



Behavioural Study on Consumers' Engagement in the Circular Economy

Final Report - ANNEXES
October 2018

Specific contract – No 2016 85 06
Implementing Framework Contract –
CHAFEA/2015/CP/01/LE



ConPolicy

Institute for Consumer Policy



LE Europe, VVA Europe, Ipsos, ConPolicy, Trinomics
October 2018

Justice
and Consumers

EUROPEAN COMMISSION

Directorate-General for Justice and Consumers

Directorate E - Consumers

Unit E1 - Consumer Policy

Contact: Jeroen Van Laer

E-mail: Jeroen.VAN-LAER@ec.europa.eu

European Commission

B-1049 Brussels

Behavioural Study on Consumers' Engagement in the Circular Economy

Final Report - ANNEXES

October 2018

TABLE OF CONTENTS

1.	RESEARCH QUESTIONS OF THE STUDY	5
2.	CIRCULAR ECONOMY BUSINESS MODELS UNCOVERED DURING THE STUDY.....	7
2.1.	Evidence from the literature and data collection	8
2.2.	Evidence from the stakeholder interviews.....	9
2.3.	Concrete examples of business models	10
3.	OVERVIEW OF EXISTING POLICY INITIATIVES AND POTENTIAL IMPROVEMENTS SUGGESTED BY STAKEHOLDERS	16
3.1.	Evidence from the literature and data collection	16
3.2.	Evidence from the stakeholder interviews.....	22
4.	STAKEHOLDER INTERVIEWS	24
5.	STAKEHOLDER INTERVIEW GUIDE.....	27
6.	FOCUS GROUP DISCUSSION GUIDE.....	36
7.	ADDITIONAL SURVEY RESULTS	52
8.	MEASURING WILLINGNESS TO PAY	66
8.1.	Choice modelling	66
8.2.	Data analysis	67
9.	ALLOCATION INTO TREATMENT VARIANTS AND CORRELATION.....	69
10.	REGRESSION ANALYSIS	73
11.	EXPERIMENT INCENTIVES	75

1. Research questions of the study

Overall

1. What kind of drivers, barriers and trade-offs do consumers face when making CE-related decisions, such as whether to purchase a more durable or repaired good, whether to have a good repaired, or whether to discard it and get a new one?

1a. Which is the relative importance of the different economic, social or psychological factors, including time scarcity, social pressure, satisficing, etc., which determine consumers' degree of engagement in CE practices?

2. To what extent do such trade-offs constrain consumers' decisions to engage in CE practices?

2a. To what extent are such barriers and trade-offs horizontal or product (group/category) specific?

2b. What is the level of consumers' willingness or resistance with respect to engaging in a more Circular Economy?

Durability

3. What are the drivers and barriers of consumers' decisions to purchase more durable goods and what is their relative importance across products or product groups/categories?

3a. What are the consumer expectations about "durability" across products or product groups/categories?

3b. What do consumers understand by "durability" in view of consumers' heterogeneous interpretation of the concept (e.g. related to 'optimal' lifetime across products or product groups/categories, number of years before failures, or survival of the product under severe stresses) which may not fit well with the interpretation of product designers (i.e. mostly related to the delivery of certain functions under standardized use conditions)?

3c. Are consumers aware of the durability of products and their components (so to speak, what is their level of "durability" literacy)?

3d. To what extent does the degree of awareness of durability of products and their components vary across products or product groups/categories?

4. At which moment and how do consumers expect to obtain durability-related information? From marketing materials, labels, product descriptions, operating instructions, extended commercial guarantees? From manufacturers, retailers, consumer associations, dedicated webpages or social media?

4a. To what extent do consumer expectations vary, regarding durability-related information, across different products or product groups/categories?

4b. Which are the after-sales expectations of consumers if durability-related information is provided? What is the level of consumers' after-sales expectations before/at the moment when durability-related information is provided?

4c. To what extent and under which conditions would consumers expect free repair (or other remedies e.g. replacement, refund etc.) if the product breaks down within the indicated durability period? To what extent would consumers trade the different remedies against each other?

4d. How much do expectations vary across products or product groups/categories?

5. How should durability-related information be presented in order to reach out to allow informed purchasing decisions, to motivate more sustainable consumer choices, overcoming satisficing?

5a. Which concrete parameters/time periods of durability trigger consumer decisions?

5b. How should durability-related information be presented to better frame expectations regarding quality and lifetime cost³⁸ for consumers, across products, or product groups/categories?

6. Which EU level policy tools could be envisaged to encourage consumers buying more durable products?

6a. How could these EU level policy tools be further developed and implemented in the short and medium term?

Reparability

7. What are the drivers and barriers of consumers' decisions to have a good repaired instead of disposing of it, and what are their relative levels of importance, across products or product groups/categories?

7a. What are the consumer expectations about reparability across products or product groups/categories?

7b. What do consumers understand by "reparability"?

7c. Are consumers aware of the existence of repair services for the products they buy or own? To what extent do they consider the existence of repair services as important criterion in their purchase decisions? To what extent does the degree of awareness/importance vary across products or product groups/categories and consumers' social identities?

7d. What are consumers' expectations about repair services? How well are expectations related to ease and convenience of repair services met? To what extent do consumers find existing repair services efficient, consumer friendly and of good quality?

7e. What are the drivers and barriers concerning "self-repair" (e.g. impossibility to remove certain components, lack of time/expertise etc.)?

8. To what extent do consumers consider the degree of "reparability" of a product at the moment of purchase, and if so, how do they go about finding this information? How does this affect their purchase decision?

9. Where do consumers expect to obtain reparability information? From labels, product descriptions, operating instructions, commercial guarantees? From manufacturers, retailers, repair professionals, consumer associations, dedicated webpages or social media?

9a. To what extent do consumers obtain such information from product description, operating instructions, retailers, repair professionals, dedicated webpages or social media?

9b. To what extent do consumer expectations regarding where to obtain reparability information vary across different products or product groups/categories?

10. Which are the after-sales expectations of consumers if reparability-related information is provided?

11. How and what type of reparability information should be presented in order to encourage consumers to access and engage with repair services or to stimulate self-repair where they experience defective product performance?

11a. What type of reparability information do consumers find to be most useful?

11b. How should reparability information be presented to better frame expectations regarding quality and price?

10. Which EU-level policy tools could be envisaged to motivate consumers to access and engage with repair services, or to stimulate self-repair where a defect occurs?

2. Circular Economy business models uncovered during the study

This section deals with new and cutting-edge business models. Contrary to the previous sections, this section only contains information from the literature review and data collection and stakeholder interviews. The remaining research strands did not collect information on business models. It begins with an introduction to circular business models in general, followed by sub-sections presenting the theoretical background for different kinds of business models. The last sub-sections present concrete examples of business models.

The adjustment of business strategy to more circular business models could create a significant impact on product lifetimes by encouraging **product design-for-environment strategies**, thus lowering replacement frequency and reducing negative environmental impacts (Wilhelm, 2012). European businesses need a shift to **service-based business models**, where consumption is more focused on services like reparability and recycling rather than on consumption of new products. This new way of business model will boost the shared use, reuse, repair, and remanufacture of products. Governments can help product-service systems to overcome the possible barriers to market entry and become established by creating opportunities for new practices to develop and improve.

The rise of collaborative consumption indicates an **increasing consumer preference for having access to a product rather than owning it**. Developments in the field of the Internet of Things (IoT) provide solutions to the technical challenge of monitoring the location, status, and quality of the assets in use in the product-service system. The growth of the home delivery market linked to online retail provides opportunities for organising reverse logistics, enabling manufacturers to collect their assets during or at the end of a service contract (European Environment Agency, 2017). This includes placing the responsibility for repair with the producer or manufacturer, who retains ownership of the product, rather than with the consumer.

In particular, the model of **product-services systems (PSS)**¹ is a feasible alternative to the traditional, linear economic model, based on a "take-make-consume-throw away" pattern. PSS utilises schemes such as renting, upgrading, redesigning, and lending to reduce reliance on natural resources while concurrently increasing product quality and longevity as well as customer satisfaction. The clothing industry is one of the sectors especially in need of innovative business models that could reduce its environmental footprint and PSS may provide opportunities to do so. Moreover, clothing PSS may provide the industry with models that decrease redundant consumption (Cosette M. Armstrong, 2013). Moreover, consumers are showing an interest in PSS, rental, participatory design, and repair services. According to the literature, the potential added value of PSS to sustainable purchasing behaviour lies in the disconnection of value from material consumption. The main idea is to replace personal ownership and excess material consumption with alternative options, providing a mix of tangible products and intangible services.

The mobile phone industry is another sector that needs new business models based in the product-service system. However, the reviewed literature and interviewees did not mention the mobile phone industry is shifting toward this type of business model just yet. **More emphasis on after-sales service** would be required in order to shift consumers' sense of ownership to an alternative way of using products. This change in business model will motivate manufacturers to re-design mobile phones to extend their life-time. This strategy could have a significant impact on product lifetimes by

¹ PSS is an alternative business model to the linear economic one. It aims to reduce the use of resources and be more environmentally-friendly by mixing services with products offer to satisfy consumers' needs. In this schema, ownership will be replaced by alternative utilization of the product such as renting or lending. For instance, producers may offer a maintenance service in complement to the good. At the end, such strategy will reduce waste by closing the material loop.

encouraging product design-for-environment strategies, thus lowering replacement frequency and reducing negative environmental impacts (Wilhelm, 2012).

Key findings

- The reviewed literature and interviewed stakeholders highlighted that **certain business models in the Circular Economy are already in place**, particularly in countries such as the UK and the Netherlands. For instance, business models such as repair-café, first founded in the Netherlands, and clothes recycling business models are highly popular in the UK.
- The reviewed literature highlighted the following types of circular business models as important: **collaborative business models that mainly consist of peer-to-peer (P2P) and business to consumer (B2C) online platforms**, which are characterised by network-based business models; **product design-for-environment strategies such as modular design** - a design approach that subdivides it into smaller components that can be created independently and then used in different arrangements and as different individual functioning systems; **product-service-systems (PSS)**, in which producers/retailers offer a maintenance service to complement the product; **upcycling business models** that involve using materials or products that are at the end of their life cycle to make better materials or products of higher quality or greater utility and; **repair services or networks such as repair cafes** that are free meeting places where experts help visitors on a voluntary basis to repair their broken goods.
- Interviewed stakeholders have stated that **the denim industry was leading in reparability business models in the clothes sector**, but that there was a lack of high-value recycling (fibre-to-fibre). They also discussed NGOs taking over the responsibility of recycling from manufacturers and producers, as well as the need for business models with longer-term consumer contacts and service agreements to accomplish customer retention. Regarding recyclability business models, stakeholders have discussed leasing and business models with reversed logistics.
- Lastly, Table 1 and Table 2 provide an overview of 11 leading reparability and recyclability business models identified through the literature review and stakeholder interviews.

2.1. Evidence from the literature and data collection

2.1.1. Reparability business models

The reviewed literature provided some insights on business models focusing on product reparability and the potential government role to improve low availability and poor visibility of repair services.

The concept of **modular design**: a design approach that subdivides a system into smaller modules that can be created independently and then used in different arrangements and as different individual functioning systems. Google, in particular, is adopting a business perspective in which modularity is used to offer mass-customised products. However, modular design is still a very small and niche trend. Existing smartphone manufacturers, for example, seem to favour incorporating modularity into a traditional business model, enabling them to maximise profits from selling components rather than selling only complete handsets (European Environment Agency, 2017, p. 17).

Another popular business model for repair is offered by the so-called **repair-café**. In just a few years, the Repair Café movement has grown substantially in Western Europe, with a total of 1,128 organisations. Repair Cafés are free meeting places where experts help visitors on a voluntary basis to repair their broken goods. The success of the first Repair Café in Amsterdam in 2009 prompted the start of the Repair Café Foundation. Since 2011, this non-profit organisation has provided professional support to local groups in the Netherlands and other countries wishing to start their own Repair Café. The popularity of the repair cafés in Amsterdam and the Netherlands has subsequently spread out over all of Western Europe, where it has become commonplace in most countries now (Duvall, McIntyre, & Opsomer, 2016, p. 7).

As discussed in section 4.1.2 of the main report, one of the principal barriers for consumers to let their broken goods be repaired is the low availability and poor visibility

of repair services. The government can play an important role in countering this by establishing networks to facilitate consumers finding repair services. The Scottish government already 'explores the potential for a **comprehensive repair-finding service or network** to make it easy to find where items can be repaired' (The Scottish Government, 2016, p. 20). This could be done for instance with the existing repair business model of the **tool library**, where people can share the tools they can miss and borrow the tools they need.

2.1.2. Recycling business models

The literature also threw light on recycling business models.

First of all, **the role of digital platforms** has been stressed. These digital platforms make it possible to understand shifting customer demands, to support mass customisation, and to develop alternative models of (co-)production and consumption (Joint Research Centre, 2017a, p. 14). All these are prerequisites for developing the necessary recycling business models.

An article in the *International Journal of Business and Social Science* names the developing of new business models that represent a **move to product-service systems and dematerialisation** with more emphasis on after-sales service as a profit centre as one of the key product lifetime extension strategies that should be used to move to a more durable system of production (Wilhelm, 2012, p. 29).

Another business model that works very well in the area of recycling is that of **online market places**. Over twenty years ago, eBay started by designing such a platform. Today, that model is more relevant than ever, and many competitors and spin-offs have entered the market. The online market places enable one product to have many lives. Buyers benefit from this with access to quality items at prices they can afford, sellers benefit by turning things they do not need into cash they can use, and the planet benefits by avoiding the environmental impact of producing new products (Duvall, McIntyre, & Opsomer, 2016).

One specific form of recycling is **upcycling**: using materials or products that are at the end of their life cycle to make better materials or products of higher quality or greater utility (Economische en Sociale Raad, 2015).

Another option is a business model not focusing on consumers, but rather on businesses which try to become more active in the Circular Economy. This idea was developed by the London Waste and Recycling Board (LWARB), which has established *Advance London*, a **Circular Economy business support programme**. This programme provides help and advice to businesses seeking to transition into Circular Economy business models or improve their existing Circular Economy business model (London Waste and Recycling Board, 2017, p. 11).

2.2. Evidence from the stakeholder interviews

2.2.1. Reparability business models

The interviewees also offered some insights on repairing business models, where they **largely confirmed** what we discovered in the literature about the topic.

A representative from a Dutch social enterprise active in the Circular Economy, stated that the **denim industry is leading** in reparability business models in the clothing sector, while also some models can be found in the sportswear industry. At the same time, **high-value recycling (fibre-to-fibre)** is almost non-existent, as there is no system for that currently in place. So, in the clothing sector recycling is rather inefficient and much of the original clothing is lost.

Another business model has been adopted by certain NGOs collaborating with organisations to transfer their responsibility to recycle. These **NGOs take the responsibility of recycling** over from producers, generally these are organisations which have social preoccupations (e.g. they hire people with low income or repair laptops and donate them to schools). A representative from a Romanian NGO referred to *Ateliere fara frontiere*, one such initiative which works in collaboration with big companies and recycles their laptops. In the Netherlands, this is an established business model, where

WeCycle is an NGO that organises the collection and recycling of electronic waste (so-called "e-waste"). This foundation works on behalf of electronic manufacturers and importers who have a legal responsibility (according to the European WEEE Directive) to collect and recycle waste electronic devices and energy-efficient lighting. According to a Spanish representative of a national recycling platform in charge of fulfilling the requirements of the WEE Directive, there are around 1,000 organisations/operators in Spain that collect and recycle waste from electrical and electronic equipment.

Another interviewee, a representative from a charity and independent think tank from the United Kingdom, argued that there is a need for **business models with longer term consumer contacts and service agreements to accomplish customer retention**.

2.2.2. Recycling business models

Little information was shared by interviewees on different types of recycling business models.

A representative from an NGO active in Brussels, talked about alternative business models where products remain in possession of the producer (in other words, **leasing**). In this type of business models, producers and manufacturers are in charge of product recycling. However, currently legislation is not always adapted to this and there are problems with insurance and legal accountability e.g. for malfunctions of second hand products.

Another interviewee, a representative from a UK NGO, stated that recycling right now is aimed too much at low-value recycling. The value of the recycled components is minimal as opposed to reusing parts or products. What is needed, therefore, are **business models with reversed logistics**, in order to get products back to the manufacturer who will reuse them. Additionally, more dialogue between designers and manufacturers with recyclers is needed to achieve this.

2.3. Concrete examples of business models

2.3.1. Reparability business models

The table below lists specific reparability business models as presented in the reviewed literature and interviews.

Table 1: Reparability business models

Name company	Sector	Source	Website	Country coverage
Bosch/Siemens	Washing machines	Interview with a Dutch representative from a public authority.	https://www.bosch-repairservice.com/DE_en/RepairCenter.xhtml	Europe ²
<i>They have their own specific repair service, which is exclusively authorised to perform repair on their products. They put a lot of energy in making sure that if the products break down, a repair will be done by this certified repair service, especially due to safety issues. This business model guarantees customer loyalty and encourages consumers to use the repair service rather than replacing the product straight away when a defect occurs.</i>				
Elektrosografie	Household	Interview with a representative	http://www.elektrosografie.be	BE

² Bosch has a centralized certified repair service.

