issue to be tested
Electronic device	Phone	The battery is not working anymore, the phone needs to be charged every three hours
Textile item	Shoes	The heel fell after less than 10 usages
Household appliance	Fridge	The freezer is not cold enough despite lowering the temperature.

Following the approval of DG JUST on the three products to be covered by the mystery shopping, we will put together a list of shops to be contacted by the mystery shoppers.

The sample of countries will be the same as the one presented earlier in the introduction section (geographical scope).[36]

[36] BG, DE, ES, EE, EL, FR, HU, IT, NL, PL, RO, SE

- **Step #2: Preparing detailed instructions for the persons implementing mystery shopping exercise and their briefing**

This step will cover:

Selection of retailers;

Development of the detailed instructions to the mystery shoppers about what to do when and what to look for (mystery shopping scenario);

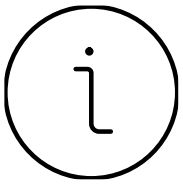
Design of the detailed observation grid – the observation grid is in summary a questionnaire that the mystery shoppers will need to fill at each stage of the mystery shopping process; and

Briefing of mystery shoppers.

The selection of shops will be carried out following the validation of products to be covered through the mystery shopping by DG JUST.

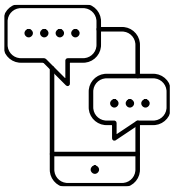
The draft version of the instructions for the mystery shoppers is provided below.

Table 26 - Detailed instructions to the mystery shoppers

Background of the study 	The mystery shopping exercise is part of a European Commission which aims to extend the duration of use of consumer goods**. T**he objective **of the study** is to ascertain whether consumers dispose of consumer goods prematurely and if so, what are the causes and consequences of this potential problem. The mystery shopping exercise should help understand • how frequently are consumers offered to repair a product as default compared to replacement when the product is still under legal guarantee • how frequently are consumers offered to repair a product when the product is no longer under guarantee • whether sellers refuse to repair or replace the good based on the fact that the other remedy is disproportionate?
Steps of the evaluation 	• Read the instruction carefully to understand the objective of the exercise • Look at the list of businesses that need to be mystery shopped • Call the companies from your list and claim that you have an issue with a product bought from their physical shop • Complete the observation grid during/or following your discussion with the shop customer service assistant

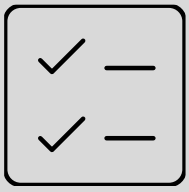
Practical information

Mystery shoppers must speak the national language fluently as the conversation needs to be done in the local language.



The observation report should be filled out in the local language.

Your scenario



Step 1: Preparation

- Read the preparatory materials before launching the calls. There are **two scenarios** that you will need to test for each product (the number of observations needed is presented below). Make sure that you are calling for the right product and use the right scenario.

	Scenario 1 (Product under legal guarantee) – no. of observations	Scenario 2 (Product outside the legal guarantee) – no. of observations
Phone	8	8
Shoes	8	8
Fridge	9	9

Check the website of the shop and look at the customer service's opening hours
Please check the note at the top of your questionnaire for the call objective that you need to use
Be prepared to answer questions about your product purchase

Step 2: Calling the retailer

Introduce yourself and state that you purchased a product from their company (in-shop) and that you are having some issues with it. Mention you prefer not to visit the shop due to health issues, but you would like to have a phone call to understand what can be done in your situation.

NOTE:

→ If you are asked for the customer / product number, say that you bought the product in shop and that you don't have one
→ If you are asked for the receipt, say you have it, but need to look for it and now you just want to ask some questions about the product purchased from the shop
→ For personal questions (e.g. name, email address), you can base yourself on real experiences if this stays in line with your profile
→ You are provided with the exact reference of the product, shops selling the product and the issue that needs to be tested, so make sure to check those before engaging in the conversation

→ You are not expected to be an expert on legal guarantees or other specifications regarding the products in scope, just act as a regular consumer

As mentioned above, there are **two scenarios** that will be tested through the mystery shopping.

! In both cases, please ensure that for at least 3 products per scenario you claim to have a commercial guarantee (for the rest, it is assumed that the mystery shopper does not have one).

Scenario 1: product under legal guarantee

You will call the retailer shop explaining that the product (of the three selected) that you bought **one year ago** is no longer functioning (use the product-specific issue).

Note: do not inform the retailer that the product is still under legal guarantee, we want to see whether you are properly informed by the retailer.

Once you have explained the issue, ask the retailer how to proceed and what can the retailer do to fix the issue. Do not ask for replacement or repair, wait for the retailer to propose a solution.

If you are offered a product replacement, ask whether repair is an option and if not, ask why repair is not being proposed as an option.

If they offer repair, ask how to proceed in this case (e.g. bring back the product to the shop, take it to a specific repair stop, have it picked up by the retailer). Ask also whether:

- A replacement product is offered during the repair
- How long the repair was supposed to last

Try to find out also if the repair is carried out by the retailer or whether the products are being sent back to the producer or a third-party repair shop.

If you are being told to contact the manufacturer, tell the retailer that the product is still under the legal guarantee (of two years) and that you are aware of your rights – among which, that the product can be returned to the seller. In this case, please describe (using the questionnaire) what is the reaction of the retailer.

Scenario 2: product no longer under legal guarantee

Under this scenario the above approach will be slightly changed, and you will enquire about a product that is no longer under legal guarantee.

You will call the retailer shop explaining that the product (of the three selected) that you bought **four years ago** is no longer functioning (use the product-specific issue).

Once you have explained the issue, ask the retailer whether the product can still be repaired.

If repaired is not being offered, ask the retailer the reason why.

If the repair is being offered, ask the retailer about the estimated cost based on the description of the default. Given that the mystery shopping will be over the telephone only an estimate will be gathered (in national currency). Ask also whether:

- A replacement product is offered during the repair
- How long the repair was supposed to last

Try to find out also if the repair is carried out by the retailer or whether the products are being sent back to the producer or a third-party repair shop.

If the retailer encourages you to buy a new product, ask the retailer whether this is more advantageous economically compared to repairing the product (ask for the cost). Ask also if they collect the defective products for recycling.

At the end of the call, thank the retailer for their time and say that you will assess the options and get back to them or go directly in-shop. If they send you any additional information (e.g., by email), report the information provided in the observation grid.

The table below represents the draft observation grid which contains the questions that the mystery shoppers must answer to, reflecting their phone interaction with the retailers.

Table 27 - Detailed observation grid

	Question	Comment for shopper	Format coding	Answers / Score	Required / Routing
Call details	Call date	-	Date	DD/MM/YYYY	Always required
	Start time	-	Time of day	[UU:MM]	Always required
	End time	-	Time of day	[UU:MM]	Always required
	Product discussed	-	Single Code	() Product 1 () Product 2 () Product 3	Always required
	Scenario covered	-	Single Code	() Scenario 1 (under legal guarantee) () Scenario 2 (outside the legal guarantee)	Always required

	Question	Comment for shopper	Format coding	Answers / Score	Required / Routing
About the retailer	What is the name of the retailer contacted?	*Select from the list of retailers provided during the*	Comment	Insert name and link	Always required
	How easy was it to contact the retailer?	-	Single Code	() Very easy (one phone call away) () Somewhat easy () Somewhat difficult () Very difficult (accessing the right service took some negotiation)	Always required
	With what department did you get in touch?	-	Single Code & Comment	() General customer service () Dedicated repair / replacement department () Other (specify)	Always required
Interaction with the retailer	What was the retailer's first reaction when you explained the issue with your product?	*Multiple answers possible*	Single Code & Comment	() Asked if I have a commercial guarantee () Asked if I purchased the product online () Re-directed me to their physical shop () Offered a replacement immediately () Offered product repair immediately () Said that I need to get in touch with the manufacturer () Asked whether I have proof that the default was not caused by me (the consumer) () Other (comment)	Always required
	If "Said that I need to get in touch with the manufacturer" please tick the option that describes best the next step	*Here the shopper was supposed to tell the retailed that, according to the legal guarantee, the seller should be able to help. Please explain the following steps*	Single Code & Comment	() The retailer changed the reaction and offered product repair () The retailer changed the reaction and offered product replacement () The retailer insisted to get in touch with the manufacturer () Other (Comment)	Required IF previous Q is answered "Said that I need to get in touch with the manufacturer"
	Was any other type of guarantee mentioned?	-	Single Code & Comment	() Yes (Comment) () No	Always required
	Did the retailer ask you to prove that the defect existed when the product was delivered?	-	Single Code & Comment	() Yes (Comment) () No	Always required
	Do sellers use such lack of proof as an argument to refuse to provide a consumer with a remedy under the SGD?	-	Single Code & Comment	() Yes (Comment) () No	Always required
	According to the retailer, did the product issue fall within the guarantee?	-	Single Code	() Yes () No	Always required
	If "No" please specify why	-	Single Code & Comment	() It's not their responsibility () The guarantee period was exceeded () Other (specify)	Required IF previous Q is answered "Other"
Repair vs. replace	Did the retailer offer the repair option?	*If repair was not offered, explain why*	Single Code & Comment	() Yes () No (Comment)	Always required
	If "Yes", were you asked to pay for the repair?	*If you were asked to pay for the repair, specify the cost (national currency)*	Single Code & Comment	() Yes (Insert cost) () No	Required IF previous Q is answered "Yes"

Question	Comment for shopper	Format coding	Answers / Score	Required / Routing
	If possible, offer costs breakdowns (labour, transport, parts)			
If "Yes", what repair options were offered?	-	Single Code & Comment	() Return product to the shop (repair to be done by the seller) () Return the product to the producer directly () Take it to an affiliated repair shop () Other (specify)	Required IF previous Q is answered "Yes"
If "Yes", was repair the first option offered?	-	Single Code	() Yes () No	Required IF previous Q is answered "Yes"
If "Yes", what was the estimated repair duration?	-	Single Code	Insert number of days	Required IF previous Q is answered "Yes"
If "Yes", were you offered a replacement product during the repair period?	-	Single Code & Comment	() Yes (comment) () No	Required IF previous Q is answered "Yes"
Did the retailer offer the replacement option?	*If replacement was offered, ask the retailer why repair is not proposed*	Single Code & Comment	() Yes (comment) () No	Always required
If "Yes", what were the reasons invoked?	-	Single Code & Comment	() The product is not repairable () Repair would take too much time () Repair is not financially convenient () Other (specify)	
If "Yes", was replacement the first option offered?	-	Single Code	() Yes () No	Required IF previous Q is answered "Yes"
If "Yes", were you offered a new or a refurbished product?	-	Single Code	() New product () Refurbished product () Not specified	Required IF previous Q is answered "Yes"
[only for scenario 2] Did the retailer encourage you to buy a new product?	-	Single Code	() Yes () No	Always required
If "Yes", what arguments were made by the retailer?	*Multiple answers possible*	Single Code & Comment	() More advantageous economically compared to repair () The other remedy is disproportionately costly () More advantageous economically compared to replacement () More performant product () Faster than the other remedy () Other (specify)	Required IF previous Q is answered "Yes"
Does the seller collect / recycle defective products?	-	Single Code	() Yes () No	Always required

- **Step #3: Piloting mystery shopping exercise**

The pilot exercise will cover testing the feasibility, clarity and correct scripting of the mystery shopping questionnaire in one country for 12 observations (2 for each "cell" as per above matrix).

- **Step #4: Data collection**

As part of this step the mystery shopping exercise will be undertaken in respect with the designed methodology.

The data collection will be monitored on ongoing basis and reported to DG JUST

2.7.2. Results

Mystery shopping data analysis

Overall information

The mystery shopping was conducted in 12 countries: Estonia, Germany, France, Netherlands, Spain, Italy, Greece, Bulgaria, Czechia, Poland, Romania, and Sweden. In each of the countries the mystery shopping collected 50 observations. In each of the selected countries, 10 shops have been selected per products. For phones, additional retailer shops have been identified to ensure that phones older than two years old could be purchased in their stores. The shops contacted for the study were a combination of SMEs (234) and large chain companies (366) at national (452) and international level (148) as shown in the Tables below.