Name company	Sector	Source	Website	Country coverage
	appliances	from a European consumer association.	ctrosocie.be/	
<i>This Belgian company collects machines from the Belgian recycle services and repairs these, after which they sell them to low-income houses with a one-year guarantee.</i>				
HP	Electronics	Duvall, McIntyre, & Opsomer, 2016	https://www.pintersupplies.com/maintenance-kits.html	Europe
<i>This technological company is committed to helping people extend the useful life span of its products, by freely sharing service manuals and providing a wide range of service options and product warranties that enable people to repair their devices and maintain product quality.</i>				
iFixit	Electronics	Duvall, McIntyre, & Opsomer, 2016	https://www.ifixit.com/	Europe
<i>They have developed a business model based on offering repair information, spare parts, and/or tools available to the public, so consumers have the resources they need to fix their electronic products. For more information on this, see section 6.1.4 of the main report.</i>				
Norsk Ombruk	Household equipment	Norden, 2015	https://www.norskombruk.no/	NO
<i>This small Norwegian company is active in the market of repair and resale of used household equipment such as freezers, fridges, stoves, and washing machines. They focus on reusing relatively new and thus also energy-efficient products, which ensures additional environmental benefits.</i>				
Nudie Jeans	Clothing	Interview with a representative from a consultancy focused on Circular Economy.	https://www.nudiejeans.com/page/this-is-nudie-jeans#repair	DE, ES, SE, UK ³
<i>This company is the first jeans company to integrate repair services into their business model, as they offer to repair your jeans for you and they provide YouTube tutorials on how to fix your jeans as well as encouraging self-repair.</i>				
Rapha	Sportwear and accessories	Montalvo, Peck, & Rietveld, 2016	https://pages.rapha.cc/service/repair-service	Europe

³ Nudie Jeans offers in-store repair services. In addition, an online Free repair kit is available.

Name company	Sector	Source	Website	Country coverage
<p><i>This is a rapidly growing company that sells cycle wear. Rapha backs their products up with long lasting guarantees and high standards of after sale service. They offer a free repair service for when a crash or accident has damaged a garment, or a failure as occurred, even after significant use. They also voluntarily sell their products with a 90-day warranty.</i></p>				
Regeneris	Electronics	Montalvo, Peck, & Rietveld, 2016	http://regenersis.de/	DE
<p><i>A global provider of diagnostics, repair, and data erasure services to the consumer electronic industry. They have an international network of repair centres, and provide product repair, refurbishment, parts management, and logistics for mobile, IT, home entertainment, and B2B infrastructure product vendors. Their business model is founded on a platform of services and innovation, which drives recurring income across multiple complementary lines of business.</i></p>				
Restart Project	Electronics	Duvall, McIntyre, & Opsomer, 2016	https://therestartproject.org/	UK
<p><i>This London-based project shares information and teaches skills to interested community members, often at free Restart Parties, with one simple goal: to help extend the lifespan of electronics and electrical equipment and in doing so, keep these products from becoming waste.</i></p>				
RICOH	Electronics	Interview with a representative from the German Federal Environment Agency.	http://www.ricoh.be/fr/	BE
<p><i>This company producing printers and imaging equipment remanufactures their own products and they offer products to consumers for lease.</i></p>				
Rusz	Household appliances	Interview with a German academic.	http://rusz.at/	AT
<p><i>This company has designed a label for reparability (Onsert Label). They take products apart and analyse how they are repairable and then give them a label based on that.</i></p>				

2.3.2. Recycling business models

The table below lists specific recycling business models as presented in the reviewed literature and interviews.

Table 2: Recycling business models

Name company	Sector	Source	website	Geographic coverage
Fair-phone	Electronics	Montalvo, Peck, & Rietveld, 2016	https://www.fairphone.com/fr/	BE, NL, UK ⁴ ,AT,DE, FR.
<i>Fairphone is a crowd-funded social enterprise. It aims to understand and inspire change in the electronics industry. Smartphones normally perform poorly in terms of durability, reparability, and upgradability, however the lifetime of Fairphone goods is around 2.5 times higher than that of average phones.</i>				
Globe-chain	Various	London Waste and Recycling Board, 2017	https://www.globechain.com/	ES, UK, FR.
This online re-use platform connects businesses with charities, other organisations, and individuals to enable them to reuse unwanted items. They have effectively created a global supply chain network which produces both a waste audit and social impact value for members. Their aim is to create local supply chains within a global community and to enable the redistribution of goods to social causes rather than sending them to landfill.				
H&M	Clothes	London Waste and Recycling Board, 2017	https://about.hm.com/en/sustainability/get-involved/recycle-your-clothes.html	Worldwide
<i>In 2013, this store launched their worldwide garment collecting initiative. You can drop off your unwanted garments, no matter what brand and what condition, in all H&M stores across the globe. Once the old garments have been dropped off in a store, their partner, I:CO, collects and sorts them into three categories: re-wear, re-use, and recycle.</i>				
Marks & Spencer	Clothes	London Waste and Recycling Board, 2017	http://www.marksandspencer.com/s/plan-a-shopping	AT, BE, DE, DK, ES, FR, IE, LU, NL, SE, UK
<i>This store offers customers the opportunity to drop off any unwanted clothing in their instore Shwopping boxes. Shopped items are resold, re-used, or recycled with the profits going to the Oxfam charity. They hope this project will help to develop a move away from "disposable" fashion where we throw away clothes when we do not like them anymore.</i>				
Mud Jeans	Clothing	Interview with representative from a repair	http://www.mudjeans.eu/lease-a-jeans/	Europe

⁴ Those countries only have Fairphone showrooms. The others have Fairphone sales points.

Name company	Sector	Source	website	Geographic coverage
		services' company		
<p><i>This Dutch circular denim brand seeks to close the loop on jeans production. Customers can lease jeans and return them for repair or recycling. The manufacturer retains ownership of their own products and consumers only pay for the performance, rather than for the raw materials that went into the product.</i></p>				
Norsk Gjenvinning	Waste	Norden, 2015	https://www.norskgjenvinning.no/	NO
<p><i>This leading waste management company offers waste and recycling services to businesses in Norway. Their aim is a business-driven shift towards a Circular Economy where doing the right thing for the environment also brings profitability, seeking to identify solutions that are positive for society, environment, and the economy. For example, together with Norsk Hydro and Nespresso, they have developed a solution for recovering Nespresso coffee capsules. The solution ensures a transition from incineration to 100% material recycling with coffee grounds are turned into biogas and aluminium is recycled into new aluminium.</i></p>				
O2	Electronics	Coats & Benton, 2017	https://www.o2recycle.co.uk/	UK
<p><i>The O2 Recycle programme offers customers money for their old phones. This encourages the reuse of older, still working phones that would otherwise be abandoned.</i></p>				
Samsung	Electronics	Interview with a representative from a consultancy focused on Circular Economy	http://www.samsung.com/uk/support/model/SEK-1000/XC	UK
<p><i>This company offers the Samsung Evolution Kit, addressed at people wanting software updates, without having to buy entirely new products. With this kit consumers can update their older model phones to the technical specifications of a newer model.</i></p>				
Tesla	Cars	Montalvo, Peck, & Rietveld, 2016	https://www.tesla.com/support/software-updates?redirect=no	Worldwide
<p><i>The motors and bodies of Tesla cars are designed in a way that clearly sets the product apart from other manufacturers in the sector. Tesla allows customers to upgrade components of their cars, allowing new functionality to consumers without having to replace the total car.</i></p>				
VIGGA	Clothing	Interview with representative from a repair services' company	https://vigga.us/hvordan-virker-det/	DK

Name company	Sector	Source	website	Geographic coverage
<p><i>This company acts as a circular subscription service, combining sustainability and fashion consumption in an innovative way. The main idea is based on a monthly subscription fee and the customer receives twenty pieces of designer clothes in his/her child's current size. When the child's clothes become too small, they can be exchanged for a new package one size bigger. The returned clothes are treated and checked for flaws in an environmentally certified, professional laundry, then the clothes repackaged and sealed with a quality stamp. The clothes are then delivered to the next customer. Test results show that the clothes can circulate up to 5-7 times.</i></p>				
Worn Again	Clothes	London Waste and Recycling Board, 2017	http://wornagain.info/	UK
<p><i>Worn Again is developing a chemical textile-to-textile recycling technology that will enable end-of-use clothes and textiles to be collected, processed, and made back into new yarn, textiles, and clothes.</i></p>				

3. Overview of existing policy initiatives and potential improvements suggested by stakeholders

This first part of this section provides an overview of the existing policy instruments at European level and their specific provisions related to reparability and durability. This is followed by potential points of improvement, as well as a snapshot of the main national best practices as identified in the literature review.

The interviewed stakeholders provided information on how to improve the current policy initiatives to enhance more durable behaviours as well as a greater use of repair services.

Key findings

- The reviewed literature and stakeholder interviews underlined the need to **combine different kinds of policy initiatives**. This approach would enhance consumer consumption of more durable goods as well as their participation in repair services.
- **No new policy tools to encourage consumers to buy more durable products or to engage more with repair services were mentioned**, neither in the literature nor by the stakeholders. All potential developments highlighted relied on the enforcement and further implementation of the existing instruments. The legal requirements to indicate products' durability should be presented in a clearer way and standardisation of minimum lifetime criteria for products should be promoted. Stakeholders agreed on the fact that durability and reparability should get a bigger place in the existing energy label requirements. Moreover, both the literature review and the stakeholders mentioned the need to raise awareness as well as to use economic incentives to enhance more durable consumption.
- **Policy initiatives identified as potential drivers to enhance consumers' use of repair services were based on the improvement of the existing instruments**. Provisions requiring information on the availability or costs of spare parts were mentioned in the literature. Requirements for enabling a better access to components or the extension of the legal guarantee were also pointed out. Stakeholders stressed the importance of more information on the availability of spare parts through regulation. They also insisted on the key role of VAT-rates as economic incentives to increase the use of repair services.
- It is noteworthy to mention that the literature review and the interviewees have also highlighted **national practices which could serve as inspirational examples for the European Union**.

3.1. Evidence from the literature and data collection

3.1.1. European policy initiatives

A legal framework relevant for the Circular Economy is already in place in the European Union.

The literature review (European Commission DG Environment, 2014) has especially emphasised a set of EU policy regulating instruments which are:

- Directive 2009/125/EC of the European Parliament and of the Council establishing a framework for the setting of Ecodesign requirements for energy-related products.
- Directive 1999/44/EC of the European Parliament and of the Council of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees was also mentioned for its guarantee features although it is not directly linked to the Circular Economy.
- Directive 2010/30/EU of the European Parliament and of the Council on the indication by labelling and standard product information of the consumption of energy and other resources of energy-related products.
- Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU

- Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment.
- Regulation (EC) No 66/2010 of the European Parliament and of the Council on the EU Ecolabel.
- Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market (Unfair commercial practices Directive 2005/29/EC -UCPD-).
- Directive 2006/66/EC of the European Parliament and of the Council on batteries and accumulators and waste batteries and accumulators.

European policy initiatives of relevance for durability.

This section presents specific provisions of European regulation designed to foster more durable consumption behaviours.

Under the framework of **Ecodesign Directive** 2009/125/EC, special requirements for vacuum cleaners have been implemented (Regulation (EU) No 666/2013). As from September 2014, a vacuum cleaner motor should last for at least 500 hours. This target will double their current lifespans (Barr C, 2015). Moreover, the number of burning hours for light bulbs has also been included as a mandatory requirement (Regulation (EU) No 1194/2012).

The **EU Energy Label** created by Directive 2010/30/EU also intends to orient consumers' purchasing decisions towards more durable products. It provides information such as energy consumption, water use, cleaning performance, size, noise and dust emissions and covers dishwashers, refrigerators, washing machines, televisions, ovens, vacuum cleaners, and heating and cooling appliances (Barr C, 2015, p. 11). In 2017, Regulation (EU) 2017/1369 was published. This Regulation replaced Directive 2010/30/EU and introduced a simplified energy efficiency labelling for products by rescaling the existing ones in order to ensure homogeneous rating scales. In addition, a new database of product labels will ease the comparison between energy efficiency of household appliances for consumers.

The **EU Ecolabel** as established by Regulation (EC) No 66/2010 indicates to consumers which products are the most environmentally friendly. Products fulfilling specific criteria are allowed to display the EU Ecolabel. The criteria are revised every four years so as to be the most up-to-date and cover the whole life-cycle of products/services, encompassing 29 distinct categories of products. As of September 2017, 2,130 licences were awarded for 54,115 products and services.

Certain specific criteria are set for rating products' environmental impact such as durability testing (BEUC, 2015, p. 9).

Directive 2005/29/EC on "**Unfair Commercial Practices Directive**" defines unfair business-to-consumer commercial practices prohibiting them in the EU. Unfair commercial practices are those which are contrary to the requirements of professional diligence and are likely to distort the economic behaviour of the average consumer (in particular, misleading practices). It defines misleading commercial practices as those which contain false information or are likely to deceive the average consumer, even though the information may be correct, and cause them to take a decision they would not have otherwise taken. Providing false information about the durability of the product would therefore be prohibited by the Directive. In addition, information about the durability of a product would be considered an element with a positive environmental impact influencing the consumers' decision, which would therefore be an environmental claim. Directive 2005/29/EC also covers environmental claims which refer to the 'practice of suggesting or otherwise creating the impression (in a commercial communication, marketing or advertising) that a good or a service has a positive or no impact on the environment or is less damaging to the environment than competing goods or services'⁵.

⁵ Commission Guidance document on the implementation/application of Directive 2005/29/EC on Unfair Commercial Practices, SWD (2016) 163 final, p.95.

The Commission Guidance document on the implementation/application of Directive 2005/29/EC on Unfair Commercial Practices clarifies how environmental claims (section 5.1) are covered by the Directive as well as planned obsolescence (in section 3.4.8) (European Commission DG JUST, 2016). As for the environmental claims traders must, above all, present them in a specific, accurate, and unambiguous manner and they must have scientific evidence to support these claims and be ready to provide it in an understandable way in the case that the claim is challenged. Similarly, for planned obsolescence, the Guidelines state that a trader who fails to inform the consumer that a product has been designed with a limited lifetime might, according to the specific circumstances of the individual case, be considered to have omitted to provide material information and, thus, be prohibited as an unfair commercial practice.

European policy initiatives of relevance for reparability

In this sub-section, policy initiatives aiming to foster consumers' use of repair services are described.

Directive 1999/44/EC foresees a **minimum legal guarantee** of two years and as such has indirect impact on the use of repair services from consumers. During this period, the consumer is entitled to a free of charge repair or replacement for a defect that was present at the delivery of the good (which is presumed to have been the case for those defects showing during the first six months after purchase).

In October 2017, the Commission adopted a proposal to repeal the existing minimum harmonisation of the **Consumer Sales and Guarantees Directive** 1999/44/EC and replace it with a full harmonisation Directive with an extended scope, covering both distance and face-to-face sales (DG Justice and Consumers, 2017). The proposal can contribute to a more Circular Economy in that it extends the period where the seller has to prove that no 'lack of conformity' (defect) existed at the time of delivery from the current minimum six months to two years. This would make the legal guarantee more effective in that it would make it easier for consumers to exercise their rights and could be an incentive to produce higher quality and more durable products. The proposal also clarifies that it complements sector-specific legislation such as the Ecodesign or Energy Labelling legislation which introduce product specific durability requirements. Furthermore, the legislative proposal applies a two-year legal guarantee period for second hand goods (currently this may be lowered to minimum one year under the minimum harmonisation) and fully harmonises a hierarchy of remedies where - in case of non-conformity - repair or replacement is promoted as a first remedy. The amended proposal is currently in the inter-institutional legislative process.

Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on **waste electrical and electronic equipment** sets incremental targets on several aspects: minimum rates for separate collection, recovery, and recycling/preparing for reuse. The minimum rate of separate collection has to progressively increase by 2019. From 2019 onwards, the target to be achieved annually is 65 % of the average weight of EEE placed on the market in the three preceding years or 85 % of WEEE generated on the territory of that Member State. Similarly, minimum recovery targets as well as recycling/preparing for reuse targets for individual product categories were set for 2015. These targets will increase by 2018 and new thresholds will be set for the post 2018 period (European Parliament, 2016).

Directive 2005/29/EC might be also applicable in cases where a **business provides false information about the reparability** of the product, affecting consumer's decision. In addition, information about the reparability of a product would be considered an element with a positive environmental impact and therefore be considered an environmental claim covered by the Directive 2005/29/EC.

3.1.2. Potential improvements of the EU policy tools identified in some studies and/or suggested by some stakeholders

The study commissioned by DG Environment of the European Commission which aimed to identify Circular Economy actions and priorities provides an **overview of the main policy initiatives which could overcome the barriers to the development of the Circular Economy** (European Commission DG Environment, 2014)⁶. Policy initiatives should focus on the development of regulatory requirements, encourage the awareness of the population about the Circular Economy as well as skills related to product design and production, enhance a change in consumption patterns, and foster investment in Circular Economy related activities.

In order to have the greatest impact, policy action should be targeted to specific sectors with the greatest circular potential. Based on outputs from the scientific literature, the sectors with the greatest circularity potential are: food packaging, electronic and electrical equipment, transport, furniture, and buildings and construction.

The transition towards a full Circular Economy requires 'a more holistic, integrated approach' by combining diverse instruments. The panel of measures should include regulation, economic incentives, and awareness raising tools (European Commission DG Environment, 2014).

According to the literature, another policy initiative which could help to promote durability and repair **is the reduction of the VAT-rate on repair services as an economic incentive** (BEUC, 2015).

As stated above, Directive 2005/29/EC prohibits unfair commercial practices, in particular **misleading practices, including environmental claims**. The UCPD in itself does not contain a definition of or specific rules for durability or reparability of products. However, false or deceiving information on durability and reparability may, under conditions set out in Article 6 UCPD, be qualified as misleading. Under the Directive information on the durability or reparability of the product could be considered an environmental claim which is also regulated by the UCPD. However, it should be made clearer that the requirements of the UCPD are also applicable to products being traded as performing better than others due to their durability and reparability, which have a positive impact on the environment.

3.1.3. Further proposals of some stakeholders to improve the EU policy tools on durability

According to S. Maurer and U. Pachl, a first way to enhance more durable behaviours would be to include the criteria of "durability" in the definition of "conformity" as stipulated currently in the 1999/44 Directive (BEUC, 2015).