Table 28 - Large Chain vs SME - country level

Country	Large chain	SME
Bulgaria	34	16
Estonia	24	26
France	44	6
Germany	34	16
Greece	25	25
Hungary	16	34
Italy	30	20
Netherlands	32	18
Poland	38	12
Romania	27	23
Spain	30	20
Sweden	32	18
Total	**366**	**234**

Table 29 - International vs National Chain - country level

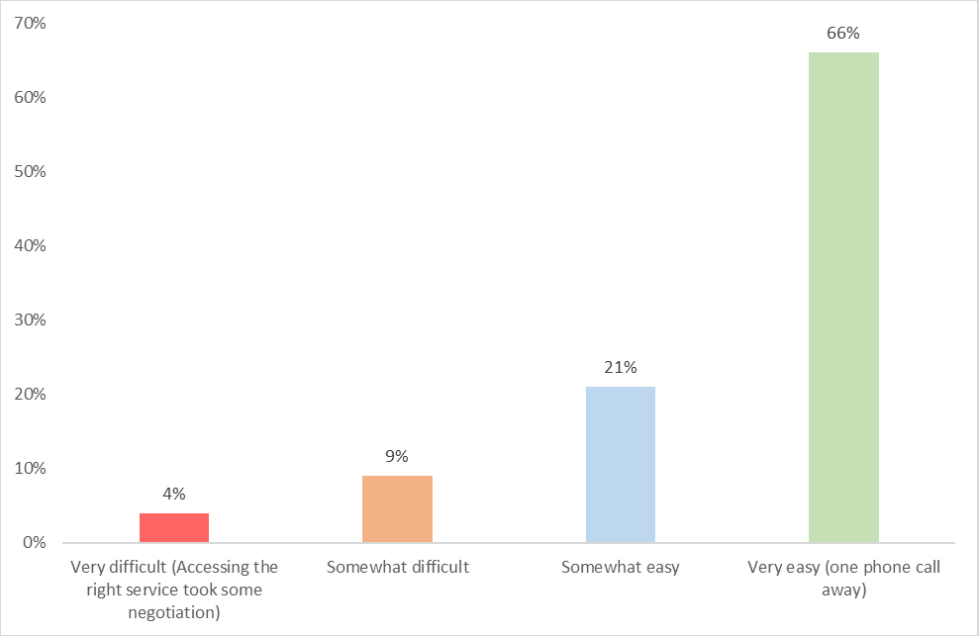
Country	International chain	National company / chain
Bulgaria	8	42
Estonia	10	40
France	24	26
Germany	17	33
Greece	8	42
Hungary	8	42
Italy	15	35
Netherlands	10	40
Poland	11	39
Romania	7	43
Spain	15	35
Sweden	15	35
Total	**148**	**452**

The mystery shopping tested two scenarios. In scenario 1 the mystery shopper called the retailer shop to explain that the product that was bought one year ago is no longer functioning. The shopper did not inform the retailer that the product was still under legal guarantee. In scenario 2, the mystery shopper called the retailer and explained that the product that was bought four years ago is no longer functioning. Each of the scenarios have been tested for the three products selected: fridge, phone, and shoes.

Information about the retailers

The observation grid asked the mystery shoppers how easy it was to contact the retailer. The Figure below shows the results (average of both scenarios). The Figure shows that 66% of the mystery shoppers answered that it was "very easy (one phone call away)" to get in contact with the retailer, followed by somewhat easy (21%). The results also show that less than 5% of the mystery shoppers experienced high difficulty in reaching out to the retailer.

Figure 88 - How easy was it to contact the retailer?



The second question in the observation grid asked the mystery shoppers with what department did they get in touch. The two Figures below show that for both scenarios and for each of the products most shoppers, ranging from 72.9% to 88.5%, got in contact with general customer service. Under both scenarios, between 14% and 16% of the shoppers got in touch with a dedicated repair/replacement department for Fridge and around 20% for Phone. Yet none of the shoppers managed to get in touch with a dedicated department for shoes in scenario 1 and only 3.16% under scenario 2. A relatively high percentage of shoppers answered "other". The following answers have been identified: sales department, contacted the store directly, technical assistance service, warranty, claims, and service department.

Figure 89 - With what department did you get in touch? Scenario 1 - Under the legal guarantee

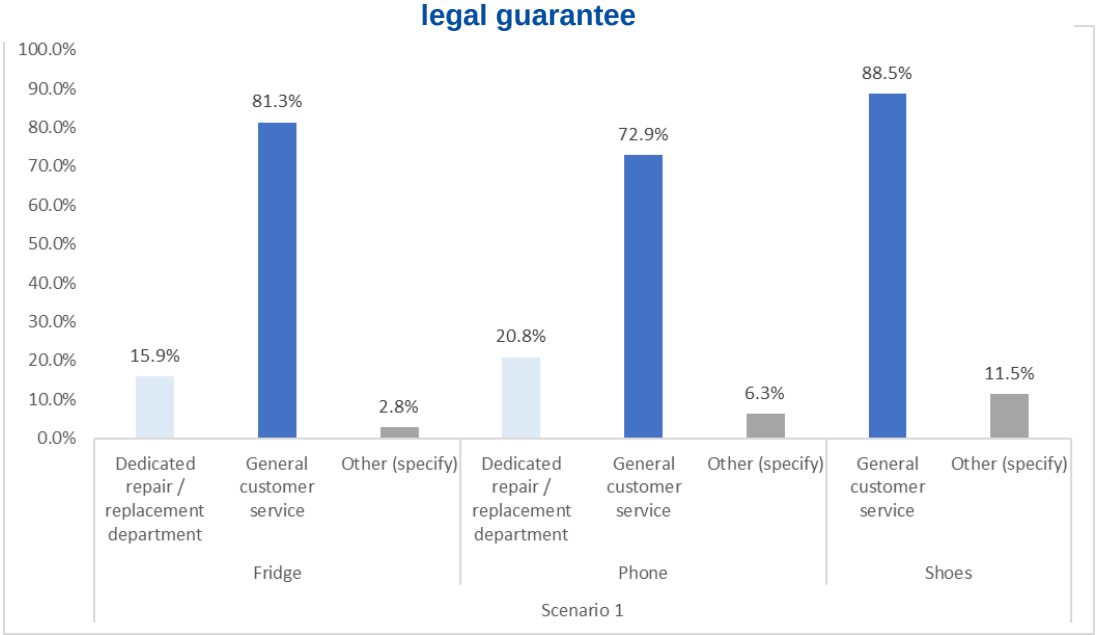
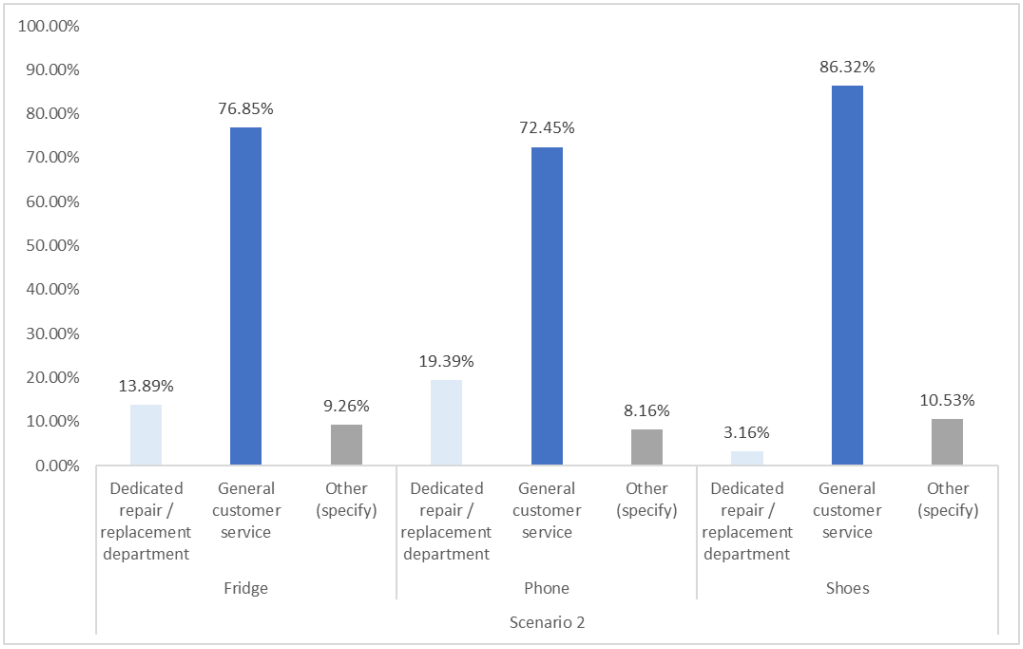


Figure 90 - With what department did you get in touch? Scenario 2 - Outside of the legal guarantee



Interaction with the retailer

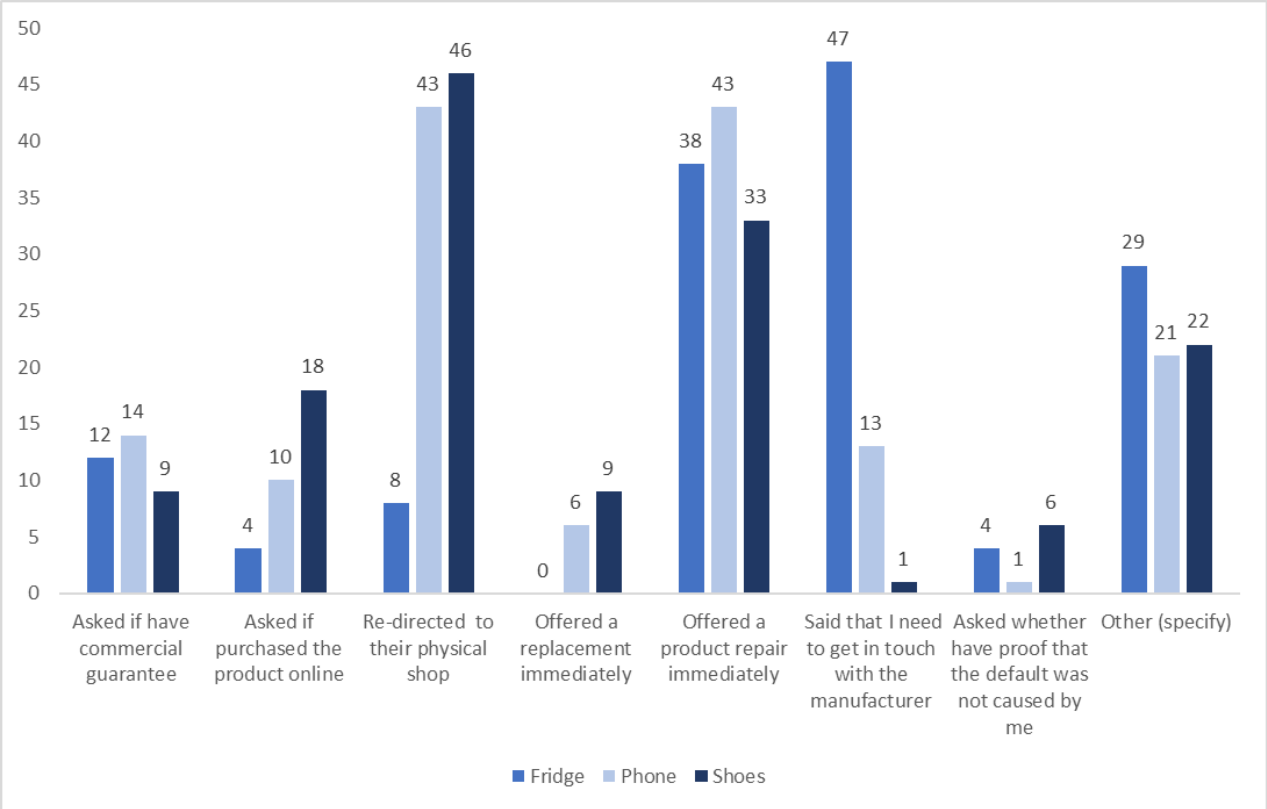
The next section of the observation grid is looking at the interaction with the retailer. The first question asked the shoppers to select among a list of answers[37] that were related to the first reaction of the retailer when they explained the issue with the product. In Scenario 1, an important number of shoppers selected "offered product repair immediately" (Fridge: 38, Phone:43, Shoes:33). The option "re-directed to their physical shop" has also been chosen in most cases for phone and for shoes. However, In the case of the fridge, forty-seven shoppers said that the retailer told them to get in touch with the manufacturer. An important number of shoppers selected the option "other". Overall, a high number of shoppers were offered repair immediately.