The need to improve the EU Ecodesign Directive was especially highlighted in the literature. S. Maurer and U. Pachl for instance, **recommend that durability indicators foreseen under the EU Ecodesign Directive (Directive 2009/125/EC) should be presented in a clearer way** (BEUC, 2015). For instance, consumers may find it difficult to understand the meaning of the 500 hours of motor-lifetime in terms of years of expected lifespan. A more accurate information would also enable them to establish a link with the expected guarantee. Moreover, those durability considerations should be extended to all product categories (BEUC, 2015).

The scientific paper from the German Federal Environment Agency on the best political strategies to improve the durability of products **echoes these recommendations on the development of durability standards** (Federal Environment Agency, 2017). The authors highlight that product standards on minimum lifetime are needed and should be shaped by the EU Ecodesign Directive. The European Commission's Circular Economy Action Plan announced the aim to promote durability requirements under its future work

⁶ All the next developments are based on the same study: European Environment, DG environment, 2014. Scoping study to identify potential circular economy actions, priority sectors, material flows & value chains.

in the context of the Ecodesign Directive (European Commission, 2015). Moreover, a better synergy between the Ecolabel criteria and Ecodesign requirements would provide a greater impact on consumers' purchasing decisions (BEUC, 2015, p. 10).

The European Commission has drawn an Ecodesign working plan for the period of 2016 to 2019 which covers durability and reparability aspects as part of the plans for future action (European Commission, 2016). Different steps were identified among which: the review of existing instruments, the preparation of studies to incorporate potential energy-saving products under the Ecodesign framework, the monitoring of the enforcement of the existing regulations and future work on the establishment of harmonised requirements for durability (European Commission, 2016)

A second point identified by the literature is **to pay greater attention to the different categories of measures intended to increase the use-time and to combine them** (AK Wien, 2017). The first set of measures would aim to increase the use-time of a product by for instance: providing information about components which enable the longest possible use or trustworthy information about the technical and functional lifespan, together with information about weaknesses. The second category of measures would raise confidence in the expected lifespan. Finally, the last category of measures would combat marketing practices and incentive schemes which lead to lower the use-time (AK Wien, 2017).

A third point identified in the literature review is **the need to raise consumer awareness of durability and reparability**. Public authorities should educate consumers about their purchasing behaviours (Cooper, 2004). For instance, it could help to address psychological obsolescence in extending product service life on the part of the consumers (Federal Environment Agency, Scientific Opinion Paper - Obsolescence - Political strategies for improved durability of products, 2017).

The last point raised by the literature is about **tax rates, which could play an incentivising role**. An economic policy option identified would be to vary VAT rates by lowering the one applied to more durable products (BEUC, 2015).

3.1.4. Further proposals of some stakeholders for improvements of EU policy tools on reparability

As illustrated in section 6.1.4 of the main report, more information on reparability characteristics could play an incentivising role in consumers' purchasing decisions. For instance, implementing regulations under the **Ecodesign directive could include provisions requiring producers to inform consumers** on the availability of spare parts or on repair services. Information could also be provided on the costs of such parts (Federal Environment Agency, 2017). Maurer and Pachl agree that consumers must be informed whether spare parts are available and for how long they will be (BEUC, 2015).

For some electronics goods, the battery is not easily accessible which may hinder the consumers' ability to repair or self-repair them (BEUC, 2015). Directive 2006/66/EC provides requirements on the removal of batteries for certain electric and electronic equipment. For instance, appliances with incorporated batteries and accumulators shall be accompanied by instructions showing how they can be removed easily and safely.

The provisions of the **Consumer Sales Directive** (Directive 1999/44/EC) could also be strengthened by extending the period of consumer guarantees for instance, as is the case in some countries that have a longer guarantee period than the two years minimum legal requirement (BEUC, 2015).

Finally, **economic incentives were also identified as potential policy initiative in the literature review**. For instance, a tax measure discouraging the introduction to the market of goods which cannot be repaired could be foreseen (BEUC, 2015).

3.1.5. National policy initiatives

This section is dedicated to providing an in-depth summary of existing **national policy initiatives that have a significant role to play to change consumer behaviour**.

Under the **Consumer Sales Directive** (Directive 1999/44/EC), the **minimum legal guarantee** of two years is combined with a six-month period for the reversal of the burden of proof for the defect: only within the first six months, the product is presumed

to be defective from the date of delivery (and trader has to prove the contrary). Afterwards, it is the consumer who has to prove that the product had the defect already at the moment of delivery. Two countries, **Portugal and France**, have expanded the period for the reversal of proof from six months to two years (BEUC, 2015). In addition, Poland has raised that period to one year. The "Study on the costs and benefits of minimum harmonisation under the Consumer Sales and Guarantees Directive 1999/44/EC and of potential full harmonisation and alignment of EU rules for different sales channels" provides an overview of the possible costs/benefits of such period extension (ICF, 2017). Besides, no major increase in the price for the manufacturers was reported in countries with a guarantee period longer than two years neither for the ones with a period for the reversal of burden of proof going beyond six months (ICF, 2017).

France introduced a decree in 2014 to ease the repair of goods. Decree No 2014-1482 requires producers to provide information about the time period for which spare parts will be available (BEUC, 2015). France has also passed measures which aim to fight planned obsolescence (AK Wien, 2017). **Austria** has worked on better standardisation to present the durability/reparability features of a product. In this country, a technical standard has been developed to set label criteria for durable, repair-friendly designed electrical and electronic appliances (BEUC, 2015). To obtain such label, criteria have to be fulfilled such as a better accessibility of components or a design simplifying the repair. In addition, the Austrian "Nachhaltigkeitssiegel" initiative (Sustainability Seal) aims to help consumers make informed choices when buying appliances based on a product's quality and potential lifespan. The label distinguishes different performance categories ranked as "excellent", "very good" and "good". Criteria include: the availability of spare parts, easy disassembly and access to design documents for technicians. Manufacturers who want to apply the label to their products must submit their product for testing, the Austrian Standards Institute will determine if the product complies with the criteria (Deloitte, 2017).

In **Germany**, two supporting measures for social innovations were identified. A German Federal Ecodesign Award as well as an Ecodesign Kit. Since 2015, the German Environment Agency has been offering this "Ecodesign Kit" with information for students and teachers of product design on environmental performances of their products (Umwelt Bundesamt, 2017).

Finally, another national policy initiative stems from the literature: **the increase of awareness activities about CE practices**. Those educating activities can promote repair skills in school. According to a study on the factors impacting the demand for repair services, classes that teach repair skills expose students to valuable "do it yourself" skills that will allow them to self-repair and maintain household products (McCullough, 2009).

National guidelines on environmental claims

- A recent study by the European Commission shows that specific codes of conduct have been developed in several countries in order to complement the rules under the unfair business-to-consumer commercial practices (UCPD). Those codes of conduct also aim to ensure a more specific regulatory framework for environmental claims (European Commission, 2014). In most of the countries, there are general or sectorial guidelines developed by public authorities, private entities or trade associations to regulate the development of environmental claims while ensuring consumer's protection.

All guidelines require that environmental claims are presented in a truthful manner and are not based on false information (e.g. the characteristics of products and their environmental benefits). Moreover, the claims should be clear and accurate.

Most guidelines provide definitions of certain environmental benefits or characteristics that can be used by traders and advertisers in environmental claims in order to avoid confusion and prevent inaccuracy. However, requirements on durability or reparability of the products are not included.

3.2. Evidence from the stakeholder interviews

3.2.1. European policy initiatives

European policy initiatives on durability.

Overall, interviewees agree with the points raised in the literature review section (see section 7.1 of the main report): more durable consumption behaviours will be driven by a combination of different policy tools.

First, **European instruments should be further strengthened to promote durability purchases.** According to a representative from a German consumer association, durability should get a bigger place in the existing energy label requirements to prevent cheap products that do not last. An interview with a representative from an Irish NGO confirmed the findings of the reviewed literature stating that a clearer European energy label especially in the way information is presented would direct consumers' purchase towards more durable products.

A representative from a UK trade association underlined that under **the Ecodesign Directive**, the EU has set certain durability requirements. Setting such minimum requirements is likely to be easier than defining a scale of criteria. Regulation about design intended to produce more durable products could be better addressed at European level because of the relatively small size of the national markets according to a member of a British NGO. The EU's existing Ecodesign policy has been highly successful to date, delivering over 40% of Europe's 2020 energy efficiency target, according to a representative of an NGO from UK. However, it only covers energy efficiency and could be broadened to areas such as reuse, durability, and secondary material use.

Besides the improvement of existing EU regulations, interviewees underlined **the necessity to educate consumers about a more sustainable consumption.** Indeed, campaigns to raise awareness are key instruments to complement regulation in the words of an interviewee from a national French administration. A member of an Austrian consumer association even underlined that consumer education is the most important initiative that should be employed. According to a representative of a Dutch consultancy firm, educating consumers on the quality of the garment they are purchasing would help them to distinguish between more and less durable products. The focus could be put on explaining why it is of a concrete benefit to the consumer to adopt more durable consumption. Consumer awareness about the value of keeping products longer should be raised. A representative from a Belgian trade association also highlighted the issue of the lack of information for consumers in understanding the nature of the durability issue. There is a clear trade-off between keeping a product for a long time and the fast development of more energy efficient products. Thus, as products become more and more energy efficient, consumers will be more likely to buy those ones instead of keeping their previous item longer. Another interviewee from a Czech consumer association provided input on the kind of information needed for consumers. It seems that consumers would need to be more educated on the fact that better quality of the product goes with a higher price. Media should be more targeted as a channel to pass this kind of information.

The last policy initiative underlined by interviewees to enhance more sustainable consumption is an economic incentive. It can take the form of tax breaks targeted towards more durable goods for a representative of a Hungarian NGO. For instance, products coming from non-recycled materials should be more taxed.

European policy initiatives on reparability.

Different **potential regulatory interventions were highlighted by interviewees.**

Firstly, according to a German consumer organisation representative, producers should be asked to **take reparability into consideration in their product research and development budget.** Meaning that when designing and producing new products, reparability should play a role and products that are easier to repair should be developed and introduced in the market.

The second issue raised by interviewees was the **availability of spare parts.** A representative from a German national public authority stated that producers should

inform consumers about the availability of spare parts. The importance of a greater availability of spare parts was confirmed by a German expert. He agreed that a key incentive to use more repair services would be to force producers to guarantee the cheap availability of spare parts for a longer period of time. Moreover, the above-mentioned representative of a German national public authority also highlighted that manufacturers should inform consumers about the availability of spare parts and framework conditions for independent and licensed repair services. At the moment, some companies provide spare parts to all repair services while others only do this to licensed services that have a contract with them. A stakeholder who wanted to remain anonymous insisted on the importance of spare parts availability and prices.

The final area in which regulation could play a key role is the **length of the legal guarantee**. According to a Belgian NGO, the length of the guarantee could be extended from two to five years for certain products.

Overall, interviewees have pointed out **the key role of economic incentives, especially of VAT-rates, to enhance consumer participation in repair services**. A member of the Belgian NGO mentioned above confirmed the importance of having a lower VAT-rate for repair activities at the European level. A representative from a Swedish consumer association agreed that the VAT reduction is a good policy tool, but it should shift the importance from sustainability to repair. In Sweden, a lower VAT rate for repair services was introduced this year. Finally, a representative from a British NGO gave an indication of how EU rules about VAT could play a greater role on consumer decisions to repair goods. Indeed, EU rules allow a certain degree of flexibility for Member States to reduce VAT-rates and the Commission is currently considering granting more freedom to Member States on setting rates via its Action Plan on VAT. The Commission could consider expanding the list of goods and services to which the reduced rates may be applied. In particular, this could include activities such as repair services. It is worth noting, that one interviewee pointed out that for some products the costs of spare parts are more relevant than the (labour intensive) costs of the repair service. In those cases, economic incentives on repair services would be less efficient.

Economic incentives can also take the shape of what was labelled by a European trade association representative as **green public procurement**.

3.2.2. National policy initiatives

Two national examples of practices aiming to enhance Circular Economy practices were mentioned by interviewees.

The Waste Electrical and Electronic Equipment Directive (Directive 2012/19/EU) includes a preparing for reuse/reutilisation model with targets and obligations. According to a Spanish representative of a national recycling platform, **Spain** has gone further when transposing this Directive by including reuse and recycling components. First, the country imposes in addition to recycled rate, a rate that takes into account product characteristics. With regard to reuse components, the Directive ratios did not define a specific target, but Spain did. For instance, as for 2018, 3% of the total of a product category (for example large cold electro domestics) is going to be made from reuse components (Spanish Government, 2015).

A representative from an Austrian consumer organisation also mentioned an example coming from **Sweden**. There is a schema called "the repair bonus". VAT-rates are adjusted to make repair cheaper than replacement, this complies with the EU Directive on the common system of VAT-rates which already allows for VAT exemptions for minor repairs such as bicycles, shoes and leather goods, and clothing and household linen (European Council, 2006). An official from a Dutch Public administration underlined that the EU could take inspiration from this VAT-scheme.

4. Stakeholder interviews

Table 3: List of the 50 interviews

Organisation name	Scope	Category
The European Committee of Domestic Equipment Manufacturers (CECED)	EU	European trade and business/industry associations
ECOS	EU	European NGOs, in particular focusing on CE/sustainable consumption
EURATEX (European apparel and textile confederation)	EU	European trade and business/industry association
DIGITALEUROPE	EU	European consumer association
The European Consumer Organisation (BEUC)	EU	European consumer association
Union européenne de l'Artisanat et des petites et moyennes entreprises, aisbl (UEAPME)	EU	European trade and business/industry association
European Environmental Bureau (EEB)	EU	European consumer associations
Reuse and Recycling European Union Social Enterprises (RREUSE)	EU	European trade and business/industry associations
Waste Reduction Alliance (HuMuSz)	HU	National NGOs, in particular focusing on CE/sustainable consumption
CECED Hungary	HU	National trade association
ZERO	PT	National NGOs, in particular focusing on CE/sustainable consumption
Stiftung Warentest	DE	National consumer associations
Circle economy	NL	Other: specialised consultancy
Abteilung KonsumentInnenpolitik der AK Wien	AT	Consumer organisation
Technische Universität Berlin Zentrum Technik und Gesellschaft	DE	Academics specialising in consumer-related policy and behavioural economics
Ministry of Infrastructure and the Environment	NL	National public authorities
Federal Environment Agency (deutsche Umweltbundesamt , UBA)	DE	National public authorities
Rijksdienst voor Ondernemend Nederland (RVO, Netherlands Enterprise Agency)	NL	National public authorities

University of Bonn	DE	Academics specialising in consumer-related policy and behavioural economics
Bruxelles Environnement	BE	National NGOs, in particular focusing on CE/sustainable consumption
DIN-Koordinierungsstelle Umweltschutz and Repair network	DE	Other: technical expert, repair initiative and entrepreneur
Agoria	BE	National trade association
GO4CIRCLE	BE	National NGOs, in particular focusing on CE/sustainable consumption
Ministry of Finance	SE	National public authority
Community Reuse Network Ireland	IE	National NGOs, in particular focusing on CE/sustainable consumption
Ministry of the Environment of the Czech Republic	CZ	National public authority
The Czech Association of Consumers (dTest)	CZ	Standardisation/certification/verification bodies
Association of Social Responsibility	CZ	National consumer associations
Institut Cirkulární Ekonomiky	CZ	National NGOs, in particular focusing on CE/sustainable consumption
CECED CZ	CZ	National consumer associations
The Department for Business, Energy and Industrial Strategy (BEIS)	UK	National public authority
Waste & Resources Action Programme (WRAP)	UK	National NGOs, in particular focusing on CE/sustainable consumption
Association of Manufacturers of Domestic Appliances (Amdea)	UK	National trade associations
Knowledge Transfer Network	UK	Other (CE knowledge platform)
Green Alliance	UK	National NGOs, in particular focusing on CE/sustainable consumption
Consumer Studies & Quality Management Department Faculty of Business and Tourism Bucharest University of Economic Studies	RO	Other (CE technical expert)
EPTA	EU	European trade and business/industry associations
EUROCOMMERCE	EU	European trade and business/industry associations
Swedish Energy Agency	SE	National public authority
EMEA	BE	Company

ADEME	FR	National public authority
Organización de Consumidores y Usuarios. OCU Ediciones, S.A.	ES	Consumer organisation
Pro Consumatori Association	RO	Consumer organisation
Waste Technology, Energy & Resource Concepts	CH	Other (CE technical expert)
ERP	ES	Other (European Recycling Platform Spain)
ECOTIC	RO	National NGOs, in particular focusing on CE/sustainable consumption
Ecologic Group	RO	National NGOs, in particular focusing on CE/sustainable consumption
The Swedish Consumers' Association	SE	National consumer associations
Phillips Lighting	EU	Company
EMOTA	EU	European Trade and business/ industry association
SEB	FR	Company
One interviewee asked his responses to be anonymised		

5. Stakeholder interview guide

Guide for VVA researchers that undertake the stakeholder interviews

Project details



Objective: Provide policy insights to assist the implementation of the Circular Economy Action Plan. Particularly, insights on consumer attitudes and behaviour regarding the durability and reparability of products in order to inform possible future policy initiatives on Circular Economy at the EU, national or regional level.

Structure:

- Task 1: Preparatory phase
 - a. Activity 1 – Literature Review (VVA)
 - b. Activity 2 – Desk Research (VVA)
 - c. Activity 3 – Interviews (VVA)
 - d. Activity 4 – Consumer focus groups (Ipsos)
 - e. Activity 5 – Cross-referencing supply side to findings on consumer behaviour (VVA)
 - f. Activity 6 – Development of hypothesis to be tested in Task 2 (VVA)
- Task 2: Behavioural experiment and survey
- Task 3: Analysis of results, conclusions and policy recommendations

Duration: May 2017 – March 2018 (10 months)

Partners: LE Europe, Ipsos NV, ConPolicy & Trinomics

Tasks VVA is responsible for: Task 1 (all except of activity consumer focus groups)

Duration of activities 1& 2 (Task 1) for which VVA is responsible for: 29th May March – 31th July (2 months)

Task 1 - preparatory phase

During the preparatory phase the study will try to respond the research questions (Annex 1) through secondary evidence and to define hypotheses to be tested in the behavioural experiment (Task 2). The preparatory phase will consist of six major activities. All activities, except for the consumer focus groups, will be carried out by VVA.

1. In-depth literature review of the major works and publications in the field of Circular Economy (VVA)
2. Collection of evidence of Circular Economy supply side and market data (VVA)
3. Semi-structured interviews (VVA)
4. Consumer focus groups (Ipsos)
5. Cross-referencing supply side to findings on consumer behaviour (VVA); and
6. Development of hypothesis to be tested in Task 2 (VVA).

The research questions

All the activities listed above are aimed at finding the already available evidence on the following research questions. The questions are both the questions for the literature review and desk research and at the same time the questionnaire for the expert interviews. The questions follow the research questions (RQ) from the ToR.

It is worth noting the questions have been divided into overarching questions and more detailed questions. In the interviews, the detailed questions are only asked if the interviewer shows some expertise or interest in that area.

Section 1: Drivers, barriers and trade-offs (RQ1, 1a, 2, 2a, 3, 7, 7e)

In which way do consumers take the durability/reparability of products into account when making their purchasing decisions? What are the drivers, barriers and trade-offs that help or hinder consumers to take durability/reparability of products into consideration (Note: Please consider economic, social, or psychological factors)? Consider especially the following type of decisions?

- Whether buying a less durable or a more durable goods (e.g. for clothes: how long and how often they can be (and are) used before they are replaced)
- Whether to repair or replace broken goods⁷
- Whether trying to self-repair
- Whether renting or sharing instead of buying a good
- Whether to replace a still working well and buying a new one

What is the relative importance of these drivers, barriers and trade-offs?

Does the impact and importance of these drivers, barriers and trade-offs vary by product or product group/category (consider especially televisions, smartphones, vacuum cleaners, dishwashers and clothes)?

Section 2: Willingness to engage (RQ 2b)

Are consumers interested/willing to consider the durability or reparability of products in their purchasing decision? Why? Under which conditions?

Does this vary depending on the product?

Detailed questions on the willingness to engage (only asked if the interviewee shows expertise and interest in the questions)

Consumer expectations on durability (RQ 3a, 3b, 3c, 3d)

- a) What are consumer expectations about durability?
- b) Are consumers in your country aware/conscious about the durability of products?
- c) Do consumers with lower incomes take durability less or more into account than consumers with higher incomes?
- d) To what extent does the degree of awareness of durability of products and their components vary across products or product categories? Are people more aware of the durability of televisions than vacuum cleaners? Does this depend on the brands/previous experience? (Products covered in Task 1: televisions, smartphones, vacuum cleaners, dishwashers and clothes)
- e) What is durability for consumers? Does this interpretation fit with the interpretation of product designers?
- f) What are the consumer rights in your country (or other EU countries) when a product breaks down within a durability period, as communicated/committed by a trader/producer? How aware are the consumers in your country (or other EU countries) of these rights?

Consumer expectations on reparability (RQ 7a, 7b, 7c, 7d)

- a) What are consumer expectations about reparability?
- b) What do consumers prefer: official repair centres (linked to the manufacturers/retailers of their appliances) or independent repairers?
- c) What are consumers' expectations about "reparability" across products or product categories? Are consumers expecting to have smartphones more easily repaired than

⁷ If this is within or beyond the (legal/commercial) guarantee period may be also a relevant element for consumers to take into consideration.

dishwashers? (Products covered in Task 1: televisions, smartphones, vacuum cleaners, dishwashers and clothes)

d) Are consumers aware of the existence of repair services for their products? To what extent is the existence of repair services an important factor in their purchase decisions?

e) What are consumers' expectations about repair services and to what extent are these expectations met? (e.g. convenience, replacement of product during repair, cost of repair, how much time it took to repair, etc.)

Section 3: Importance of CE characteristics (RQ 8)

To what extent do consumers consider a) the durability and b) the degree of "reparability" of a product at the moment of purchase?

Do consumers feel that they have the information needed to assess durability and reparability of a product?

How important are these characteristics in the purchase decisions?

Detailed questions on the willingness to engage (only asked if the interviewee shows expertise and interest in the questions)

Durability information (RQ 4, 4a, 5, 5a, 5b)

Definition: In the context of this study, the provisional working definition of "durability information" is "information about the average/expected or minimum lifespan of products before they defect or break".

a) Would you have any suggestions to improve/revise this working definition?

b) Did you come across 'durability information' on products? For which products? Was this information voluntarily included by the trader/manufacturer (e.g. via advertising,) or was this done via mandatory information requirements (at EU or national level)?

c) How and where should durability and reparability information be presented to allow informed decisions and to motivate more sustainable choices?

d) Which concrete parameters/time periods of durability trigger consumer decisions?

e) what do you consider most relevant for consumers: information about minimum lifespan of products; information about average lifespan

Reparability information (RQ 9, 9a, 9b, 11, 11a, 11b)

Definition: In the context of this study, the provisional working definition of "reparability information" is "all types of information that could be relevant to repair products in case of a defect".

a) Would you have any suggestions to improve/revise this working definition?

b) What type or source of reparability information would consumers need or prefer (labels, product descriptions, operating instructions, commercial guarantees; manufacturers, retailers, repair professionals, consumer associations, dedicated webpages or social media)?

c) Do these expectations vary by product/product category? (Products covered in Task 1: televisions, smartphones, vacuum cleaners, dishwashers and clothes)

d) To what extent do consumers obtain such information from these sources? What is missing?

e) Do consumers actively look for reparability information when purchasing a product? How do consumers go about finding reparability information?

After sales expectations (RQ 4b, 10, 4c, 4d)

a) Which part or the function of a product breaks more frequently according to consumers? (Products covered in Task 1: televisions, smartphones, vacuum cleaners, dishwashers and clothes)

b) If the product breaks down within an indicated durability period, to what extent and under which conditions would consumers expect free repair, or other remedies (e.g. replacement, refund etc.), and which remedy would they prefer?

c) Do the above expectations vary across products?

Section 4: Policy Tools (RQ 6, 6a, 12)

Which level policy tools at EU, national, regional or local level could be envisaged to encourage/motivate consumers to engage in CE-practices? (focus at EU level)
Especially:

- Buying more durable products
- Using repair services when a defect occurs
- Self-repair when a defect occurs

How could the EU level policy tools be further developed and implemented in the short and medium term?

Section 5: Circular Economy business models and market data

Do you know about reparability business models?

Definition: a reparability business model is based on providing consumers with accessible reparation services or reparation guidelines for their purchased products.

- If so, which ones?
- Who does the repair?
- What are the funding mechanisms?
- Are there any combined business models (repair/recycle)?
- Which advertising techniques do companies with reparability and recyclability business models use? Do you have any example?

Do you know about 'recyclability' business models?

Definition: a recyclability business model is based on reusing the raw materials from products that are broken or products that consumers do not want to continue using to produce new products. If so, which ones?

- Who do they repair?
- What are the funding mechanisms?
- Are there any combined business models (repair/recycle)?
- Which advertising techniques do companies with reparability and recyclability business models use? Do you have any example?

What are in your view the most important obstacles for companies to set up business models for repair and recycling

Which existing datasets and information sets are you aware of in the markets of Smartphones, televisions, vacuum cleaners, Dishwashers and clothes regarding:

- Product recycling rate (Definition: is the proportion (%) of materials recycled or recovered from certain products)
- Product recycled material rate (Definition: the rate (%) of inclusion of recycled materials in products in certain products)
- Product durability (Definition: how long does a product last. Units: hours, days, years etc.)
- Product consumption rate (Definition: Quantity of a good or service consumed in a given period)
- Number of consumers buying X product
- Number of companies selling a X product
- Value of transactions (companies) (Definition: The price paid or payable for a good or service)
- Employment rate in specific sector
- Market concentration
- Number of products manufactured
- Number of consumer complaints in given CE sector (e.g. companies repairing TVs)

Please note: We have coloured some of the questions above red. These are the questions where we need responses already on the 22nd of June. Please make sure that literature and interviews that promise responses to those questions are given priority!

Activity 1 – Literature review

Objective: The literature review is the basis that helps define the need for primary data collection in the remainder of the project. The study team should try to respond as many research questions as possible but focusing on five areas:

1. **Drivers, barriers and trade-offs** that consumers face when making CE-related decisions;
 - Whether buying a less durable or a more durable goods
 - Whether to repair or replace broken goods
 - Whether trying to self-repair
 - Whether renting or sharing instead of buying a good Whether to replace a still working well and buying a new one
2. **Importance level of CE characteristics** when consumers purchase a new product, including level of CE awareness and trust in CE practices.
3. **National and EU level circular and eco-innovation policy options** that encourage/motivate consumers to engage in CE-practices (e.g. - buying more durable products, use repair services and self-repair when a defect occurs)
4. **Durability product information** is presented to consumers and how effective the durability information is when it comes to consumer purchases.
5. **Reparability product information** is presented to consumers and how effective the reparability information is when it comes to consumer purchases

Scope:

The literature review will be undertaken in English in all EU Member States, Norway, Iceland and four other non-EU countries (CA, CH, JP and US). We will review literature in seven further languages, namely French, German, Czech, Spanish, Dutch, Hungarian and Romanian.

At the proposal stage, the study team has identified **128 documents** to be reviewed. The table below shows the number of documents per language.

Table 4: Documents per language

Language	Number of documents
English	50
French	16
German	16
Czech	5
Spanish	None for the moment
Dutch	23
Hungarian	6
Romanian	7

Methodological approach to conduct literature review:

For the literature review we will use a Rapid Evidence Assessment (REA) methodology to scan through and include the findings of reports, studies, academic articles or grey literature on the topic of Circular Economy. Focusing in the specific objectives described above. The REA allows researchers to assess the literature's methodological quality and to extract the most relevant data in a standardised way over many documents.

To accommodate the REA methodology, Activity 1 will be divided into 5 sub-activities:

1. Sub-Activity 1.1: Understand the research questions we are trying to answer;
2. Sub-Activity 1.2: Pre-screening of literature and quality assessment;
3. Sub-Activity 1.3: Additional desk research to find additional literature;
4. Sub-Activity 1.4: Data extraction;
5. Sub-Activity 1.5: Hypotheses drafting.

The five sub-tasks will be integrated and feed into each other as follows:

Sub-Activity 1.1: Understand the research questions we are trying to answer and the areas that we will have to develop hypotheses. The objective of sub-task 1.1 is to understand the scope of the literature review and the research questions we are trying to answer when conducting this literature review.

Sub-Activity 1.2: Pre-screening of literature and quality assessment. The objective of this sub-activity is screening all documents that were identified at the proposal stage to keep document that contain the information that we are looking for and discard the rest. The Literature Review Excel includes a sheet called Pre-screening that all researchers will need to fill in. During this pre-screening process, the study team will also need to indicate if the scanned literature contains market data or business model information (Activity 2).

The quality and robustness of the studies analysed can be assessed by carefully judging the source, the scope and the methodology of the work.

Source: we should prioritise research from peer-reviewed journals, as well as studies from policymaker, think-tanks and academia

Research scope: the broader the scope of activities included, the lower the quality of research.

Methodology: our focus is on papers having collected data from primary sources (e.g. interviews, surveys, experiments). Where appropriate, papers using secondary data are considered to the extent that data sources are reliable and transparent. For instance, we will include papers where data was retrieved from EUROSTAT or national statistical offices. However, studies based on secondary data like investors reports, newspaper articles, reported statements from company representatives or broker reports will always be accompanied by the appropriate qualifying statements.

Sub-Activity 1.3: Additional desk research to find additional literature. Researchers should review:

1. Sources included in the literature they have reviewed (included in footnotes or quoted in the text)
2. Google and Google scholar additional literature
3. National consumer association websites
4. National authority reports related to Circular Economy
5. Conduct the pre-screening process with the additional identified literature (fill in the pre-screening sheet)

Sub-Activity 1.4: Data extraction. Based on the quality assessment of literature, the study team will need to fill in the "full-analysis" sheet of the Literature Review Excel document.

The Excel tool will record documents per criteria such as:

Type of author (e.g. regulatory body, academic, independent industry body, collaborative platform, news source, independent think tank, consumer association, etc.);

Type of document (e.g. regulatory report, academic article, news article, independent report, promotional report by industry, etc.);

Industry: electronics, white goods, home appliances, textiles etc. Some literature is not industry specific. For those, researcher should select non-industry specific in the drop-down menu;

Geographical scope;

Type of data used (e.g. qualitative/quantitative);

Data collection method (e.g. interviews, survey, statistical data retrieval, focus groups, etc.);

Assumptions made (e.g. consumers engage in Circular Economy practices only if they believe they reduce their expenses by 2% in the next five years);

The information that the literature contains for responding to the research questions (Each question has one column in the excel sheet)

In the "**full analysis**" sheet, the study team should aim to respond the research questions according to the information retrieved from the piece of literature they are reviewing.

Sub-Activity 1.5: Define hypotheses. The aim of this subtask is to draft the hypotheses, the study team should suggest some hypotheses from the literature they have reviewed. The definition of hypotheses is divided into two stages:

1. Preliminary findings: researchers have to provide hypotheses by the **Thursday 22nd June** from the literature they have reviewed (and the interviews they have conducted) till then.
2. Final results: researchers have to provide a final list of hypotheses by **Friday 28th July**.

Activity 2 – Desk Research

Objective: Through desk research, the study team will aim to find additional (in between and after the literature review) market data and information on repair and recycle business models for **smartphones, televisions, vacuum cleaners, dishwashers and clothes**. It is worth noting that the aim is to find market data on CE characteristics not general market data on the importance of smartphones.

While reviewing the literature, researchers should also collect market data. Firstly, the researchers should identify and extract data from the literature they will review for the literature review and secondly, conduct additional desk research to gather the remaining market data (mostly through national statistic websites). Some of the market data that should be collected:

Market data to be collected:

- Market concentration
- Number of products manufactured
- Product recycling rate
- Product durability rate
- Product consumption rate
- Number of consumers buying x product
- Number of companies selling a X product
- Value of transactions (companies)
- Employment rate in specific sector
- Consumer complaints
- Other

During the literature review and desk research researchers also need to find information on business models including some of the following characteristics: repair/recycle model, who provides the repairing services, sales techniques, advertising etc.

Scope: The geographic scope of the market data collection through the desk research will align with the geographic coverage of the semi-structured interviews. It will cover Austria, Czech Republic, France, Germany, Spain, Ireland, the Netherlands, Hungary, Romania and Sweden. Preferably, the data should be collected for a period of 10 years (most recent 10 years).

Methodological approach

Step 1: Look for remaining market data at statistical databases (Eurostat, Prodcom), reports, studies, green papers, market research report, positions papers, surveys, websites of trade organisations, consumer organisations, public authorities and any other source deemed to be relevant for this purpose.

Step 2 During the literature reviews researchers should look for market data and business models' information, considering the sources provided in the footnotes of the documents being reviewed. This information should be included in the Activity 2 excel.

In the Activity Excel, there is an information sheet explaining the products covered in this study and the variables that we are looking for. Each researcher should fill in the sheet for their country. If you need to add sheets for your countries, do not hesitate to do so.

There is also a business sheet, in which researcher need to explain the different business model they have found through the desk research.

Step 3: Look for additional CE business models and continue filling the business model sheet.

Data we already had from the proposal stage:

1. Number of enterprises involved in the repair of computers and personal and household goods (all 10)
2. WEEE recycled and reused (kilograms per capita)
3. Total recycling and reuse 2014 (kilograms per capita)
4. Packaging waste in the UK 2012-2013

Activity 3 – Semi-structured interviews

Objective: Researchers will conduct up to **50 semi-structured interviews in total** to:

obtain up-to-date and first-hand information on the relevant issues, and to explore the study objectives more in depth with the help of the stakeholders' expertise, and;

ensure no critical studies or data are missed.

Researcher should start contacting stakeholder **from the 1st June**. These interviews will be conducted in parallel to the literature review and desk research activities.

At the national level, we propose to conduct interviews with four types of stakeholders: national policy makers, consumer associations, trade associations, NGOs focusing on CE/sustainable consumerism, standardisation bodies etc. The study team should try to contact also people with technical background who is aware of the recyclability potential and techniques of secondary materials. The interviews will cover issues related to consumer behaviour, drivers, barriers and trade-offs, as well as supply side information. In the Annex, researchers can find the questionnaire.

Scope: In the semi-structured interviews, the study team will interview stakeholders in 10 selected Member States (Belgium, Czech Republic, Germany, Spain, Ireland, Netherlands, Hungary, Romania, Sweden, and United Kingdom), as well as relevant EU-level stakeholders. The list of stakeholders is included in the stakeholder excel.

Activity 4 – Answer research questions

The aim of this activity is to analyse the information gathered and answer the research questions. The analysis of the research questions should be submitted **by the end of August**.

Outcomes, timeline and capacity

The output of the literature review will include:

1. Preliminary hypotheses should be provided **by the 22th June**. A template to draft the answers and hypotheses is included in the project folder.
2. Final answers to research questions and hypotheses should be ready **by the 15th July**. There is also a word template to provide the answers and hypotheses considering all data gathered through the literature review, desk research and semi-structured interviews.
3. A final narrative write-up of the results of the literature review incorporated into different main sections of the interim report to be submitted **by the end of August**. This final narrative will be written by core study team.

4. Final list of hypotheses to be tested in Task 2 to be submitted **by the 28th July**. This list should include inputs of the three activities. This list will be drafted by core study team.
5. A full list of market data indicators to be provided by the **end of August**.
6. An assessment of these indicators to be included on the interim report to be submitted by the **end of August**. This assessment will be drafted by core study team.
7. Description and assessment of the current Circular Economy business models by the **end of August**.