The most mentioned answers in "other" are the following: some retailers showed willingness to help but lacked capability (no repair service or absence of in-house technicians), asked for serial number, order receipt, invoice etc. to identify shopper or asked for proof of the default (regardless of the cause) such as pictures sent via email. The results also show that when asked whether the retailer asked to prove that the defect existed when the product was delivered,

[37] Asked if have a commercial guarantee, asked if purchased the product online, re-direct to their physical shop, offered a replacement immediately, offered product repair immediately, said that need to get in touch with manufacturer, asked for proof that the default was not caused by the consumer.

most shoppers (between 97% and 100%), in both scenarios and for the different products, answered that the retailer did not ask for any proof. Almost all sellers (99%) that requested a proof that the defect existed, did not use such lack of proof as an argument to refuse to provide a remedy under the legal guarantee.

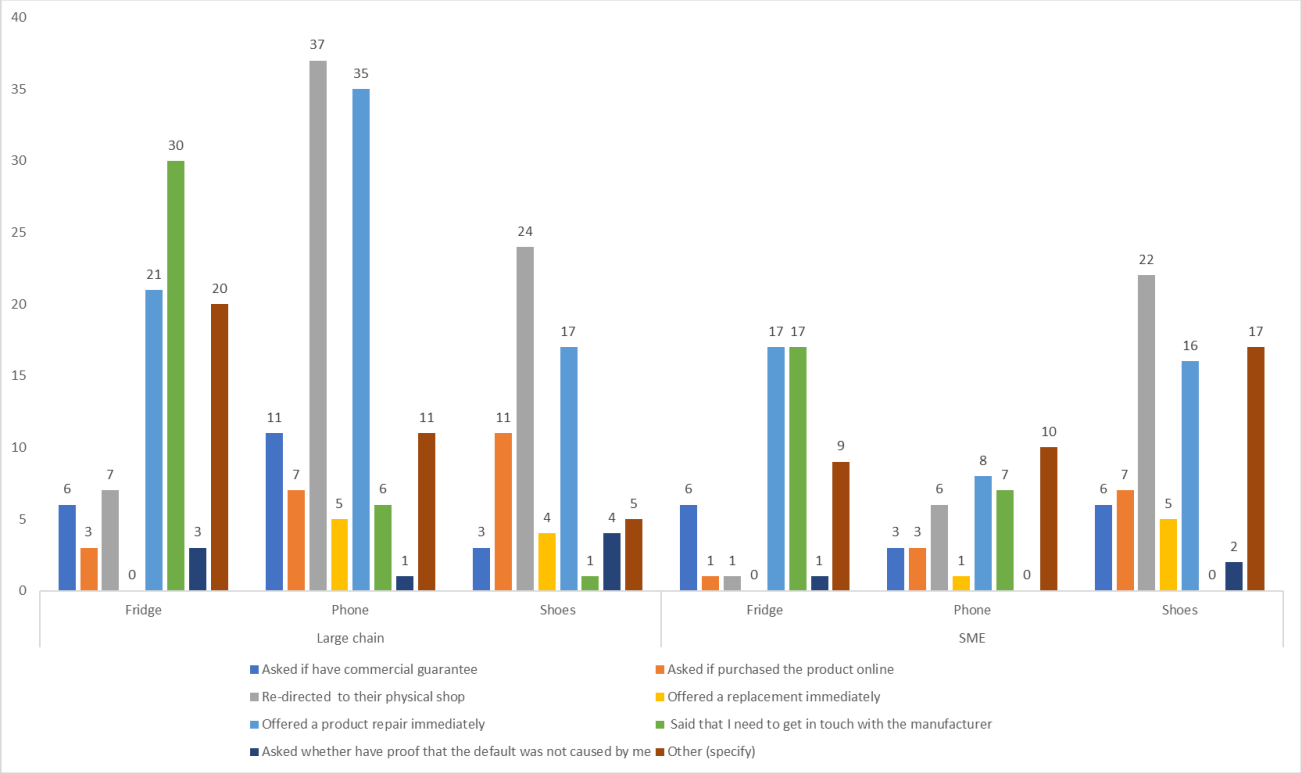
Figure 91: What was the retailer's first reaction when you explained the issue with your product? [Scenario 1]



The figure below shows the results by company size. Many retailers for fridge (30) in large chains compared to SMEs (17) said that shoppers need to get in touch with the manufacturer. For phone, a larger number of retailers in large chains re-directed the shoppers to their physical shop (37 compared to 6) and or/offered a product repair immediately (35 compared to 8). For shoes, the two most mentioned reactions from retailers in large chain are also "re-directed to their physical shop" and "offered a product repair immediately". In SMEs, a larger number of shoppers answered "other" which refers to sending the details of the

purchase to the retailer or that the shoes need to be examined by the retailer before any decision can be taken.

Figure 92 - What was the retailer's first reaction when you explained the issue with your product? [Scenario 1 – per company size]



In scenario 2, the main reaction highlighted by the shoppers is also "offered product repair immediately" (Fridge: 29, Phone: 38, Shoes: 36). While "asked if I have a commercial guarantee" has also been selected by twenty-seven shoppers for fridge and twenty-four shoppers for phone. Twenty-three shoppers for phone and twenty-one for shoes have also been re-directed to the physical shop of the retailer. Lastly, twenty-eight shoppers for fridge have been told to get in touch with the manufacturer. The option "other" has also been selected by a considerable number of shoppers. (Fridge: 40, Phone: 30, Shoes: 56). The majority of other reactions mentioned by the shopper are that the retailers offered online/phone diagnosis or asked for an order number (i.e., proof of purchase). A maximum number of shoppers also wrote that the retailer advised them to find a shop to repair the defective product at their own cost.

Figure 93 - What was the retailer's first reaction when you explained the issue with your product? [Scenario 2 – Commercial guarantee not mentioned]

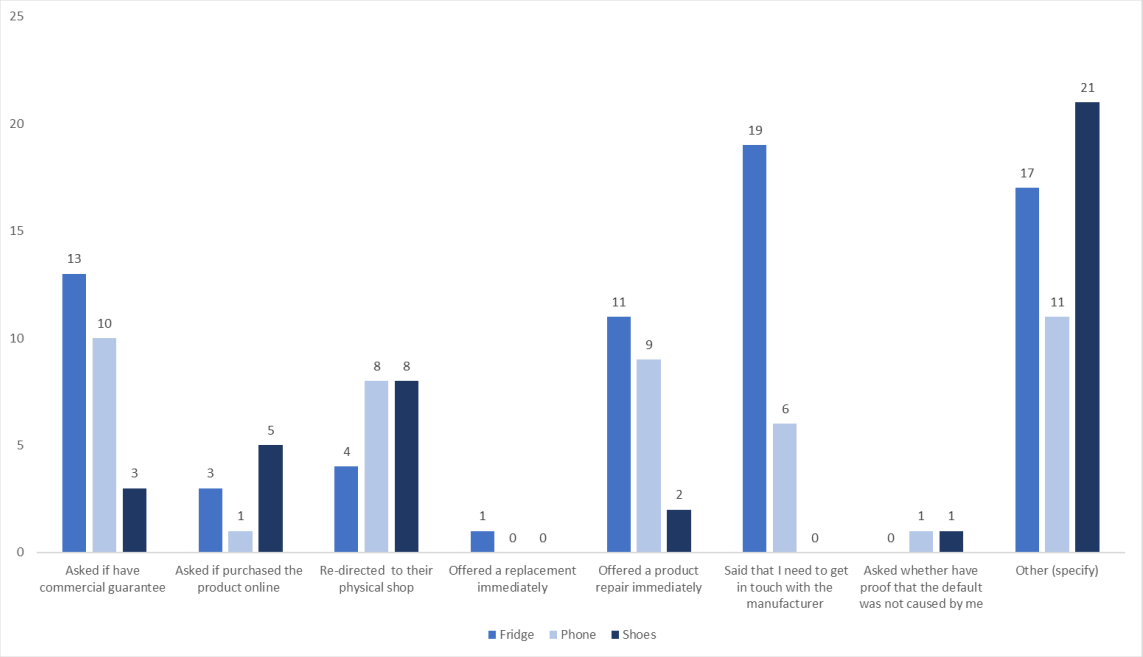
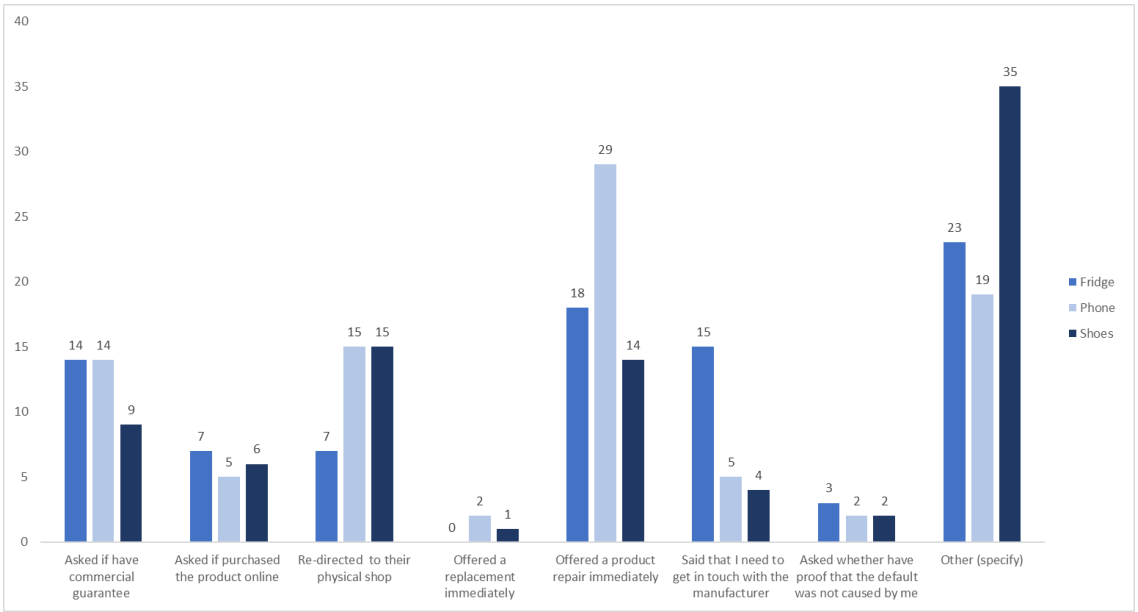


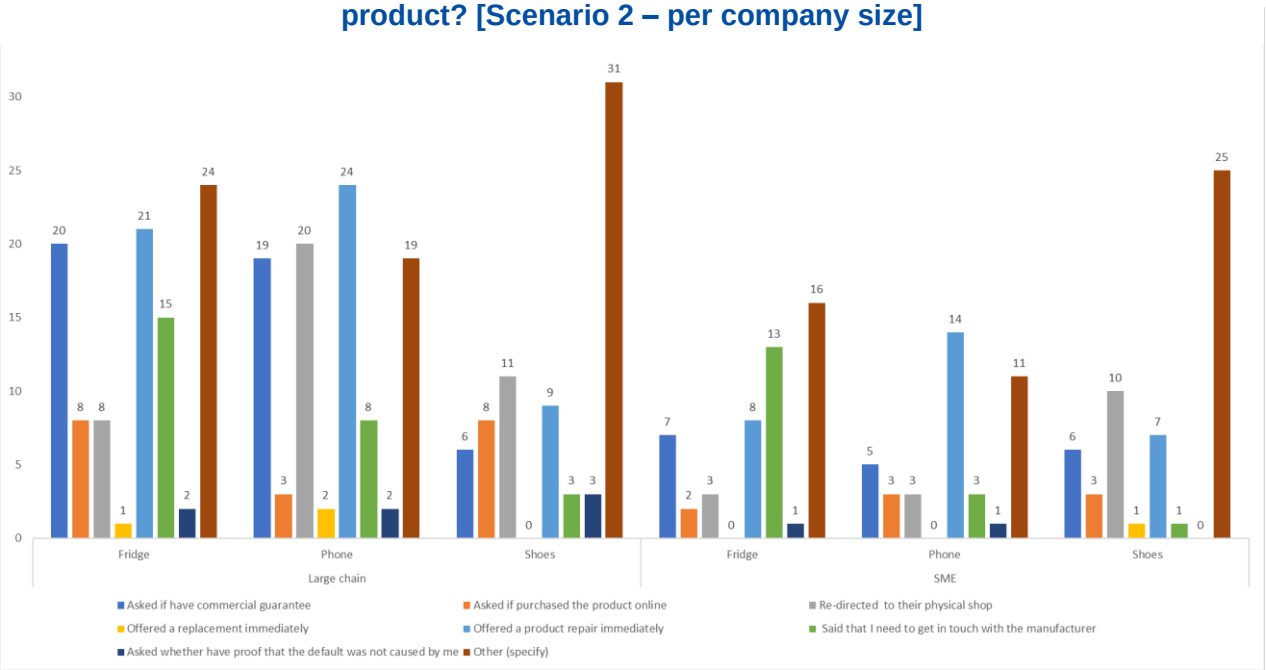
Figure 94 - What was the retailer's first reaction when you explained the issue with your product? [Scenario 2 – Commercial guarantee mentioned]



The Figure below shows the results by company size for scenario 2. Apart from "other", large chains retailers tend to ask more if the customer has a commercial guarantee for fridge and phone than retailers in SMEs. For fridge, the most mentioned first reaction from retailers in SMEs is to tell the customer to get in touch with the manufacturer. For phones, it was the retailers from large chains that were more often re-directing the shoppers to their physical shop rather than

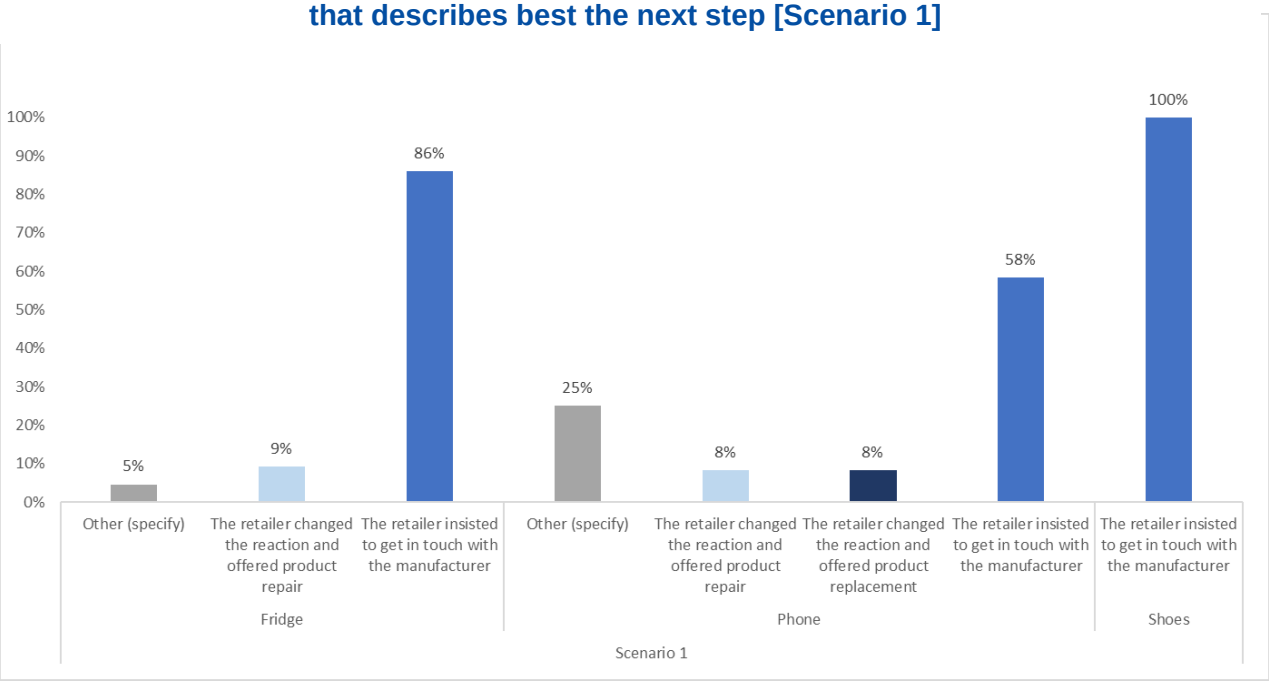
SME retailers. Yet, for both types of companies a large number of retailers offered product repair immediately for phone.

Figure 95 - What was the retailer's first reaction when you explained the issue with your product? [Scenario 2 – per company size]



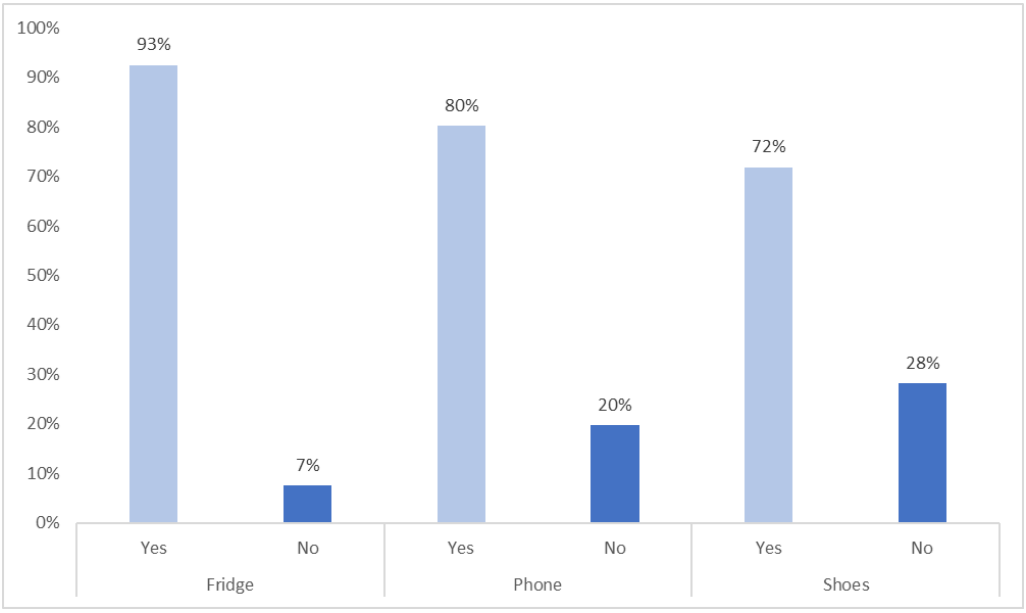
For the retailers that told the shoppers to get in touch with the manufacturer, the shoppers had to explain to them that according to the legal guarantee they should be able to help. The Figures below show whether the retailers changed their reactions or not based on the new information provided. In scenario 1, most retailers across all products insisted to get in touch with the manufacturer. However, a low percentage (8-9%) for fridge and phone did change their reaction and offered either product repair or replacement. For phone, 25% of shoppers that answered "other" were asked by the retailers to either bring the products back to the shop and they will assess the defect and see how to proceed, or in the case where a commercial guarantee was mentioned at the beginning of the conversation the retailer advised to call the number on the guarantee card.

Figure 96 - If "said that I need to get in touch with the manufacturer" please tick the option that describes best the next step [Scenario 1]



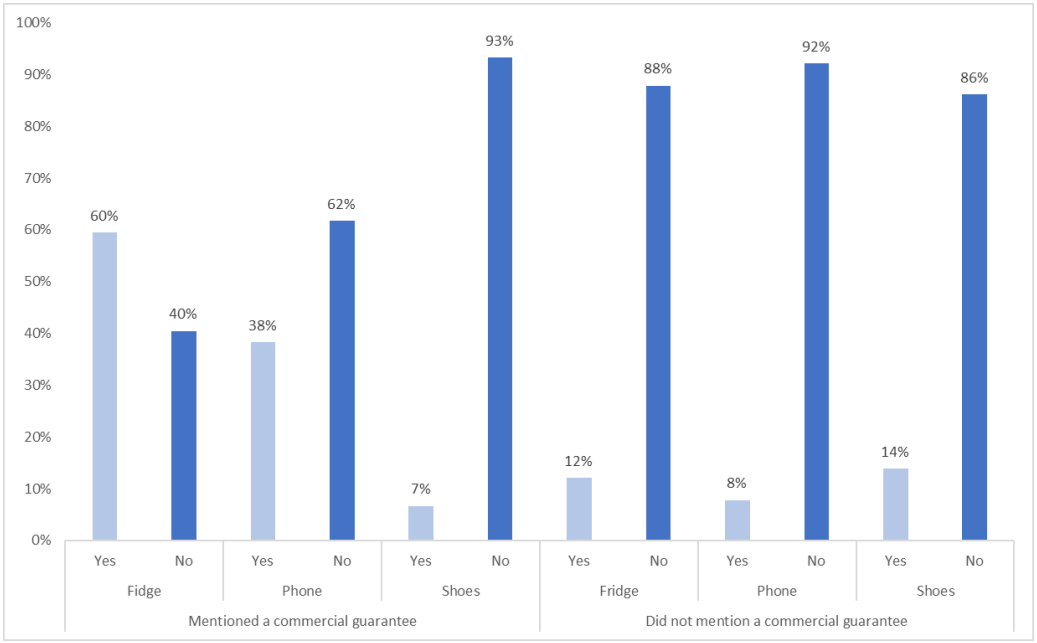
Under scenario 1, a high number of retailers said that the product defect falls within the guarantee. For shoes, as shown in the Figure below, a higher percentage (28%) of retailers did not consider that the product falls within the guarantee, as compared to others. One reasons might be that commercial guarantees do not exist or is less applied for products like shoes (e.g., could be more frequent for luxury goods). For phone, 20% of retailers also did not consider that the product fall within the guarantee.

Figure 97 - According to the retailer, did the product issue fall within the guarantee? [scenario 1]



Under scenario 2, when the commercial guarantee is mentioned by the shopper the percentage of "falling within the guarantee" is higher for fridge and phone than when the commercial guarantee is not mentioned. Yet, for shoes mentioning the commercial guarantee did not have a significant impact.

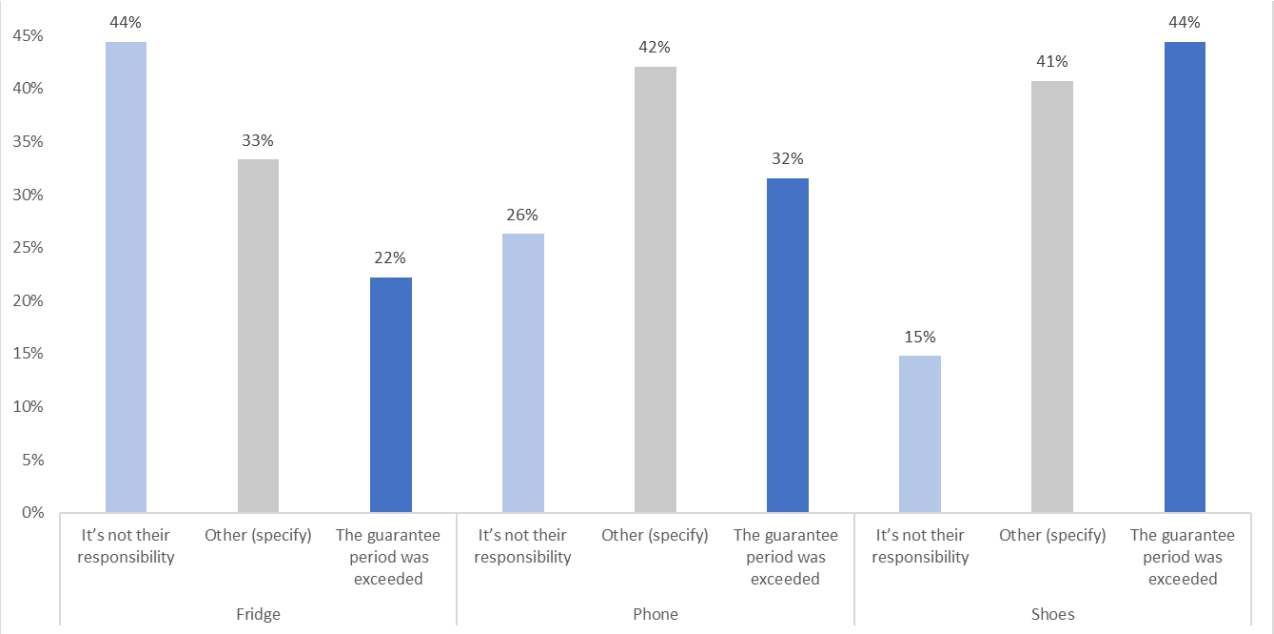
Figure 98 - According to the retailer, did the product issue fall within the guarantee? [scenario 2]



Under the legal guarantee, 44% of the retailers for fridge consider that the product did not fall in the guarantee because it is not their responsibility. The qualitative data showed that in most cases, retailers considered that when there is no guarantee, the responsibility lies on the manufacturer. For phone and shoes, a high number of retailers considered that the guarantee period was exceeded even if the product was bought less than two years ago.