6. Focus group discussion guide

<i>Timings and section summary</i>	Section content
1	Introduction
<ul style="list-style-type: none"> • • 15 min • • Presentations • Reassuring participants of confidentiality • Introduction to the topic and research objectives • Definition of key concepts: <ul style="list-style-type: none"> ○ Durability ○ Reparability ○ Recycling 	<p><i>Introduce self, Ipsos. Explain that the research is conducted on behalf of the European Commission. Present the research context: experiences with purchasing durable products, repairing and recycling goods.</i></p> <p><i>Reassure that no previous knowledge is required, and that there are no right or wrong answers – we want to understand participants' views and experiences.</i></p> <p><i>Get permission to record – transcribe for quotes, no detailed attribution.</i></p> <p><i>Allow participants to introduce themselves:</i></p> <p><i>Before we start, may I please ask each of you to introduce yourselves briefly – just by saying a few things such as what your first name is, what you do for a living, and anything else that you would like to share with us.</i></p> <p><i>Confidentiality: reassure participants that they are not being judged and that any information provided will not be followed up with them in person in any way.</i></p>

Description of the topic and key concepts:

The European Commission is conducting this study in the aim of finding out to what extent aspects such as: **durability** of different types of products, **reparability**, and **recycling** are important to people, what would encourage or discourage them in considering buying more durable products, repairing or recycling certain products/components, and what their expectations and experiences are with regards to these topics. The study is linked to the European Union's objectives and policies to promote a green and resource-efficient "Circular Economy".

Before going further into the subject, I would like to clarify the meaning of a few key terms/topics we will talk about:

By **durability** we mean the time period during which a product can be used before it breaks down. Let's not confuse this with the warranty (=commercial guarantee) or legal guarantee⁸, as a product can function and can be used even after the guarantee expires. What we want to refer to is the 'lifetime' of products, so the time during which a product can function and can be used before it breaks down.

By **reparability** we mean the possibility of repairing products once they break down (either repairing them yourself, or having them repaired by the shop where they were purchased, or by a repair shop or by anyone else).

⁸ Background: The "legal guarantee", also referred to as a "statutory guarantee", is a legal requirement under EU law for consumer goods to be in conformity with the contract (i.e. to be free from built-in defects). As a result, consumers across the EU have the right to ask the seller to remedy the lack of conformity, free of charge and during a given period from the date of delivery. The legal guarantee does not apply if the consumer damaged the product by mishandling it. The legal guarantee should also not be confused with the "right of withdrawal", i.e. the right to return goods purchased online or through other distance sales within two weeks, regardless of whether they are defective or not.

A "commercial guarantee" or "warranty" is sometimes offered to consumers **in addition to the** legal guarantee. Commercial guarantees are offered by the sellers themselves or by a manufacturer/producer (referred to as "manufacturer's guarantee"). Commercial guarantees can be either free-of-charge (i.e. included in the price of the good) or offered at an extra cost.

	<p>By recycling, in this context, we want to refer to:</p> <ul style="list-style-type: none"> - bringing certain products (e.g. white goods, batteries, but also clothing) back to the shop, or to recycling centres, or associations, in the purpose of recycling - converting products which are used, or broken, or which no longer serve, into something else (e.g. storage, or decoration etc.) - using products which were produced from recycled materials - buying refurbished products (products – old or new - which were taken back to the store by costumers for various reasons) <p>We are not referring to sorting waste.</p> <p>During our session, today we will talk about each of these practices, and about different categories of products to which they may or may not apply to.</p>
2	Awareness, attitudes and practices
<p>25 min</p> <ul style="list-style-type: none"> • Awareness and interest towards durability and reparability of products, recycling • Sources of information (product labels, online costumer reviews, advice in 	<p>Let's start by imagining that you need to purchase a dishwasher or washing machine. How important are each of the following to you:</p> <ul style="list-style-type: none"> - It's durability – how many years you will be able to use it for (not to be confused with guarantee) - It's reparability – being able to repair it/have it repaired if it breaks down (either self-repair, or by the vendor, or by a repair shop; Being able to find the appropriate parts easily and at a reasonable cost (e.g. compared to the purchasing price of a new product) - It's recyclability (e.g. being able to return it to the store, or to a recycling centre, or having it picked up by the store once it breaks down completely, for recycling purposes) <p>To what extent are these aspects important for other white goods (e.g. vacuum cleaner, refrigerator?) How about for a television?</p> <p>Now, imagine you are purchasing a smartphone. How important are these aspects?</p>

<p>shops etc.)</p> <ul style="list-style-type: none"> • Attitudes and current practices with regards to CE practices (buying durable/reparable products; repairing; recycling); variation by types of products 	<p>PROMPT:</p> <ul style="list-style-type: none"> - Durability? - Reparability? - Recycling? <p>How about for clothing (e.g. imagine you are purchasing a coat. How about a pair of jeans)? Do you take into account aspects such as durability when purchasing clothing? What type of clothing?</p> <ul style="list-style-type: none"> - When purchasing clothing, which circular economy aspects do you take into account? do you take into account aspect like purchasing those which pollute least when produced? How about purchasing clothing which offer the highest potential for recycling? - How about purchasing wrinkle free clothing? Why? <p>And, coming back to what we were discussing earlier – durability, recyclability and repairing, how would you find out this type of information when purchasing products? And how would you like receive this information?</p> <ul style="list-style-type: none"> - PROMPT on products: - white goods (e.g. washing machine or dishwasher; television, vacuum cleaner); - smartphone; - clothing. <p>Any other types of products? Are there any products for which these aspects (durability, reparability, recycling) are more important than for others? Which ones – can you give some examples? Why?</p>
--	--

Now, please think of your own experience when purchasing products. Can you think of any situation when you have taken into account these aspects when purchasing products (durability, reparability, recyclability)?

PROMPT: Please think of situations when purchasing: white goods? Television? Smartphones? Clothing? Anything else?

Which of these aspects were important? Why?

And how did you find out this information?

And how would you like receive this information?

Durability

Now, please think of products you own.

PROMPT: please think of:

- washing machine/dishwasher/other white goods;
- vacuum cleaner
- television
- smartphone;
- now, please think of clothing.

What do you know about their **durability** (how long they will last/function before they break down)? How sure are you of this? How do you know this? (e.g. labels? advice from shop? Online product reviews?). How useful would you find it to have this information?

And what do you **expect** the durability to be for products such as:

- white goods (washing machine/dishwasher)?
- Vacuum cleaner?
- Television?
- Smartphone?
- How about clothing?

And how willing would you be to pay more for products, which are more durable?

- Does this apply to any types of products, or just some? (please think of the products we spoke about, as well as other types of products). Which ones? Why?
- And would you be willing to pay for an extended guarantee? For which type of products? Why?

Reparability

And, still thinking of your own experience, can you please think of some examples of situations where you have **repaired** products (or have had them repaired)? Please think of products you own (white goods, television, smartphones or anything else – including clothing)

- What can you tell me about this situation?
- What kind of products were there?
- What was it about them that broke down/malfunctioned?
- How did you have these repaired? – e.g. did you do this yourself? Has someone else done it? Who? How did you do it? How easy/difficult was it to have it repaired/to find someone to repair it?
- Was the repair within or beyond the (legal/commercial) guarantee period?
- Was it an official or an independent repair centre?

- **Why did you have these repaired, instead of buying new ones?**
- Was the experience positive or negative? Why?
- Why did you not have this repaired and bought a new one?

Recyclability

Now, let's talk about **recycling**. As mentioned, we are not referring to sorting waste in this context, but more to practices such as bringing products (e.g. white goods) back to the shop for recycling purposes, or to a recycling centre, once they are broken or once you don't need them anymore, or to giving them a new use (e.g. through DIY practices – “DIY stands for “do it yourself” and is a term we use to designate practices through which people create things for themselves without the aid of paid professionals. It can refer to either creating things and objects such as furniture or clothing, repairing or restoring things, etc.”).

Can you give me any examples of situations where you have done this?

By recycling, in this context, we are also referring to buying **refurbished goods**. By this we mean products which have been returned by costumers to the shop/manufacturer, for various reasons. Before selling these goods as 'refurbished' manufacturers test their functionality and rectify defects.

Have you ever purchased refurbished products? What kind?

And would you consider purchasing refurbished products? What kind?

PROMPT

- Washing machine? Dishwasher? Other white goods?
- Vacuum cleaner?

	<ul style="list-style-type: none"> - Television? - Smartphone? - Clothing? - Anything else? <p>Why?</p> <p>PROMPT:</p> <ul style="list-style-type: none"> - Environmental reasons? - Economic reasons (e.g. financial rewards, vouchers etc.)? - Helping other people (e.g. recycling clothing) - Anything else? <p>If not, why not?</p> <p>And have you ever purchased second hand clothing? What kind? Why?</p> <p>If not: would you consider purchasing second hand clothing? What kind? Why?</p> <p>Would you consider purchasing clothes which are made from recycled materials? Why? And how would you know that they are made from recycled materials?</p>
3	Barriers and drivers
<p>25 min</p> <ul style="list-style-type: none"> • Factors which prevent consumers 	<p>Thank you for your input so far. I would like us now to talk about what encourages you to buy durable goods, and to repair and recycle products, as well as about what can discourage you from this.</p>

<p>from undertaking CE practices</p> <ul style="list-style-type: none"> • Factors which encourage consumers to undertake CE practices • Factors which would encourage consumers to get involved even more with CE practices (including expectations with regards to after sale services such as repairing and other remedies) 	<p>Let's start by talking about products' durability, and afterwards we can discuss reparability and recyclability.</p> <p><u>Durability</u></p> <p>How easy/difficult do you find that it is to purchase products which are durable? Why?</p> <p>PROMPT for each: think about products such as:</p> <ul style="list-style-type: none"> - a washing machine/dishwasher/white goods in general?; - a vacuum cleaner - a television - a smartphone - how about clothing? <p>What is difficult about it? What is easy?</p> <p>What are the advantages to it?</p> <p>Is it easier/more convenient for certain products than it is for others? Which ones? Why?</p> <p>What are the inconveniences?</p> <p>And what do you think would encourage you to purchase products which are more durable? PROMPT on the 5 types of products</p> <p><u>Reparability</u></p> <p>Now, let's think about reparability, and about repairing products once they break down or malfunction.</p> <p>Imagine your washing machine or dishwasher breaks down (and it is still under legal/commercial guarantee), and you contact the</p>
---	--

store/point of purchase. Would you prefer to have it repaired or replaced? Why?

- *Discuss pros and cons*

Would this also be the case if your TV broke down?

Would this also be the case if your smartphone broke down?

How about a piece of clothing (or a pair of shoes) which gets damaged?

Now, imagine that your washing machine or dishwasher breaks down, and it is no longer under legal/commercial guarantee. Would you choose to buy a new one, or try to have yours repaired?

How about for a TV?

How about for a smartphone?

How about a pair of jeans? A pair of shoes? Other clothing items?

What do you think are the main advantages of having products repaired (e.g. instead of purchasing new ones)?

Is it easier/more convenient for certain products than it is for others? Which ones? Why?

What are the main inconveniences to it?

And what would encourage you to do it more? PROMPT on the 5 types of products

And would you consider having a product repaired once its guarantee has expired?

- What type of product? PROMPT on the 5 types of products

	<p>- Why? <i>If not</i>: why not?</p> <p>And, if you were in this type of situation, would you prefer going to an official repair centre (e.g. manufacturer, shop?) or to an independent one? Why? Would this be the case for any type of product?</p> <p><u>Recyclability</u></p> <p>Now, I'd like us to focus on recyclability. REPEAT DEFINITION: as mentioned in this context we mean bringing certain products (e.g. white goods, but also clothing) back to the shop, or to recycling centres, or associations, in the purpose of recycling, converting products which are used, or broken, or which no longer serve, into something else (e.g. storage, or decoration etc.), using products which were produced from recycled materials.as well as buying refurbished products.</p> <p>In your opinion, do you think there are any benefits of recycling products? What will these benefits be?</p> <p>Is it easier/more convenient for certain products than it is for others? Which ones? Why?</p> <p>What are the main inconveniences to it?</p> <p>And what would encourage you to do it more? PROMPT on the 5 types of products</p>
4	Expectations with regards to how the information is presented
25 min	Thank you for your feedback so far.

<p>Consumer expectations with regards to information about products' durability and reparability:</p> <ul style="list-style-type: none"> ○ Where it should be presented (e.g. product labels, description, instruction manual etc.) ○ How it should be presented (e.g. should there be a universal classification similar to that of energy labels?) information to be presented 	<p>I'd now like us to talk about how people can (as well as how they should be able to) find out information with regards to products' durability, reparability and recyclability.</p> <p><u>Durability</u></p> <p>Let's start with durability. Thinking of the washing machine/dishwasher example, how easy or difficult do you think it is to find out information for this type of product? How about for vacuum cleaners or white goods in general?</p> <p>And thinking you would need to buy this type of product yourself, where would you look for this type of information? PROMPT:</p> <ul style="list-style-type: none"> - Information visible on the product/product package before you buy: a product label? - Asking sales assistants in shops? - Online – where? Brand website? Costumer reviews? Other? - Own past experience with a specific brand? <p>And how easy to do you think it would be to find out this type of information?</p> <p>How about for a TV?</p> <p>Now, let's imagine you need to purchase a smartphone. Where would you look for information on durability for this type of product? And how easy or difficult to you think it would be to find it?</p> <p>How about when buying clothing, such as a new coat?</p> <p>And where do you think people should be able to find out information about products' durability? PROMPT: labels? Brand</p>
--	--

website? Shop assistants? Other?

Would this be the case for all products we've talked about? Or should it differ according to the type of product? How?

Would it be useful to have this information mandatorily included on the EU Energy efficiency label ⁹? This the label you see in shops on *all* household appliances rating the energy efficiency and other features of the different household appliances.

If yes,

PROMPT:

- Expected durability, in number of years? In months? In intensity of use (e.g. number of washing cycles)
- Or as a classification in colours (green – very durable - to red – less durable)
- And would it be useful to have this type of information for all products, or only certain categories? Which ones? Why? (please think of white goods (e.g. dishwasher/washing machine), vacuum cleaner, television, smartphones? clothing? Other products?)

Should the information be on the same label as the EU Energy efficiency label? Or should there be a separate label for durability?

And would it be useful to have this information included on the EU Ecolabel? (background: EU Ecolabel is a *voluntary* EU label for the best performing products on environmental excellence)

⁹ Please note that certain (depending on the product) existing EU energy efficiency labels do already include information which is not energy related e.g. the EU energy label of dishwashers covers also information on water use, noise etc given the relevance for consumers for this product.

Reparability

Now let's talk about reparability.

Let's imagine you would like to have a vacuum cleaner repaired. What would you do about it? Who would you contact for something like this?

How about for a dishwasher/washing machine?

How about for a TV?

How about for a smartphone?

How about for a coat which is damaged (e.g. torn)?

And how easy do you think it would be to find someone (a shop? A repair shop? The manufacturer) to fix something like a vacuum cleaner?

How about a dishwasher/washing machine?

How about for a TV?

How about a smartphone?

How about clothing (e.g. coat)

And who do you think should take charge of repairing products? PROMPT: shops? Repair shops? Manufacturer?

And where do you think people should be able to find out information about where to have products repaired?

PROMPT: on product labels? in shops? on the brands' website? Elsewhere?

And what type of information do you think should be included?

Would this be the case for all products we've talked about? Or should it differ according to the type of product? How?

And would it be useful to have such information included on the EU Energy efficiency label/EU Ecolabel?

Or should it be on a separate label?

Recyclability

Thank you. Now, let's think about recyclability.

How easy do you think it is to find information on how to recycle products (e.g. what to do with products which are damaged, broken or simply no longer used)?

How would you find out this type of information?

PROMPT: white goods (vacuum cleaners, washing machines, dishwashers), television, smartphones, clothing

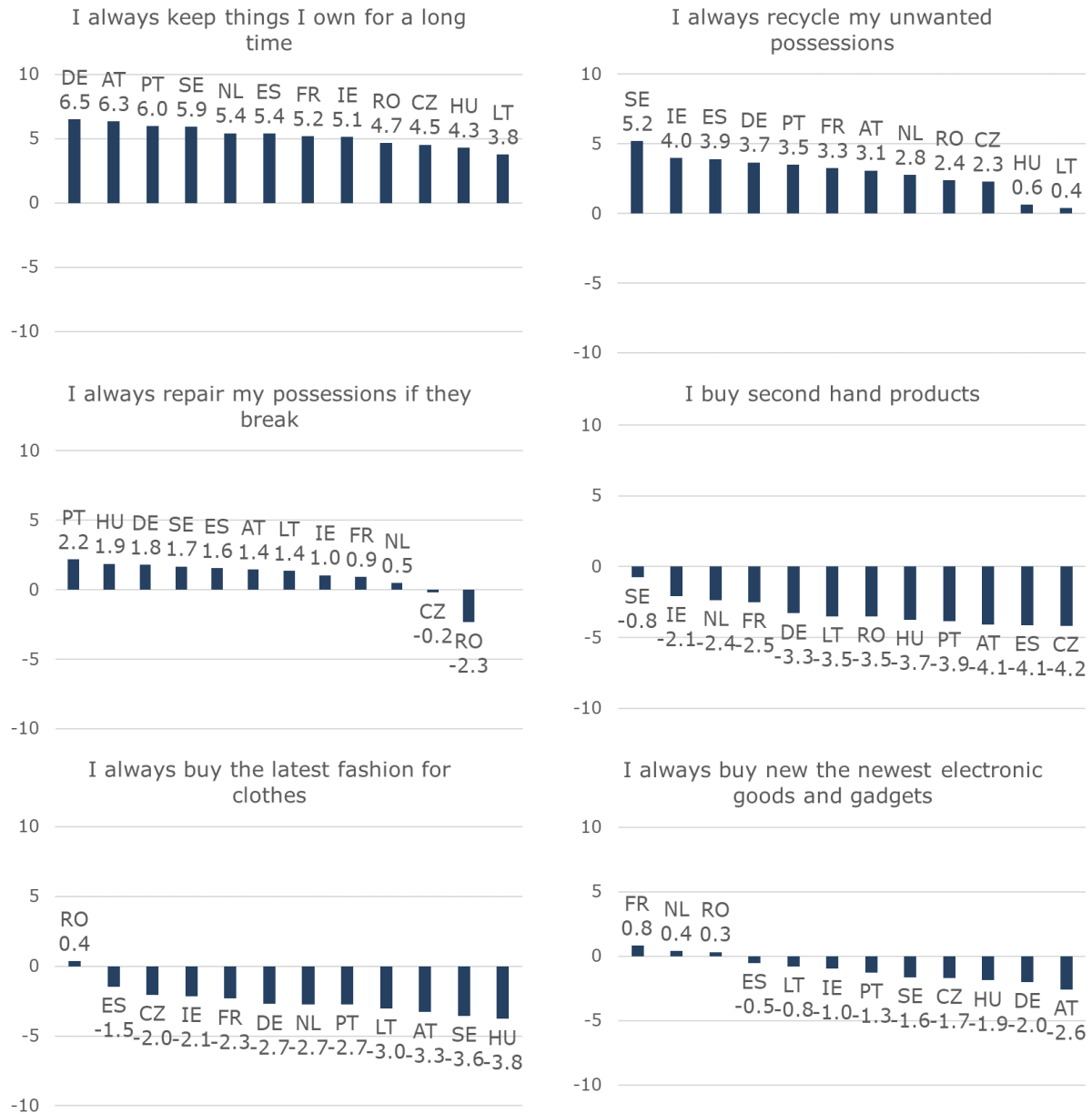
And where do you think people should be able to find out information about how to recycle products?