Under scenario 1, there is a high percentage of "other". The reasons that were the most mentioned under this category are the following: the contact person was not able to say whether the product falls under the guarantee or if it is their responsibility further investigation was needed, the shopper should bring the defective product to the shop, the shopper needs to send more details such as pictures of the defect and/or receipts of the purchase.

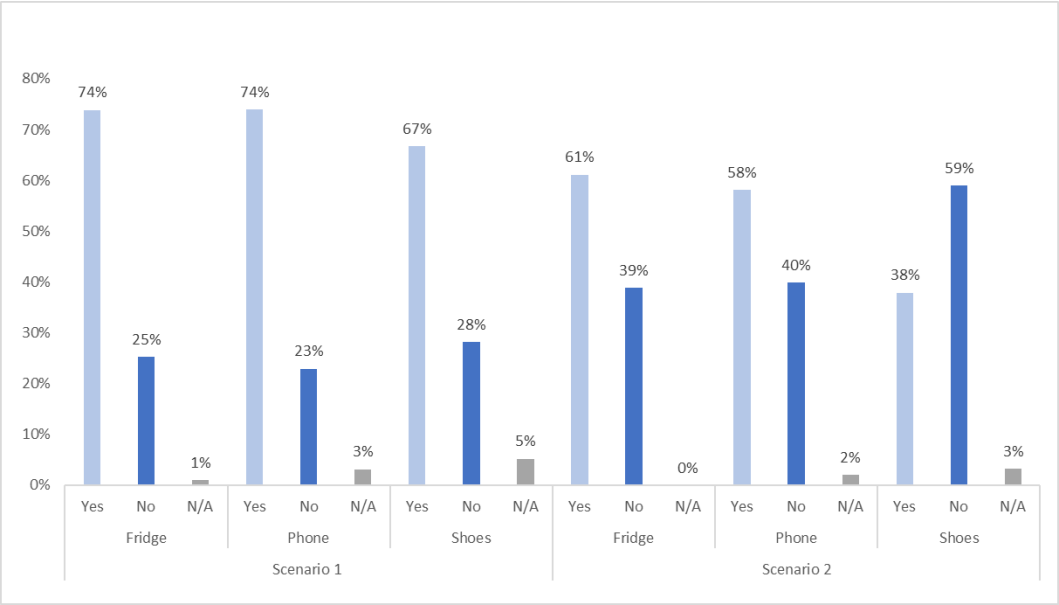
Figure 99 - If the product did not fall within the guarantee, why? [Scenario 1]



Repair VS Replace

Under the legal guarantee, many retailers offered a repair solution by the end of the conversation as shown in the Figure below. Above 70% of the retailers for fridge and phone proposed a repair solution while around 67% for shoes offered one. Yet, outside of the legal guarantee (scenario 2), the results are contrasting. As shown in Figure 7, 61% of retailers for fridge proposed a repair solution. However, around 59% of retailers for shoes and phone did not offer a repair solution. Overall, in both scenarios the number of retailers offering a repair solution is quite positive. In scenario 2, some of the shoppers mentioned a commercial guarantee at the beginning of the call which might have impacted the number of retailers that offered a repair solution.

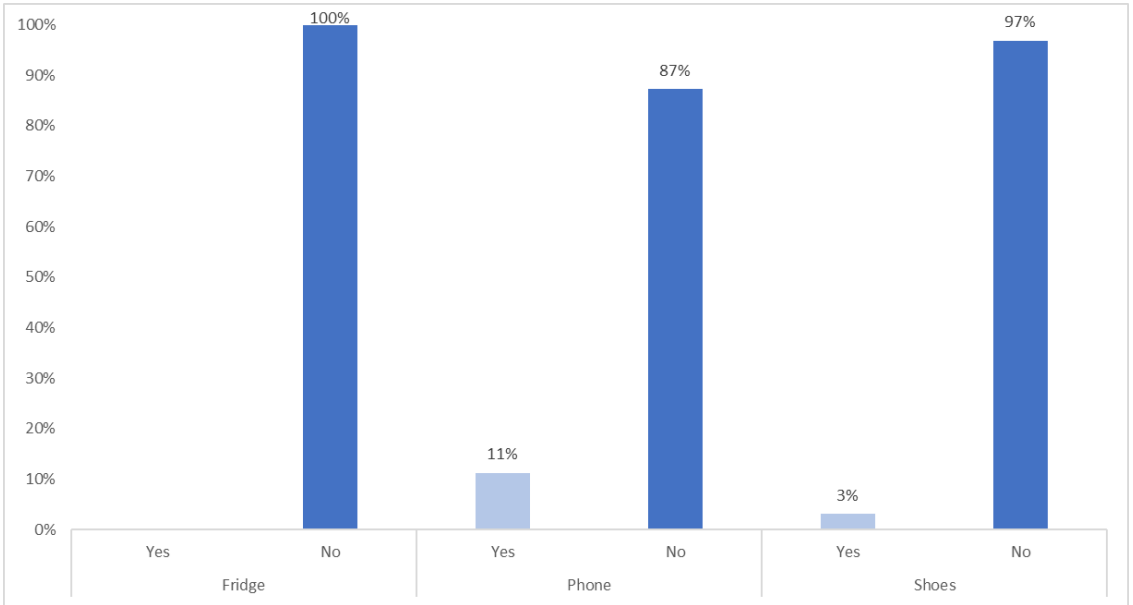
Figure 100 - Did the retailer offer a repair solution?



The main reasons invoked for not offering repair are: the product is not repairable, should take the defective product to an affiliated repair shop, should take the defective product to a local repair shop and pay at the shopper's own expense for the repair, the shop does not offer repair, should contact the manufacturer because it is not their responsibility, the product is no longer under guarantee it is not their responsibility to undertake the repair.

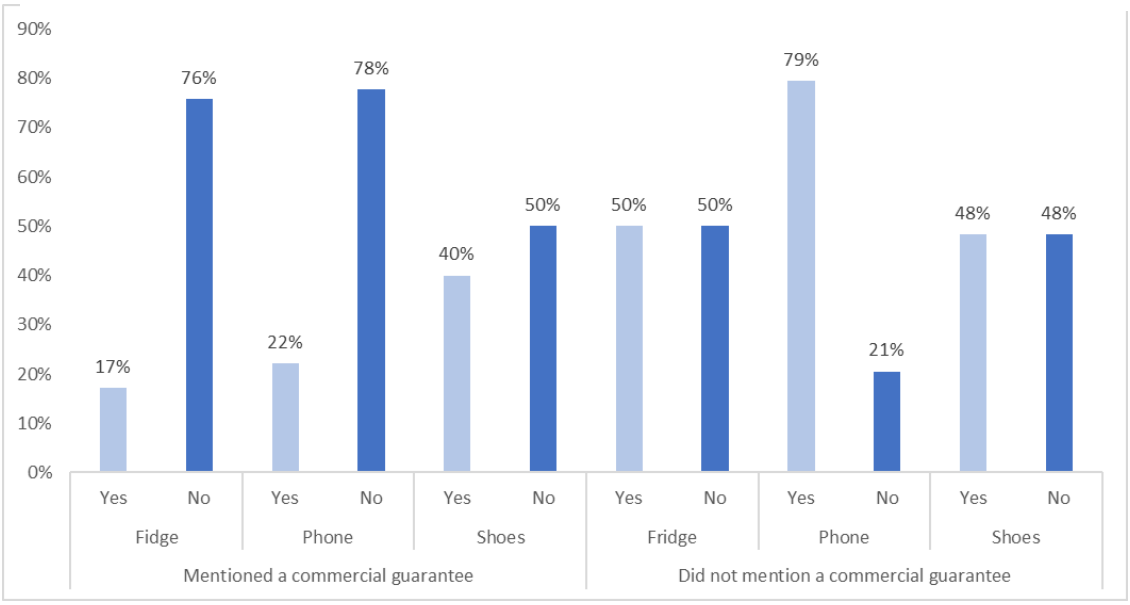
The Figures below show the percentage of shoppers that were asked to pay among the ones that got offered a repair solution. Under the legal guarantee, a low number of shoppers were asked to pay for the repair. Yet, 11% of shoppers for phone were asked to pay for the repair. In some of the answers mentioned by the shoppers for other questions it appeared that in some instances the battery was not covered by the legal guarantee.

Figure 101 - Were you asked to pay for the repair? [Scenario 1]



Under scenario 2, overall, a higher percentage of shoppers were asked to pay for the repair compared to scenario 1. When the shoppers mentioned that they had no commercial guarantee, there is a significant higher number of retailers that asked to pay, especially for fridge (17% to 50%) and phone (22% to 79%). For shoes, having a commercial guarantee does not impact the results. In the case that the shoppers said that they were not asked to pay for the repair while they mentioned not having a commercial guarantee, the results show that they were asked to either bring the product to the shop or back to the manufacturer. The observation grid asked the shoppers whether they were asked to pay for the repair during the call, which explains the results below. The repair costs have not been mentioned in the conversation, and the customers might have to pay for the repair later in the process.

Figure 102 - Were you asked to pay for the repair? [Scenario 2]

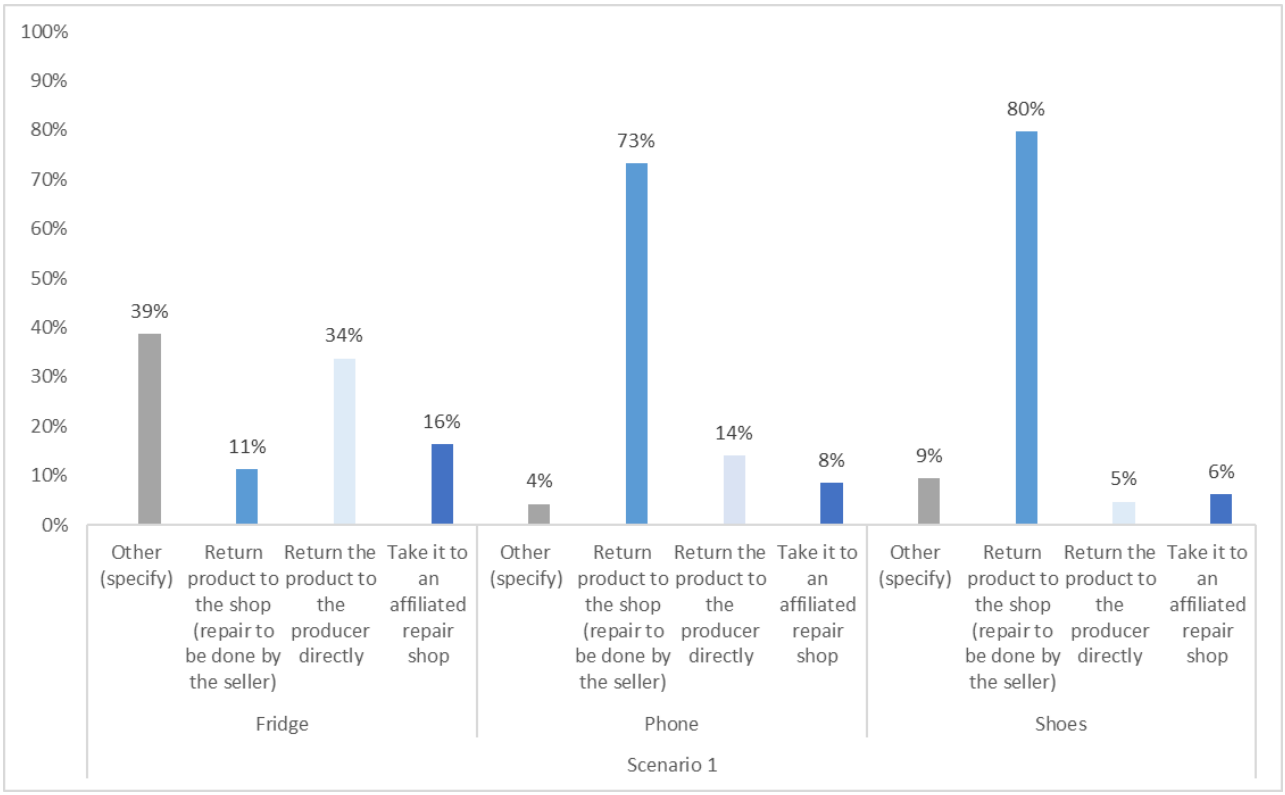


Regarding the cost of the repair, some shoppers did not manage to get a clear estimate as it required a detailed assessment of the product's issue. For fridge for example, the retailers were able to give the cost per hour of the technician, but the final cost of repair depends on the issue itself (e.g., which part of the fridge needs to be replaced). For phones, the costs provided by the retailers were for a battery replacement, assuming that it is the problem encountered. Under scenario 2, the average cost to repair the battery of a phone is 50 euros. Overall, an assessment of the product is needed to help define the cost of repair at this stage.

The mystery shoppers were asked what repair options the retailer offered them. This question was only answered by the shoppers that have been proposed a repair solution. As shown in the Figure below, in Scenario 1 most retailers for Phone (73%) and Shoes (80%) offered to return the product to the shop where the repair will be done by the seller. For Fridge, a high percentage of shoppers answered "other" (39%). The answer that was the most mentioned by the shoppers is that a technician will come to the house of the shopper directly to assess the repairability and the defect of the product. One third of shoppers for Fridge were offered to return the product to the producer directly and 16% to an

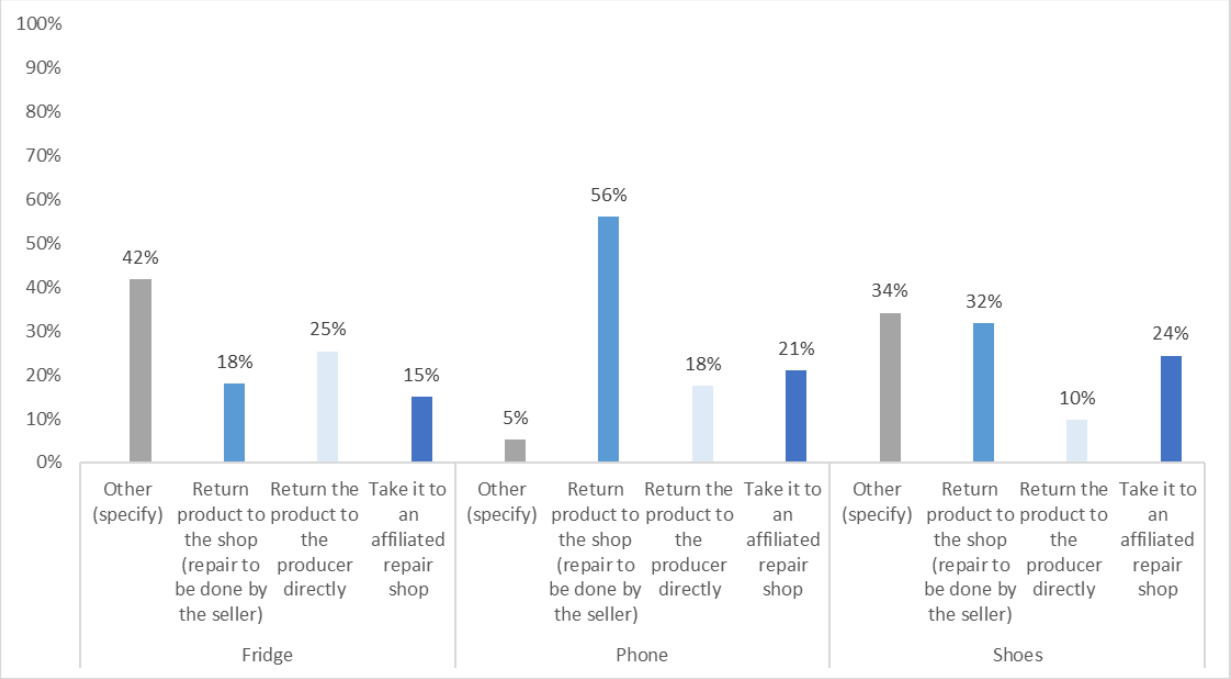
affiliated repair shop. No significant differences were found at the company size level for scenario 1 and 2.

Figure 103 - What repair options were offered? - Scenario 1



Outside of the legal guarantee, a high number of shoppers selected for fridge and shoes the option "other". For fridge, a high number of shoppers were told by the retailers to take the product to a non-affiliated repair shop. For shoes, shoppers mentioned that a high number of sellers advised to bring the shoes to a cobbler. For fridge and shoes, it is assumed that bringing the defective product to a non-affiliated repair shop is at their own cost since it is outside of the legal guarantee. For both products, for some of the shoppers no clear repair options were given at this stage of the process, they first had to provide more details such as receipt, invoice, and serial number. For phone, 56% of the retailers offered to return the product to the shop where the repair will be done by the seller.

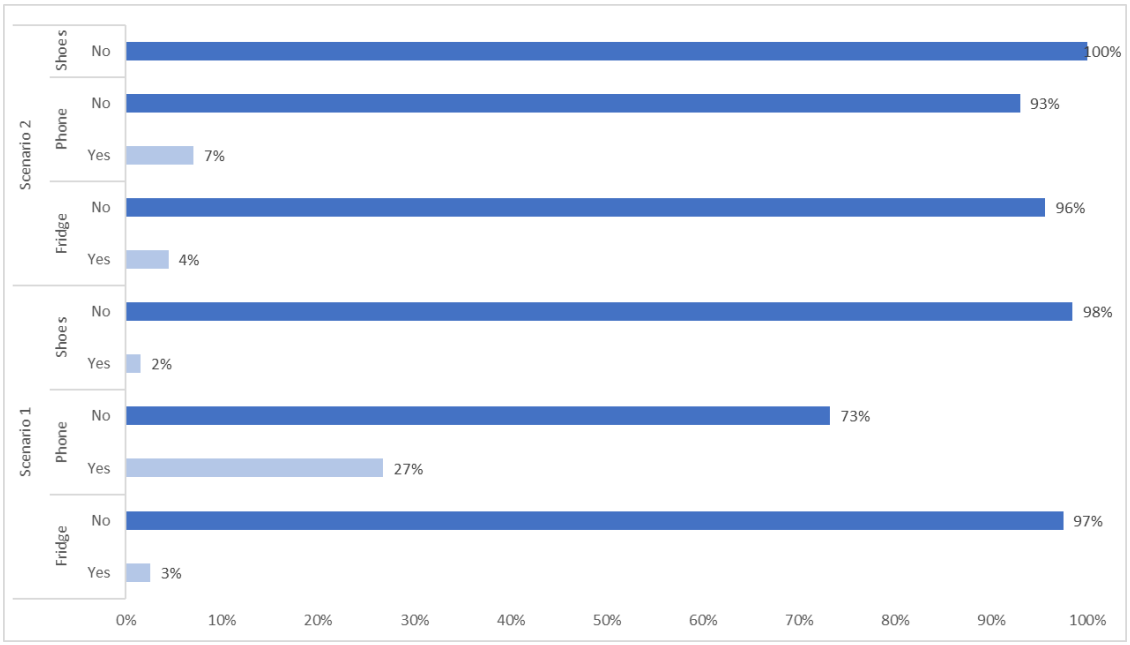
Figure 104 - What repair options were offered? - Scenario 2



The observation grid asked among the shoppers that got offered a repair solution if repair was the first option proposed by the seller. In both scenarios and for all the different products, between 88% and 96% of the shoppers answered yes. Among these shoppers, the majority also answered that the seller did not offer them a replacement product during the repair period. Except for phones in Scenario 1, 27% of the shoppers were offered a replacement. When asked to specify, the shoppers that were offered a replacement during the repair period explained that it is possible to rent a replacement phone or with a refundable deposit. In the case of fridge, a replacement would be offered only if the repair takes longer than one day. One fridge retailer mentioned that replacement should be offered by the manufacturer directly.

Regarding the duration of the repair, under scenario 1 only nine shoppers gave a duration time in days for phones which ranged between 1 day up to 30 days and one shopper said that for shoe repair it will take up to 30 days. Under scenario 2, for fridge the average repair time is 7 to 14 days. While for phones, the repair duration varies from 30 minutes to up to 14 days. Lastly, for shoes it varies from 1 day to 30 days.

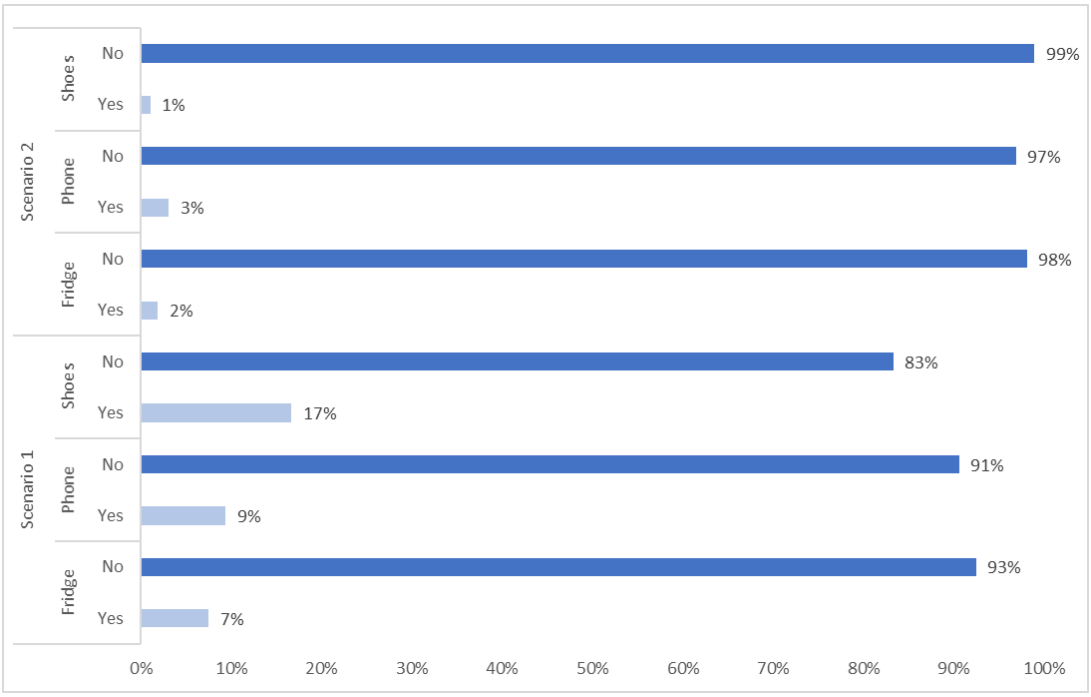
Figure 105 - Were you offered a replacement product during the repair period?



Replacement

As shown in the Figure below, most of the retailer did not offer a replacement option. Yet, there is a difference between scenario 1 and 2. Under the legal guarantee, a higher percentage of seller offered replacement to the shoppers. For shoes, there is a 16-percentage point difference between scenario 1 and 2.

Figure 106 - Did the retailer offer the replacement option?

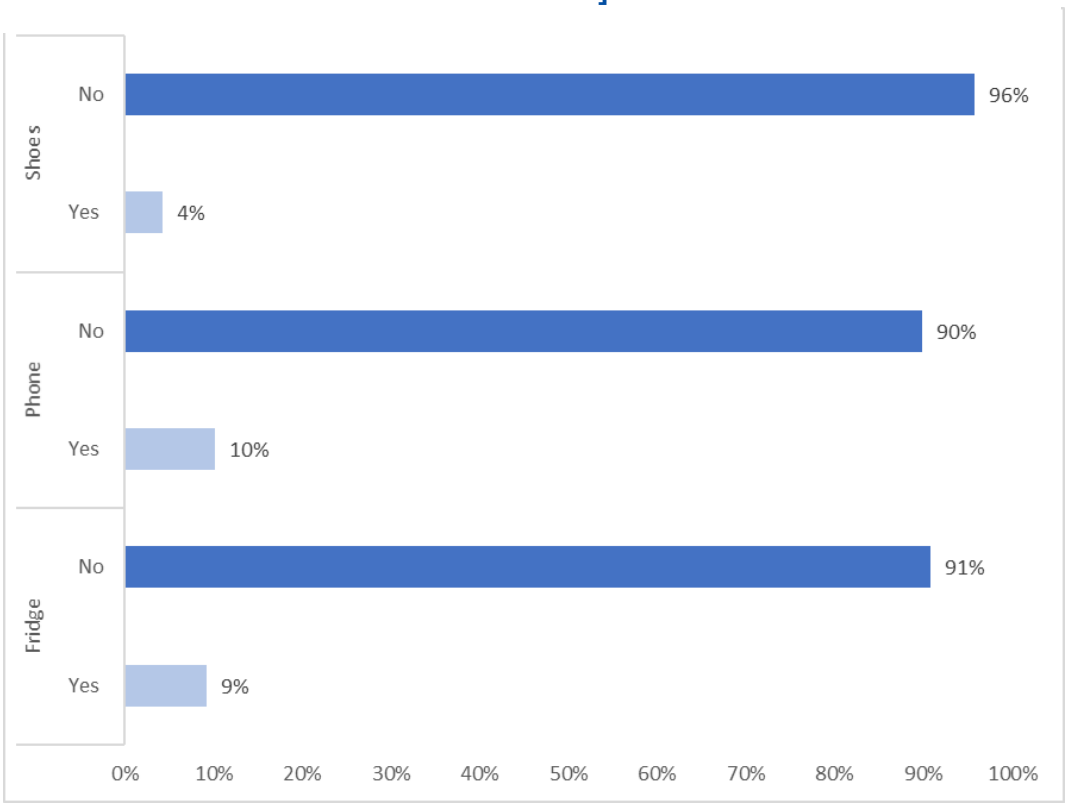


Among the shoppers that got offered a replacement option, the main reason invoked for not offering repair is that the product was not repairable. The second most mentioned reason is that it is not financially convenient. One other reason mentioned by the shopper is also that the shop did not have a repair service.