	<p>PROMPT: on product labels? in shops? on the brands' website? Elsewhere?</p> <p>And what type of information do you think should be included?</p> <p>Would this be the case for all products we've talked about? Or should it differ according to the type of product? How?</p> <p>Would it be useful to have a classification, similar to the one for energy labels? What should it indicate? PROMPT:</p> <ul style="list-style-type: none"> - Whether or not products are recyclable? - Whether or not products were made from recycled materials? To which extent? Anything else? - And would it be useful to have this type of information for all products, or only certain categories? Which ones? Why? <p>And should it be on the energy label, or on a separate label?</p>
Conclusion and thanks	
5 min	<p><i>Final reflections on the discussion</i></p> <p>Thank you for your input so far.</p> <p>Before closing this session, I would like to ask, is there anything else you would like to say about the topic we have discussed today, and that we have not covered yet?</p> <p><i>Thanking respondents for their participation, all while reassuring them of confidentiality</i></p>

7. Additional survey results

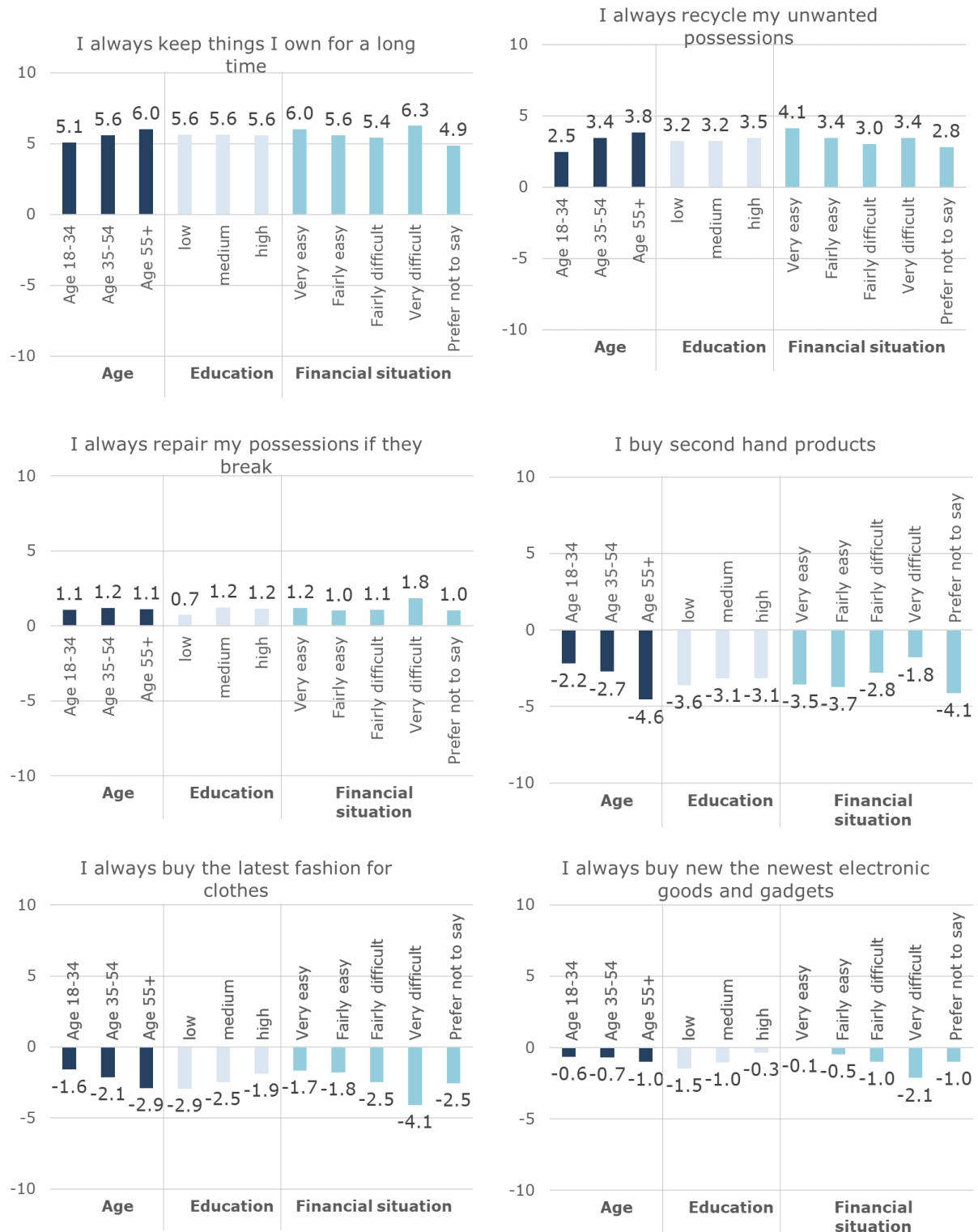
All tables shown here are based on analyses of the survey data.

Figure 1: Agreement to statements on general CE-related behaviours by country (average)



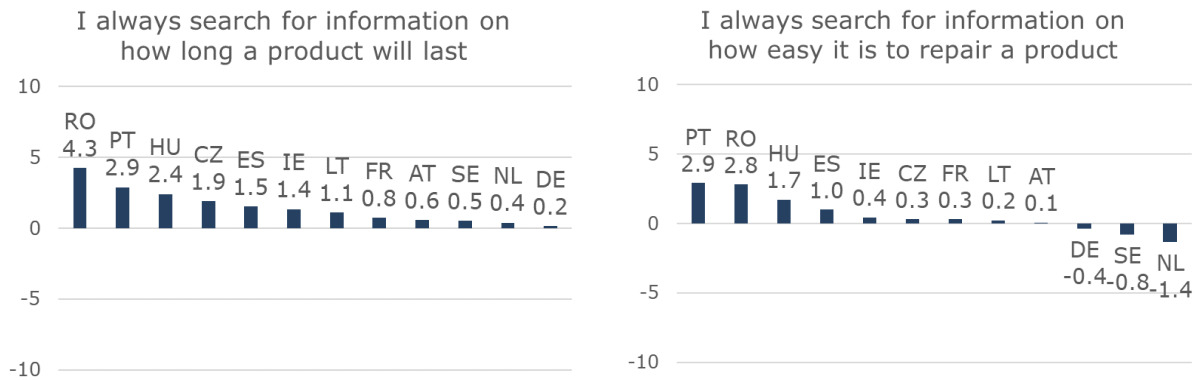
Notes: Participants had to rate six different statements regarding the question Q3.5: "To what extent do you agree or disagree with the following statements about yourself?". Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of - 3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 2: Agreement to statements on general CE-related behaviours by age, education and income (average)



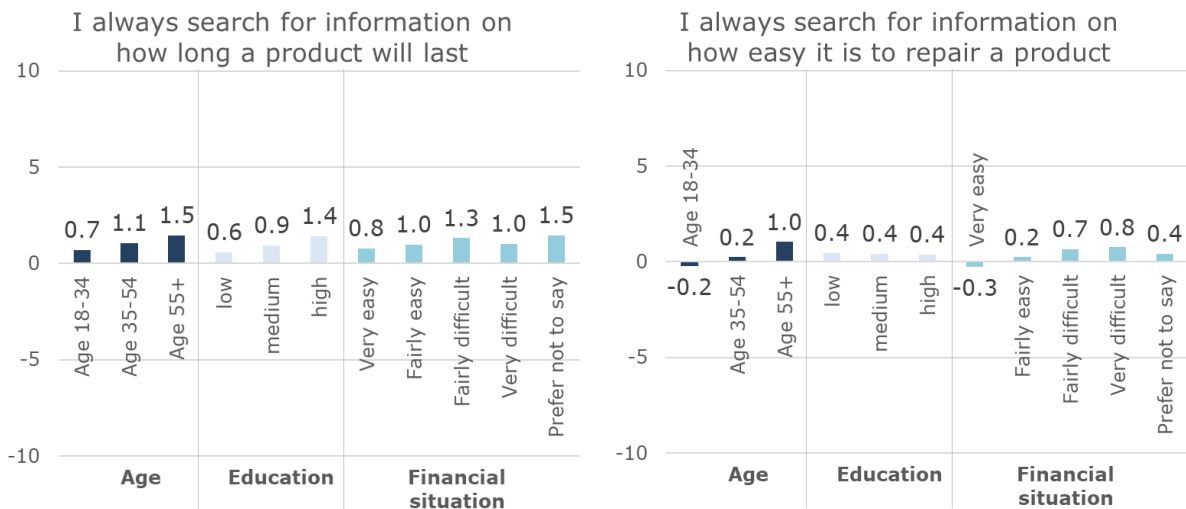
Notes: Participants had to rate six different statements regarding the question Q3.5: "To what extent do you agree or disagree with the following statements about yourself?". Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing. N=12,064.

Figure 3: Agreement to searching for durability and reparability information by country (average)



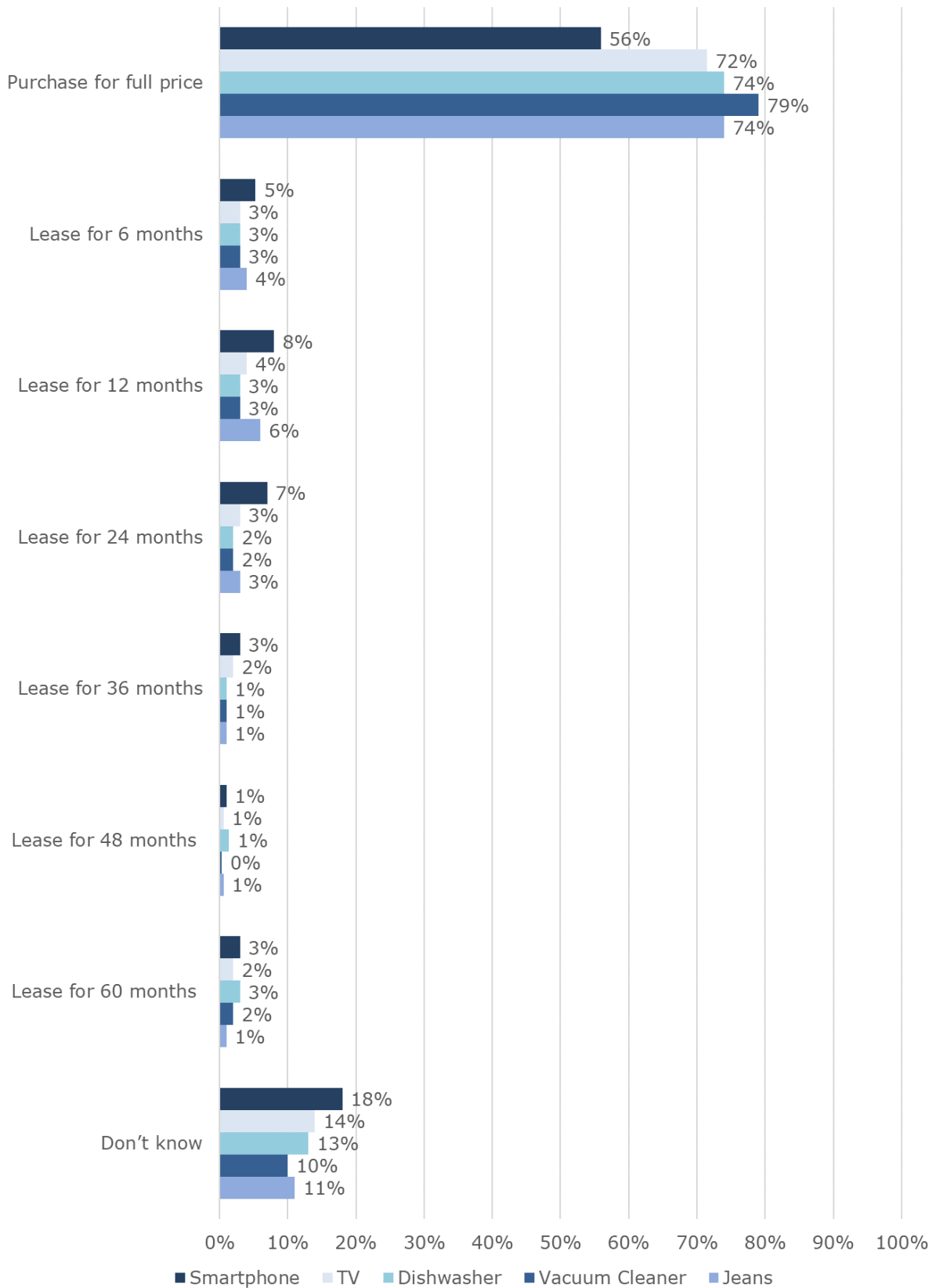
Notes: Participants answered the question Q5.1: "To what extent do you agree or disagree with the following statements?". Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 4: Agreement to searching for durability and reparability information by age, education and income (average)



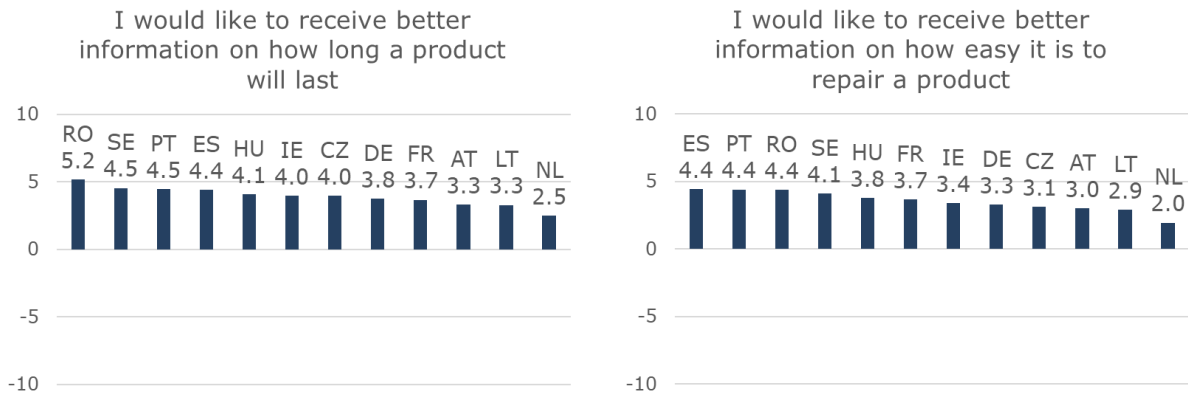
Notes: Participants answered the question Q5.1: "To what extent do you agree or disagree with the following statements?". Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 5: Willingness to lease products for different time periods (in %)



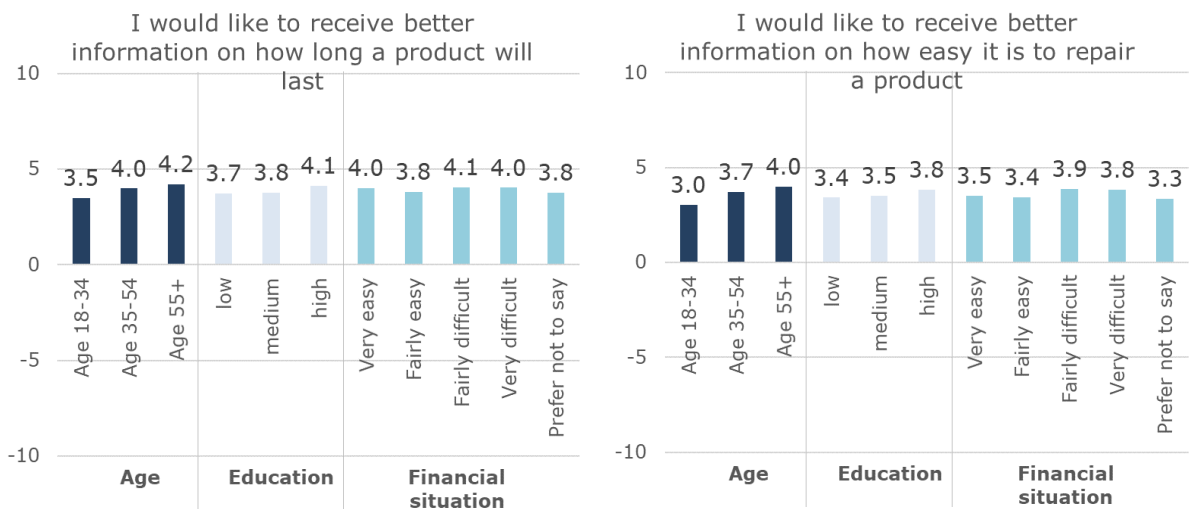
Notes: Participants answered the question Q7.1: "Suppose you wish to get a new smartphone / TV / dishwasher / vacuum cleaner / jeans. You have the option to either buy the phone outright for €349.99 / €719.99 / €359.99 / €159.99 / €59.99, or lease it for a certain number of months. Leasing the product means that you will not own the product, instead you will return it at the end of the lease, for example, to start a new lease for a new product, or continue to use your product at a lower price. Included in the monthly lease are repairs and replacement services in case of a defect. Which option would you prefer?"; Smartphone N=2,412 ; TV N=2,416 ; Dishwasher N=2,409 ; Vacuum cleaner N=2,412 ; Jeans N=2,415.

Figure 6: Agreement to preferring better durability and reparability information by country (average)



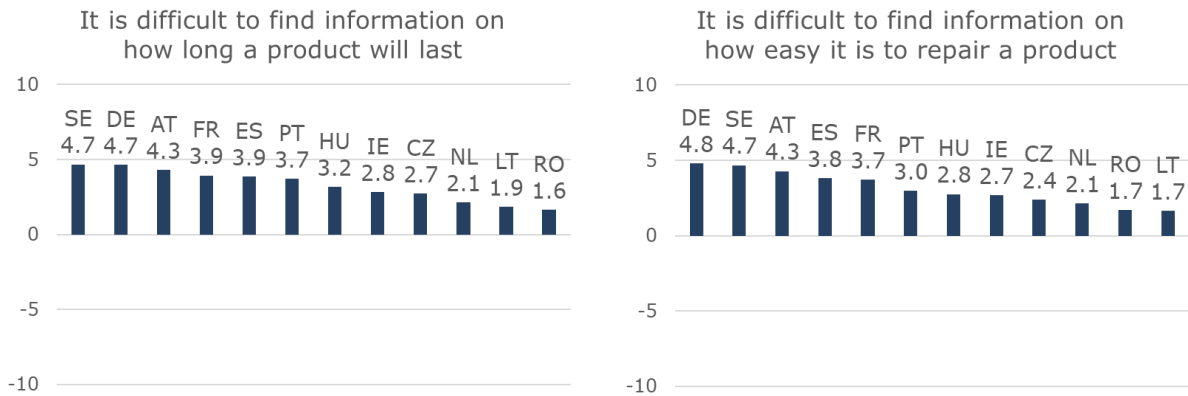
Notes: The question was Q5.1: "To what extent do you agree or disagree with the following statements?"; Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 7: Agreement to preferring better durability and reparability information by age, education and income (average)



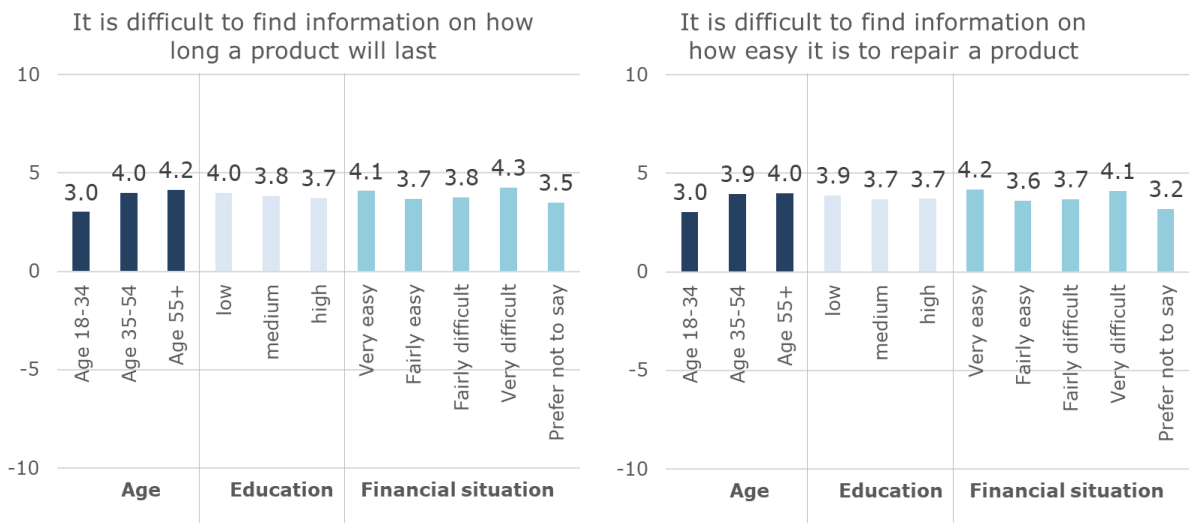
Notes: The question was Q5.1: "To what extent do you agree or disagree with the following statements?"; Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 8: Agreement to having difficulties in finding durability and reparability information by country (average)



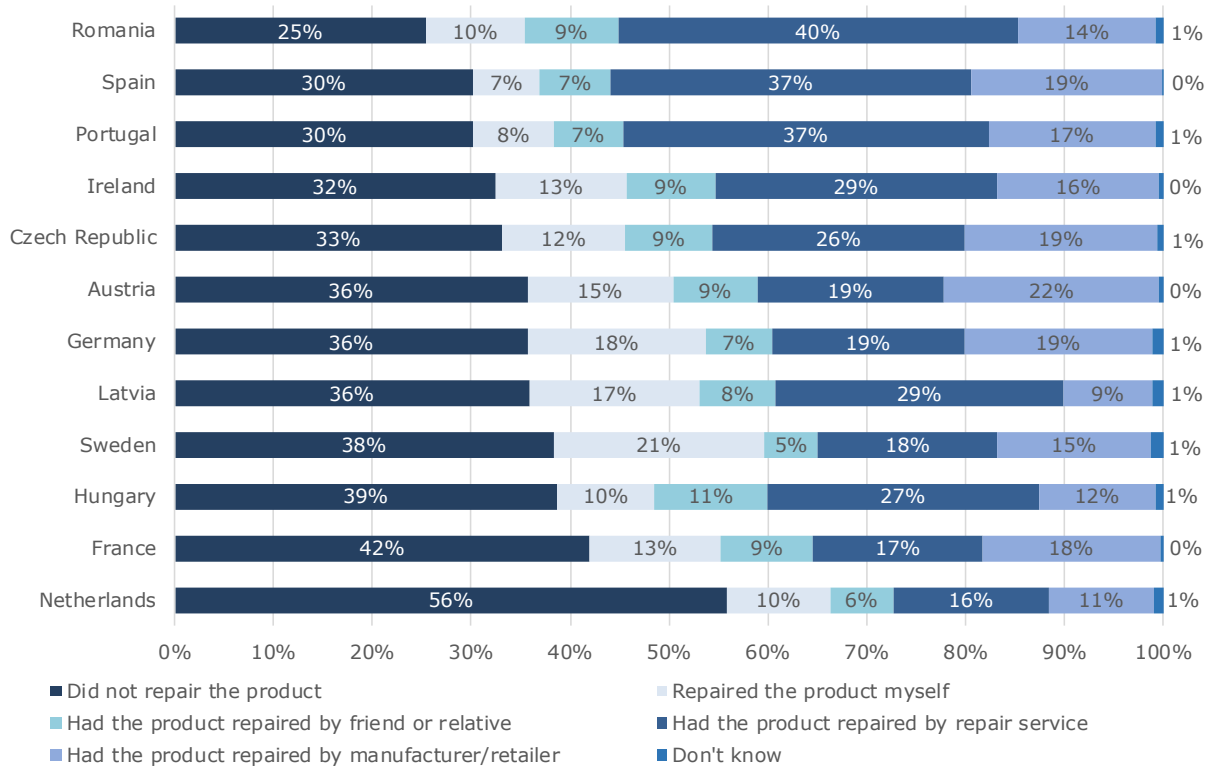
Notes: The survey question was Q5.1: "To what extent do you agree or disagree with the following statements?"; Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 9: Agreement to having difficulties in finding durability and reparability information by age, education and income (average)



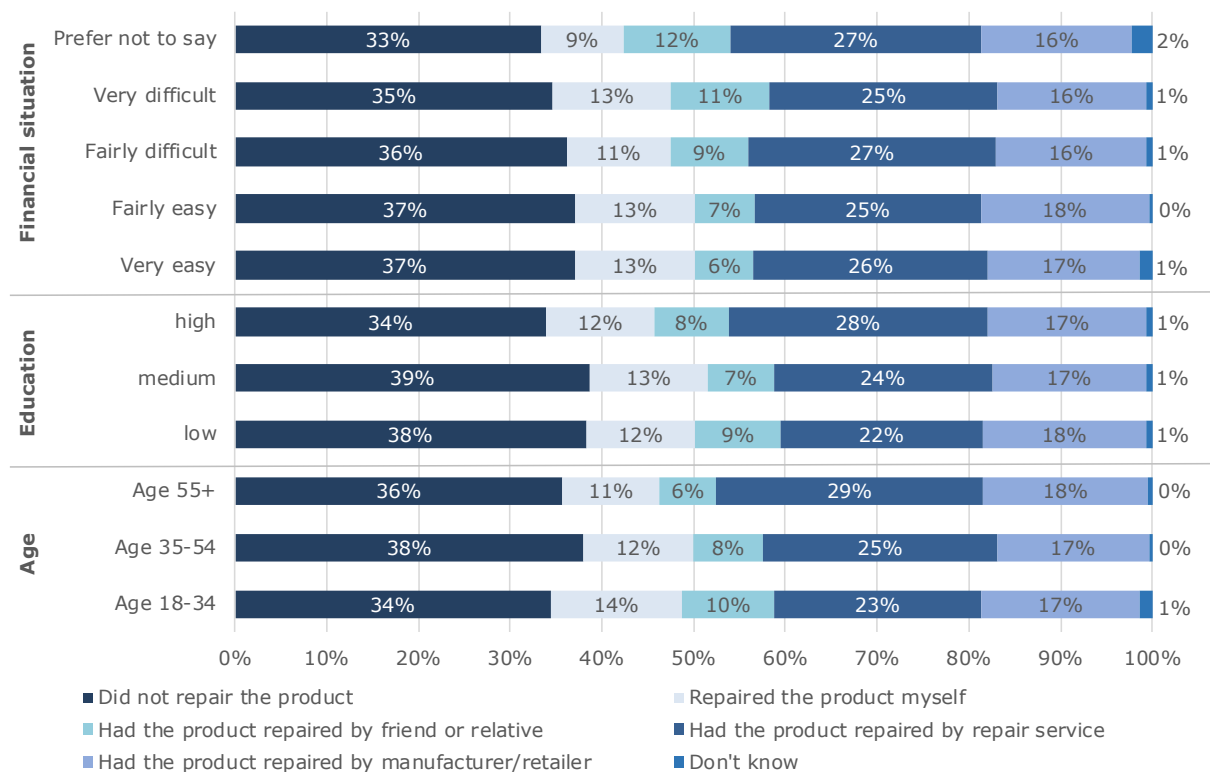
Notes: The survey question was Q5.1: "To what extent do you agree or disagree with the following statements?"; Answer categories were labelled with "Strongly agree" corresponding to a value of +10, "Tend to agree" corresponding to a value of +3 1/3, "Tend to disagree" corresponding to a value of -3 1/3 and "Strongly disagree" corresponding to a value of -10. Average values above 0 correspond to (rather) agreeing to the statement while values below 0 correspond to (rather) disagreeing. Hence, an average value of 0 corresponds to neither agreeing nor disagreeing; N=12,064.

Figure 10: Experience with repair by country (in %)



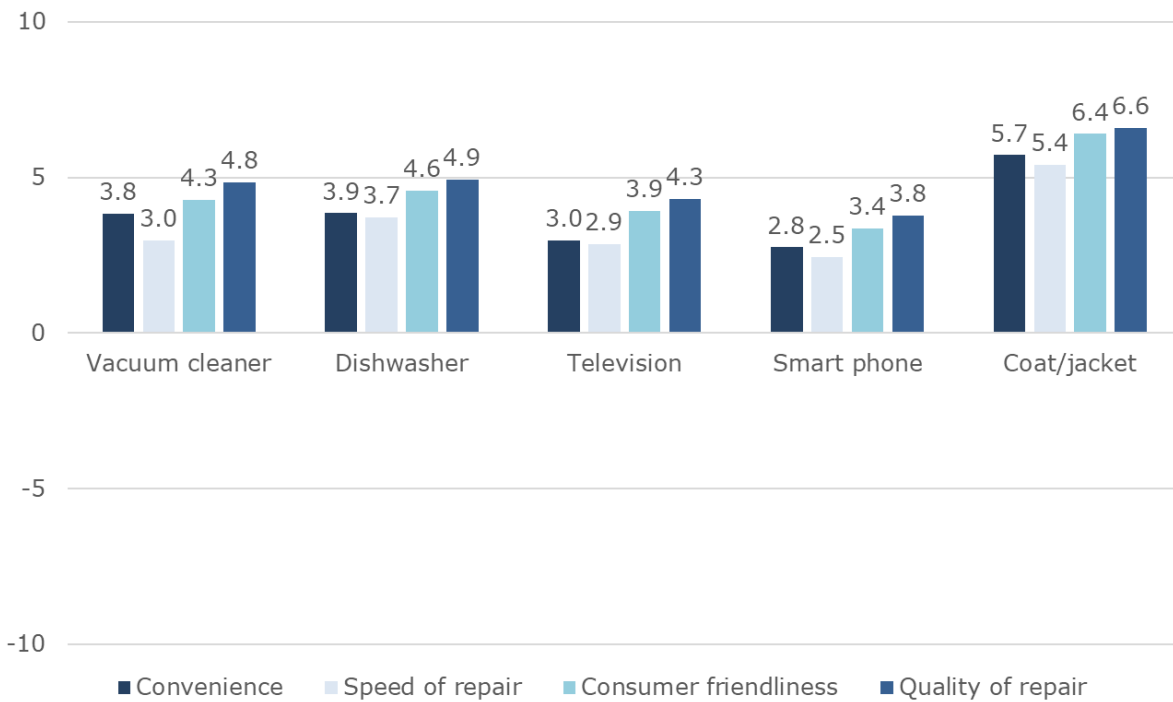
Notes: Participants were asked Q3.2a: "Thinking about the last time these products broke down or became faulty, did you repair these products yourself, or have these products repaired for you? Please select one answer for each product." For better readability percentages in the figure are reported as whole numbers, i.e. a value of 0% does not imply that no participant gave this reply but rather that less than 0,5% of the participants chose this answer category; N=12,064.

Figure 11: Experience with repair by age, education and income (in %)



Notes: Participants were asked Q3.2a: "Thinking about the last time these products broke down or became faulty, did you repair these products yourself, or have these products repaired for you? Please select one answer for each product." For better readability percentages in the figure are reported as whole numbers, i.e. a value of 0% does not imply that no participant gave this reply but rather that less than 0,5% of the participants chose this answer category; N=12,064.

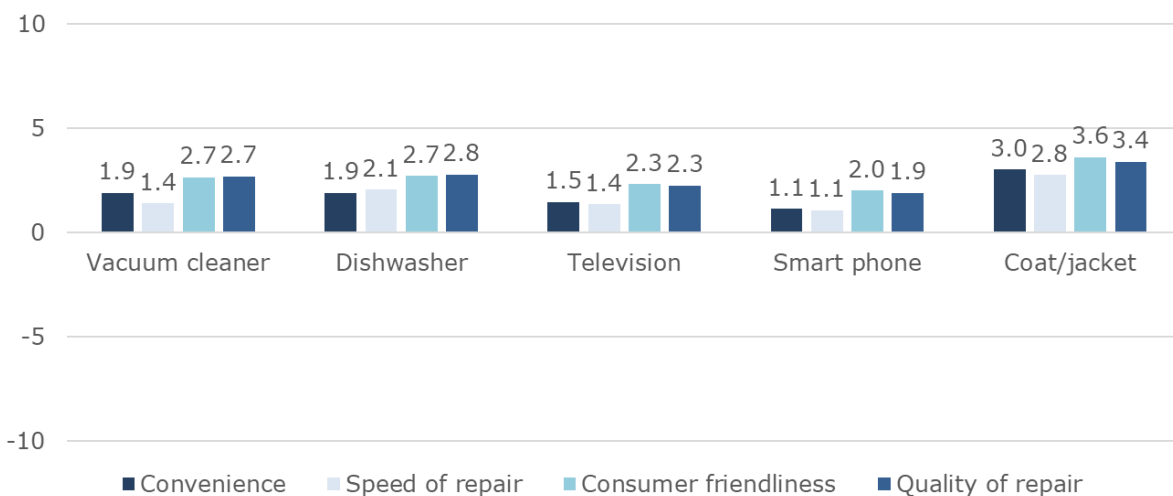
Figure 12: Satisfaction with professional repair services by product category (average)



Notes: No distinction was made between manufacturer repair and independent repair service.