The shoppers that were offered a replacement option where also asked if they were offered a new or refurbished product. Under scenario 1, a high percentage were offered a new product for fridge (88%) and for phone (80%), for the 12% of the shoppers for fridge and 20% for phone, the retailers did not specify the type of product. In scenario 2, only a very small number of shoppers (one for fridge, three for phone) answered the question, the results are not significative.

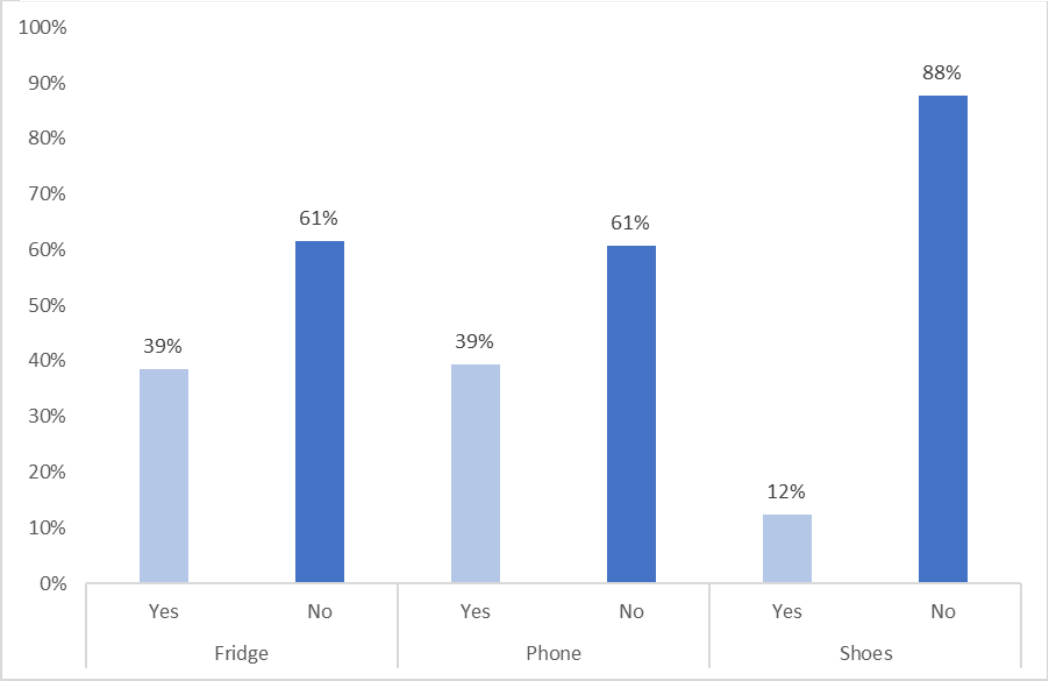
In Scenario 2, the shoppers were asked if the retailer encouraged them to buy a new product. The results in the Figure below show that overall, the retailers did not encourage the shopper to buy a new product. In the case that the retailer did encourage, the main argument used was that buying a new product is more advantageous economically compared to repair, especially for phones and fridges.

Figure 107 - Did the retailer encourage you to buy a new product? [only for scenario 2]



Lastly, the shoppers asked the retailers if they collect/recycle products. As shown in the Figure below, for shoes most of the sellers did not collect or recycle defective products. It is more contrasted for fridge and phone retailers with 61% of the retailers not collecting or recycling defective products.

Figure 108 - Does the seller collect/recycle defective products?



2.8. Stakeholder interviews

This chapter presents the method used for stakeholder interviews, including the questionnaires used.

2.8.1. Method

In total 21 expert and stakeholder interviews were undertaken as part of this study. Several additional stakeholders provided written input to interview questions. The interviews were conducted in two waves. The first wave interviews focused on the problem definition and the description of the market analysis whereas the results of the second wave of interview fed into the impact assessment.

First wave of interviews

Preliminary interviews were performed with the aim of scoping the main aspects of the research tasks. Moreover, the objective was to lay the groundwork for the main literature and data gap analysis.

Therefore, for guaranteeing a well-structured and targeted data collection, preliminary interviews were conducted with general academic practitioners and experts. Interview partners were selected in accordance with the research tasks

of this study. Consequently, the research team primarily selected interview partners whose expertise related to one or more of the following subjects:

a) useful life of consumer goods;

b) behavioural perspectives of product lifetime; and

c) the value chain for repair, refurbishment, and second-hand sale as well as current market practices.

Table 30 provides an overview of the experts who have been contacted for interviews. Furthermore, for each of the experts, the table indicates the main subject on which the respective expert was interviewed (or contacted). However, it should be noted that most experts revealed a broad research focus and hence, many interviewees were able to provide relevant data and information on multiple subjects.

Table 30 - Experts who provided input to this project during the first wave of interviews

Institution	Main subject	Relevance
University of Delft (Netherlands)	Useful life of consumer goods, information used for problem definition	Member of PLATE platform
Nottingham Trent University (United Kingdom)	Useful life of consumer goods, information used for problem definition	Member of PLATE platform
Aalto University (Finland)	Useful life of consumer goods, information used for problem definition	Member of PLATE platform
Fraunhofer IZM Berlin	Useful life of consumer goods, information used for problem definition	Project leader of PROMPT project
Lund University (Sweden)	Behavioural perspectives of product lifetime, information used for problem definition	Based on recommendation by other experts Research focus on product repair and environmental policy and regulation.
RREUSE	value chain for repair, refurbishment and second-hand sale, information used for market analysis and problem definition	RREUSE is an international network representing social enterprises active in re-use, repair and recycling
University of Delft (Netherlands)	value chain for repair, refurbishment and second-hand sale, information used for market analysis and problem definition	Research focus on design approaches for repair, remanufacturing and reuse.
Right to Repair Europe	value chain for repair, refurbishment and second-hand sale, information used for market analysis and problem definition	EU wide campaign to promote repair
Runder Tisch Reparatur	value chain for repair, refurbishment and second-hand sale, information	German initiative to promote repair

Institution	Main subject	Relevance
	used for market analysis and problem definition	

12 experts provided input to this project via interview or e-mail. Interviews were performed with 9 different experts, while 3 experts provided information and data via e-mail. Furthermore, 5 experts were not available for an interview while another 2 did not respond to the interview request. It should also be noted that in some cases, interviews were attended by multiple experts of an institution.

The preliminary interviews were conducted in a semi-structured manner to allow for the identification of wide range of relevant data. The list of questions was developed in accordance with the subjects a) to c) also taking into consideration the expertise and research focus of the respective experts.

The list of questions was provided to the interview partners in advance to enable sufficient preparation and reflection. In addition, interview partners were asked to provide input on relevant publications concerning the different subjects and further relevant experts and stakeholders who might be contacted for further consultation.

Second wave of interviews

In the beginning of 2022, additional interviews with more targeted questions were conducted. The second wave allowed to close the remaining gaps in the first draft of the report and to get first impressions on potential impacts of the proposed policy measures. Several experts who were identified in the first wave, were contacted again for targeted interviews on the specific topics related to the data gaps. Additionally interviewed stakeholders are listed in the table below. Independent Retail Europe (IRE) und European Furniture Industries Confederation (EFIC) replied via mail.

Table 31 - Experts who provided input to this project during the second wave of interviews

Institution	Main subject	Relevance
Restart Project (leading the repair.eu campaign)	Repair and refurbishment value chains, information used in chapter on "market analysis"	EU wide campaign to promote repair
Backmarket	Repair and refurbishment value chains, information used in chapter on "market analysis"	Leading provider of refurbished goods
Vangerow GmbH	Repair and refurbishment value chains, information used in chapter on "market analysis"	Repair service provider
The European Federation for Furniture Retailers (FENA)	Repair and refurbishment value chains, information used in chapter on "market analysis"	Industry Association with focus on furniture
BEUC – European Consumer Association	Policy measures	Consumer organisation
Eurocommerce	Policy measures	Business organisation
Ecommerce	Policy measures	Business organisation
European Environmental Bureau (EEB)	Policy measures	Network of environmental citizens' organisations

Institution	Main subject	Relevance
APPLiA - Home Appliance Europe	Policy measures	Business organisation
Reparably	Policy measures	Label / certification organisation
Free ICT Europe	Policy measures	Business organisation
The Restart Project	Policy measures	NGO

2.8.2. Questionnaires

Interview guide 1:

This document represents an overall overview of all potential questions. However, questionnaires will be adapted prior to sending them out depending on the expertise of the respective stakeholder.

Short introduction to the project

The purpose of the study is to contribute to the Commission's work focused on fostering the consumers' role in sustainable consumption by ensuring that goods are used for as long as they can.

Based on a literature review and a first round of expert interviews we have identified the main drivers contributing to the premature obsolescence and the short consumption lifetime of goods. For analysing these drivers and related problem aspects, we have focused on eight different product categories. The next step for supporting the Commission's policy development on this subject is to close existing data gaps, especially regarding the future evolution of the problem of premature disposal and the repair market.

We are aware that you cannot contribute to every single one of these points or to every single question. Nonetheless, we have listed the most relevant data gaps and are grateful for any information.

Evolution of the problem of premature disposal within the next 10 years

The objective of the questions under this section is to examine how the problem of premature disposal is likely to develop within the next 10 years, i.e., will premature disposal still be a relevant problem for the product categories analysed (see product categories below). Therefore, we are interested in investigating the future development of different aspects and drivers which are likely to affect the problem of premature disposal.

Assessed product categories:

- Mobile phones

- Televisions
- Refrigerators
- Laptops
- Clothing
- Shoes/footwear
- Cars
- Wooden furniture

1) General trends and developments concerning the problem: **Which general developments will affect the evolution of the problem of premature disposal within the next 10 years?** Think of, for instance:
   . Overall development of the repair market/second-hand market

2) Product-specific trends and developments: **On a product-specific basis, do you foresee any developments/trends that are likely to reinforce or reduce the problem of premature disposal in the next 10 years?** Think of, for instance:
   . Planned or foreseeable EU policy measures (e.g. Ecodesign, Consumer Law, etc…)
   a. Specific drivers such as product design, (convenient) repair infrastructure, availability of spare parts, consumer behaviour (knowledge, preferences, trust in repair, acceptance of second-hand goods)

   [during the interviews: outline our assumptions and/or give some examples]

3) To what extent will this development/trend reduce or reinforce the problem of premature disposal within the next 10 years?
   Is it likely that the development/trend will lead to the "disappearance" of the problem in the next 10 years?
   . What is the time frame of those trends/developments?

   [during the interviews: outline our assumptions and/or give some examples]

4) Can you share any literature supporting these assumptions or recommend any further experts we should consult regarding the future evolution of the problem?

5) What would be the potential impacts of introducing a horizontal right to repair? Think of, for instance: economic, environmental and social impacts, impacts on consumers

6) **What would be the potential impacts of extending the legal guarantee period?** Think of, for instance: economic, environmental and social impacts, impacts on consumers.

Repair market

The objective of the questions under this section is to better understand the actors, activities and contractual agreements within the current repair services market (focus EU).

With regard to product repair <u>within</u> legal guarantee, what contractual agreements are typical between

a. manufacturers and retailers
b. manufacturers and repairers
c. retailers and repairers
d. retailers and spare parts providers (if not the manufacturer)
e. repairers and spare parts providers
f. What is the relationship between independent repairers and manufacturers/retailers?
g. Does any other contractual agreements are relevant in the repair services sector?

With regard to product repair <u>outside</u> legal guarantee, what contractual agreements are typical between

a. manufacturers and retailers
b. manufacturers and repairers
c. retailers and repairers
d. retailers and spare parts providers (if not the manufacturer)
e. repairers and spare parts providers
f. What is the relationship between independent repairers and manufacturers/retailers?
g. Does any other contractual agreements are relevant in the repair services sector?

Can you describe the repair process <u>within</u> legal guarantee for the following products? Please include the different actors and steps within a repair process in the description.

a. Mobile phones
b. Televisions
c. Refrigerators
d. Laptops
e. Clothing
f. Shoes/footwear
g. Cars

h. Wooden furniture

Can you describe the repair process <u>outside</u> legal guarantee for the following products? Please include the different actors and steps within a repair process in the description.

a. Mobile phones
b. Televisions
c. Refrigerators
d. Laptops
e. Clothing
f. Shoes/footwear
g. Cars
h. Wooden furniture

We learnt that some repairers offer guarantees on their repairs. We would like to address the following sub-questions in this regard:

a. Is this a practice within or outside <u>legal</u> guarantee?
b. Is this a practice within or outside <u>commercial</u> guarantee?
c. Is this a contracted repairers practice only or are independent repairers offering the same?
d. Is the guarantee usually given on parts, on labour, on whole products?

Are spare parts provided as a priority within legal guarantee or within commercial warranty cases (and as less priority outside guarantee)?

We heart that the following repair models exist. Do you make use of them? Which actors are involved in these models? Are they either limited to products within or outside guarantee?

a. Fixed price repair.
b. Repair services offered by re-use organisations.
c. Exchange repair service.

We identified three factors influencing the decision for repair and against replacement (price and availability of spare parts, price of repair, price of original product).

a. Is this true to the same extent to manufacturers, retailers, repairers and consumers?
b. What is the major reason for you (if being repairer) to decide against repair?

At what proportion do you replace products instead of repairing them (e.g. answer in percentage)? Please differentiate between the following product groups:

a. Mobile phones
b. Televisions
c. Refrigerators
d. Laptops

e. Clothing
f. Shoes/footwear
g. Cars
h. Wooden furniture

What do you do with products (if being repairer, repairing retailer or manufacturer) that cannot be/are not worth being repaired? Please differentiate between the following product groups:

a. Mobile phones
b. Televisions
c. Refrigerators
d. Laptops
e. Clothing
f. Shoes/footwear
g. Cars
h. Wooden furniture

Would you agree that there is a lacking (convenient) repair infrastructure in Europe? What is the major reason for this? Is the lack different for the different product groups?

a. Mobile phones
b. Televisions
c. Refrigerators
d. Laptops
e. Clothing
f. Shoes/footwear
g. Cars
h. Wooden furniture

Do you assume that the current repair infrastructure could digest an increasing repair demand?

How do you expect the further development of the repair market and the repair infrastructure in the next 10 years?

Interview guide 2:

The aim of this wave of interviews is to test the impacts of different policy measures tested in our study. As not all measures are relevant for all stakeholders, only some measures will be discussed with some stakeholders. The split is proposed below per category of stakeholders:

Stakeholders	Measures
Producers organizations	Measure 1,4,5,6, 9,10

Retailers/distributors organizations	Measure 3,4,5,6,8,9
Consumers/consumers' associations	Measure 1,2,3,6,8,9,10
Standardization organizations	Measure 7,8,9,10
NGOs	Measure 1,8, 9,10
Repair service provider organisations	Measure 1,2, 9,10
Labels/certifications	Measure 7,8,9
Others	Measure 1 – 10 (depending on the category)

Measure 1 Repair as the primary remedy

The remedies system of the SGD gives consumers a right to choose between repair or replacement, if the product they bought turns out to be defective within the liability period (of at least two years). Under this option the consumer would be only able to ask to replace the product within the legal guarantee period, if repair is not possible or would impose disproportionate costs on the seller

What do you think would be the likely **economic impact** of this measure? Think of:
- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*
- *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
- *environmental benefits*
- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
- *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
- *creation of new job opportunities*

– *reduction of overconsumption of goods*

Additional questions:

[For producers representatives]

Do you think this measure would give producers an incentive to develop products that are more easily repairable?

[For repair service providers representatives]

Do you think this measure could create new job opportunities in your sector? Think of:
– *Increase of demand for your service by consumers*
– *New investments for enterprises in your sector*
– *Increase of revenues for repair services*

[For NGOs]

What do you think would be the likely environmental impact of this measure? Think of:
– *Reduction of the amount of waste produced*
– *Reduction of greenhouse gas emissions*

[for Consumers' associations]

Do you think this measure adequately safeguards consumers' rights? Why?

Measure 2 Preference for repair in the proportionality test

The consumer can only choose between the remedies of repair and replacement, if the chosen one is not disproportionately costly compared to the alternative. For example, if a hinge of a fridge breaks down, the seller has a right to refuse to replace the whole fridge (if the consumers wishes to do so) as repairing the hinge costs substantially less than the replacement of the entire fridge.

Under measure 2, the current rule would be modified by specifying that the remedy of replacement would be disproportionate, if the costs of repair were lower or equal to those of replacement. As a result, if the costs of replacement were more expensive than the repair, the consumer could only opt for repair (the seller determines the remedy in this case).

What do you think would be the likely **economic impact** of this measure? Think of:
– *administrative costs*
– *adjustment costs*
– *Increase/decrease in sale of new goods*
– *Increase/decrease in sales of second-and / refurbished goods*
– *Increase/decrease in prices for consumers*
– *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
– *environmental benefits*

- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
- *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
- *creation of new job opportunities*
- *reduction of overconsumption of goods*

Measure 3 Interruption/Suspension of the legal guarantee period

During the legal guarantee period, consumers can choose whether they would like to have their defective product replaced or repaired. Some Member States extend the legal guarantee period by interrupting or suspending it when a defective product is repaired.

Interruption means that, the legal guarantee period starts anew once the remedy is offered. For example, if a consumer asked to repair the product, after repair a new legal guarantee period would start to apply. Suspension would mean that if the consumer decided to repair the defective product instead of replacing it, the duration of the liability period could be extended for the time during which the seller repairs the defective product.

What do you think would be the likely **economic impact** of this measure? Think of:
- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*
- *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
- *environmental benefits*
- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
- *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
- *creation of new job opportunities*
- *reduction of overconsumption of goods*

Measure 4 Extending the legal guarantee period

The SGD provides for an obligatory minimum 2-year period during which the seller is liable for a lack of conformity which existed at the time of delivery. This measure would extend the duration of the legal guarantee period beyond the current minimum two years for new goods.

What do you think would be the likely **economic impact** of this measure? Think of:
- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*
- *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
- *environmental benefits*
- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
- *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
- *creation of new job opportunities*
- *reduction of overconsumption of goods*

Measure 5 Extending the burden of proof period

Under this measure, the period during which the product is presumed to be defective at delivery (current period is 1 year) would be extended for new goods.

What do you think would be the likely **economic impact** of this measure? Think of:
- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*

– *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
– *environmental benefits*
– *the amount of waste produced*
– *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
– *incentivize consumers towards repair rather than repair*
– *impact their purchase habits*
– *switch their attitudes towards second-hand or refurbished goods*
– *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
– *creation of new job opportunities*
– *reduction of overconsumption of goods*

Measure 6 Aligning the liability period for second-hand goods to newly produced goods

Current rules under the SGD provide a possibility for Member States to allow consumers and sellers to agree on a shorter liability period for second-hand goods (however not less than 1 year). Under this measure, the exception would be removed. As a result, consumers would enjoy the same length of the liability period for both new goods as well as second-hand goods.

What do you think would be the likely **economic impact** of this measure? Think of:
– *administrative costs*
– *adjustment costs*
– *Increase/decrease in sale of new goods*
– *Increase/decrease in sales of second-and / refurbished goods*
– *Increase/decrease in prices for consumers*
– *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
– *environmental benefits*
– *the amount of waste produced*
– *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
– *incentivize consumers towards repair rather than repair*
– *impact their purchase habits*
– *switch their attitudes towards second-hand or refurbished goods*

– *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
– *creation of new job opportunities*
– *reduction of overconsumption of goods*

Additional questions:

Do you think that this measure would increase the number of costumers that purchase second-hand goods?

Measure 7 Aligning the legal guarantee period for refurbished second-hand goods with new goods

As an alternative to measure 6, the current exception could be maintained partially. However, Member States could not allow consumers and sellers to agree on a shorter liability period for refurbished goods.

It must be noted that at the moment, the concept of refurbished goods is for the moment only defined in France. On the basis of the existing laws, market practice and literature, the study proposes also a definition of refurbished goods.

What do you think would be the likely **economic impact** of this measure? Think of:
– *administrative costs*
– *adjustment costs*
– *Increase/decrease in sale of new goods*
– *Increase/decrease in sales of second-and / refurbished goods*
– *Increase/decrease in prices for consumers*
– *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
– *environmental benefits*
– *the amount of waste produced*
– *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
– *incentivize consumers towards repair rather than repair*
– *impact their purchase habits*
– *switch their attitudes towards second-hand or refurbished goods*
– *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
– *creation of new job opportunities*
– *reduction of overconsumption of goods*

[for Labels/certifications]

Do you think this measure would require official certificates of conformity to determine when a good can be defined as refurbished?
Do you see any major issue related to that? If yes, why?

Measure 8 Refurbished goods used as a replacement

If the product is defective, the consumer can ask to have it repaired or replaced. The current practice and interpretation in Member States of the implementation laws of the CSGD seems to be that sellers replace defective goods with a brand-new product.

Under this measure, the seller would be allowed to offer a refurbished good as a replacement instead of a new one.

What do you think would be the likely **economic impact** of this measure? Think of:
- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*
- *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
- *environmental benefits*
- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure on consumers? Think of how it could:
- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
- *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
- *creation of new job opportunities*
- *reduction of overconsumption of goods*

[for Consumers' associations]

Do you think this measure would be well accepted by consumers? Why?
Do you see any prejudice by consumers against second-hand and refurbished products interfering with the implementation of this measure?
Do you think consumers would perceive a replacement with a second-hand or refurbished good positively or negatively? Why?

Measure 9 Right to Repair

The measure would consist of the introduction of a horizontal right to repair for consumers. Under such a horizontal right to repair, the consumer would be able to ask the producer or the seller to have the defective product repaired for a reasonable fee for a determined period of time beyond the legal guarantee period. As opposed to the SGD, this right would apply to cases when the repair under the SGD is not available. This means that it would also cover defects that appear during the legal guarantee period but are not covered by the SGD.

What do you think would be the likely **economic impact** of this measure? Think of:

- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*
- *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:

- *environmental benefits*
- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:

- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
  reduce the purchase of unnecessary goods

What do you think would be the likely social impact of this measure? Think of:

- *creation of new job opportunities*
- *reduction of overconsumption of goods*

Measure 10 Right to claim compensation

Introduction of consumer right to claim compensation from the manufacturer whose products do not comply with the reparability requirements (availability of spare parts and repair manuals, disassembly possibility etc.) for the given product category.

What do you think would be the likely **economic impact** of this measure? Think of:

- *administrative costs*
- *adjustment costs*
- *Increase/decrease in sale of new goods*
- *Increase/decrease in sales of second-and / refurbished goods*
- *Increase/decrease in prices for consumers*
- *Increase/decrease of revenue for repair services*

What do you think would be likely **environmental impact** of this measure? Think of:
- *environmental benefits*
- *the amount of waste produced*
- *the use of raw materials*

What do you think would be the likely impact of this measure **on consumers**? Think of how it could:
- *incentivize consumers towards repair rather than repair*
- *impact their purchase habits*
- *switch their attitudes towards second-hand or refurbished goods*
- *reduce the purchase of unnecessary goods*

What do you think would be the likely **social impact** of this measure? Think of:
- *creation of new job opportunities*
- *reduction of overconsumption of goods*

Additional questions:

Do you think this measure would incentivize producers to develop more repairable goods?
Do you think this would have a positive or negative impact on your business? Why?

[for Consumers' associations]

Do you think this measure would change consumers' attitudes towards repairability?

[for Standardization organization]

What kind of barriers if any do you see to successfully implement this measure? Think of
- *Legal barriers*
- *Economic barriers*
- *Resistance coming from producers, manufactures, etc.*

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