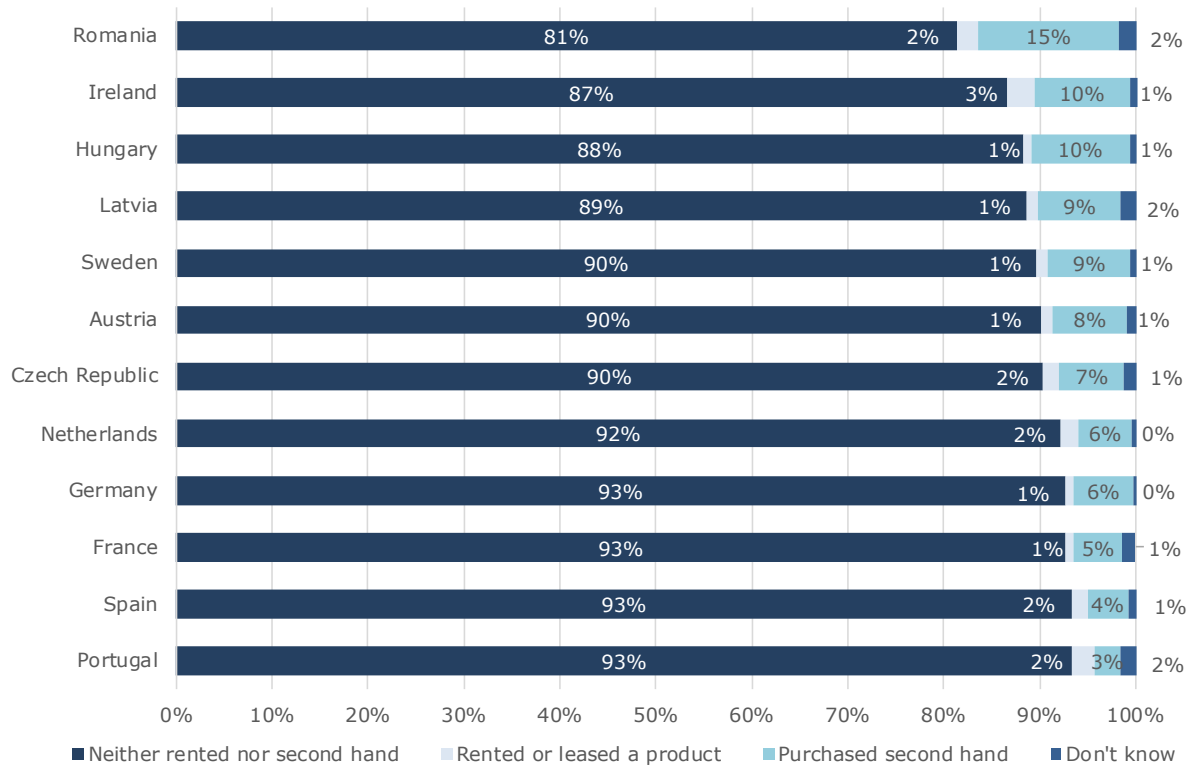
The question was Q6.2b: "Thinking about the time you used a repair service for a [vacuum cleaner / dishwasher / mobile phone / coat or jacket], how would you rate this service in terms of the following factors? Please answer on a scale from 1 ("Very poor") to 4 ("Very good")."; The respective product was chosen randomly for each participant given that he or she reported to have used a repair service for this product in the past. In order to calculate averages, answer categories were re-labelled with "very good" corresponding to a value of +10, "good" corresponding to a value of +3 1/3, "poor" corresponding to a value of -3 1/3 and "very poor" corresponding to a value of -10. Average values above 0 correspond to a (rather) positive rating while values below 0 correspond to a (rather) poor rating. Hence, an average of 0 corresponds to rating a factor neither good nor poor; N=7,331.

Figure 13: Rating whether professional repair services met expectations by product category (average)



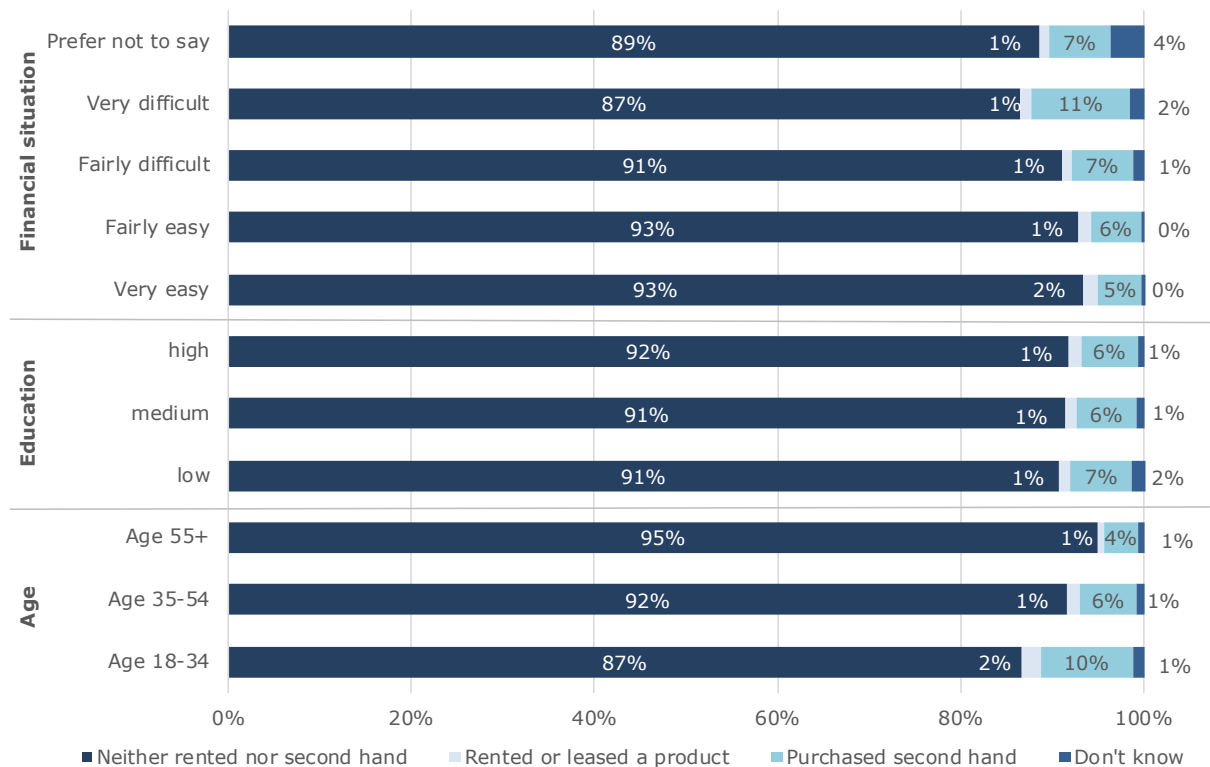
Notes: The question was Q6.2c: "And to what extent did the repair service live up to your expectations in terms of these factors?"; follow up to previous question Q6.2b; In order to calculate averages answer categories were re-labelled with "well above expectations" corresponding to a value of +10, "above expectations" corresponding to a value of +3 1/3, "below expectations" corresponding to a value of -3 1/3 and "well below expectations" corresponding to a value of -10. Average values above 0 correspond to a rating of (rather) above expectations while values below 0 correspond to a rating of (rather) below expectations. Hence, an average of 0 corresponds to rating a factor to perform neither above nor below expectations; N=7,331.

Figure 14: Experience with renting / leasing or buying second hand by country (in %)



Notes: The question was Q3.3a: "For each of the products below, have you rented or leased such a product, or purchased a product second hand, in the last 5 years?". For better readability percentages in the figure are reported as whole numbers, i.e. a value of 0% does not imply that no participant gave this reply but rather that less than 0,5% of the participants chose this answer category; N=12,064.

Figure 15: Experience with renting / leasing or buying second hand by age, education and income (in %)



Notes: The question was Q3.3a: "For each of the products below, have you rented or leased such a product, or purchased a product second hand, in the last 5 years?". For better readability percentages in the figure are reported as whole numbers, i.e. a value of 0% does not imply that no participant gave this reply but rather that less than 0,5% of the participants chose this answer category; N=12,064.

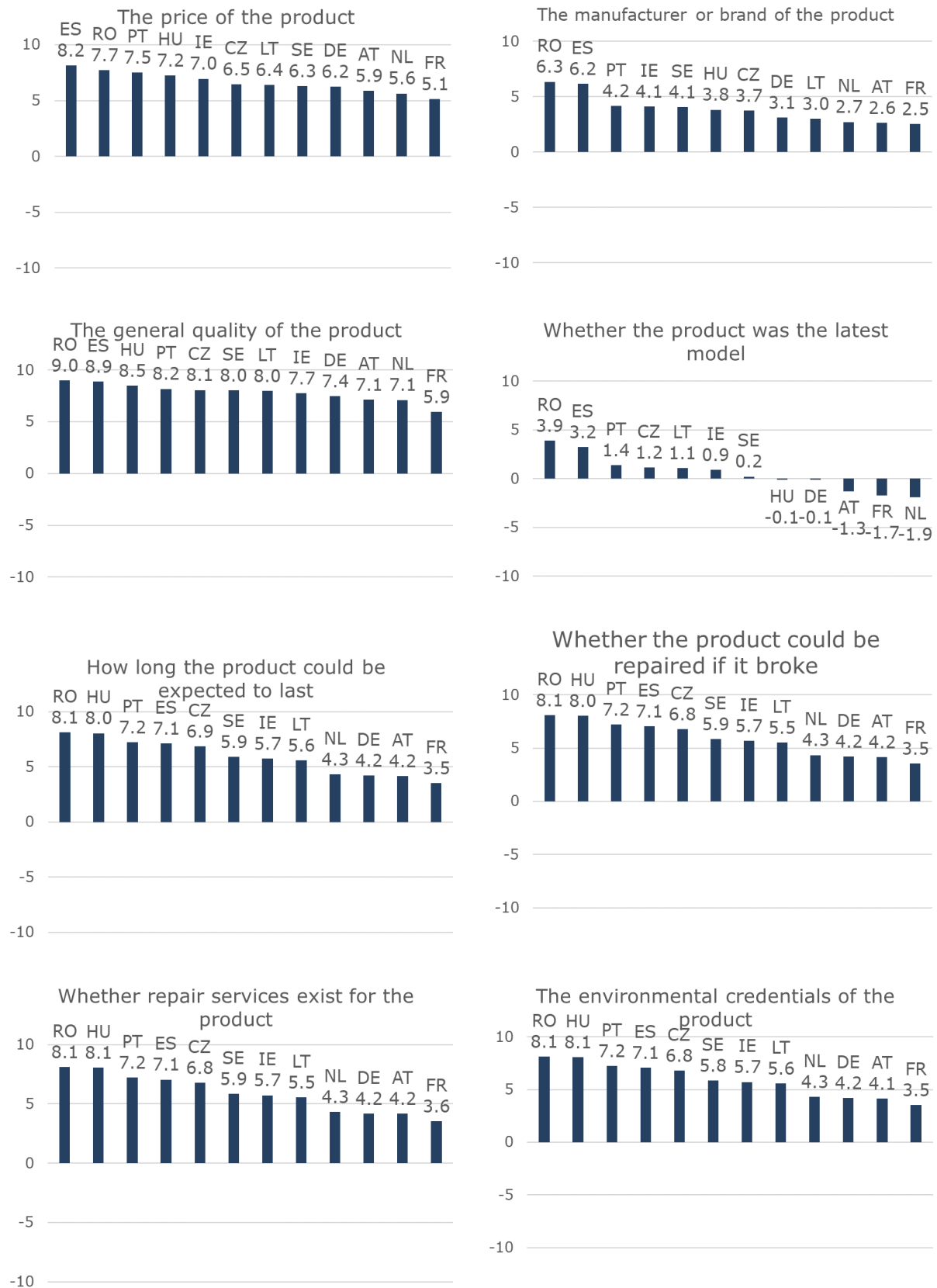
Table 5: Importance of certain factors in purchasing decisions by product category (in %)

	Dishwasher	Vacuum Cleaner	TV	Mobile phone	Coat or jacket
The price of the product					
None at all	2.4	2.1	1.7	2.6	2.0
Very little	5.6	7.7	5.4	5.6	7.0
A bit	29.3	38.0	31.9	29.5	32.4
A lot	50.3	50.2	59.8	60.1	57.3
Don't know	12.5	1.9	1.3	2.3	1.4
The manufacturer or brand of the product					
None at all	6.1	5.9	5.7	4.7	19.5
Very little	11.4	13.5	11.9	10.1	22.0
A bit	35.8	38.8	37.1	32.6	36.7
A lot	34.2	39.7	43.3	50.0	19.7
Don't know	12.5	2.1	1.9	2.6	2.1
The general quality of the product					
None at all	2.5	1.0	0.9	1.6	1.6
Very little	2.6	3.8	3.7	2.9	4.0
A bit	19.2	22.8	24.4	24.2	30.1
A lot	63.2	70.3	69.1	68.9	62.6
Don't know	12.5	2.1	1.9	2.4	1.8
Whether the product was the latest model or trend					
None at all	18.5	20.9	14.4	16.3	20.9
Very little	25.3	29.6	22.3	23.5	23.2
A bit	30.2	32.6	39.1	34.7	35.2
A lot	12.9	14.6	22.1	23.1	18.6
Don't know	13.1	2.3	2.1	2.5	2.1
How long the product could be expected to last					
None at all	3.6	2.7	3.5	4.2	9.9
Very little	5.2	9.0	9.5	10.2	15.7
A bit	25.3	32.0	33.0	36.0	38.6
A lot	51.7	52.5	50.3	45.6	32.8
Don't know	14.2	3.8	3.8	4.0	3.0
Whether the product could be repaired if it broke					
None at all	6.1	8.4	9.5	10.0	35.5
Very little	12.0	20.4	17.2	19.8	24.7
A bit	33.3	35.3	36.7	36.5	24.1
A lot	34.2	31.7	32.7	29.6	11.4

	Dishwasher	Vacuum Cleaner	TV	Mobile phone	Coat or jacket
Don't know	14.3	4.2	3.8	4.1	4.4
Whether repair services exist for the product					
None at all	7.5	11.7	10.8	13.0	47.6
Very little	13.1	19.6	19.1	20.5	20.3
A bit	32.6	36.2	34.7	34.4	20.1
A lot	32.3	28.3	32.4	27.5	7.3
Don't know	14.5	4.2	3.0	4.6	4.7
The environmental credentials of the product					
None at all	5.3	7.5	10.5	16.6	24.0
Very little	11.3	20.3	21.3	25.1	26.2
A bit	33.1	41.0	39.5	35.2	31.6
A lot	36.7	28.0	25.2	17.5	13.7
Don't know	13.5	3.1	3.5	5.5	4.5
No. of observations	4,848	4,096	4,855	4,893	4,883

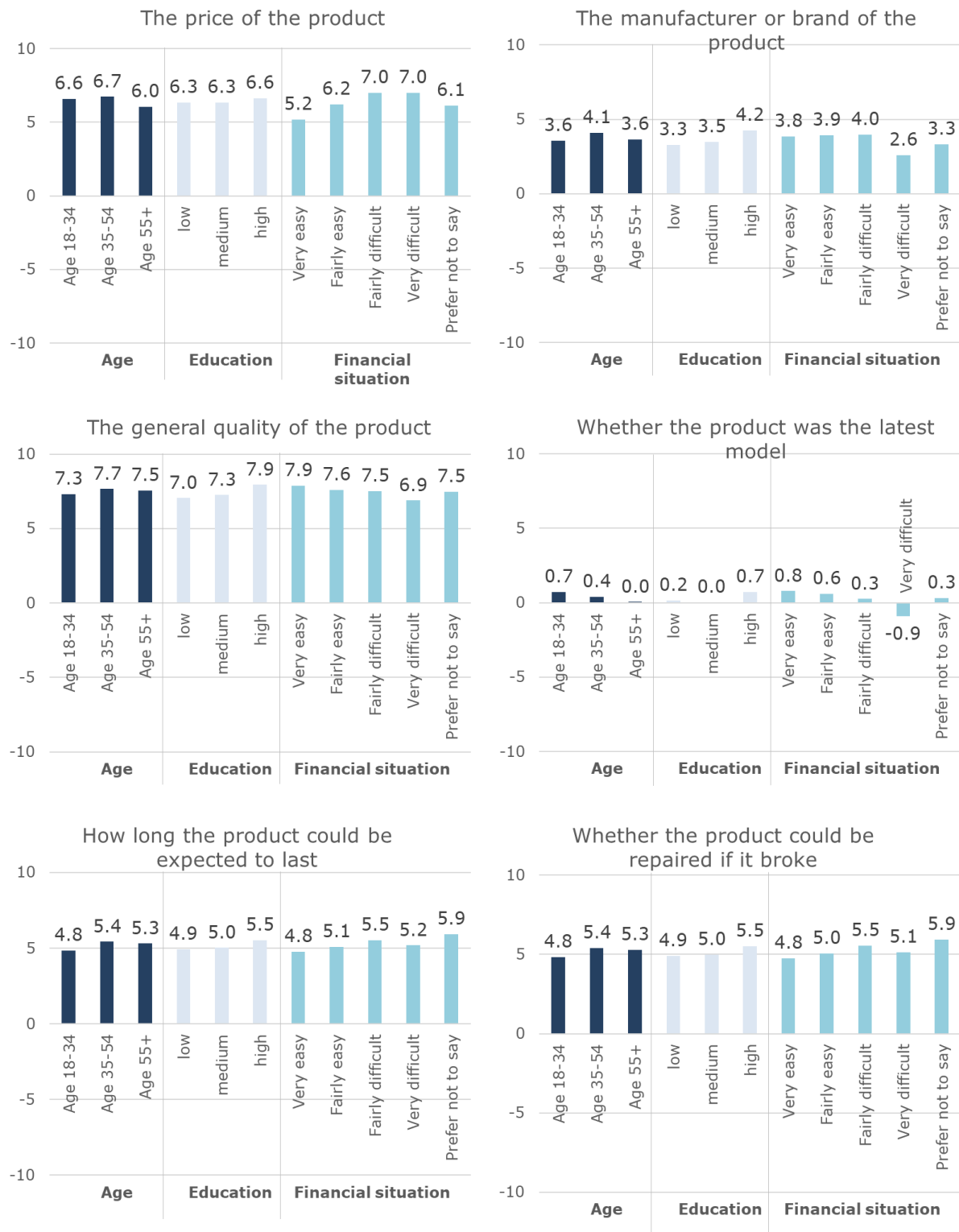
Notes: The question was Q3.4a: "Thinking of the last time you bought a [dishwasher / vacuum cleaner / television / smartphone / coat], to what extent did the following influence your choice of product? Please answer on a scale from 1 (meaning "None at all") to 4 (meaning "A lot")."

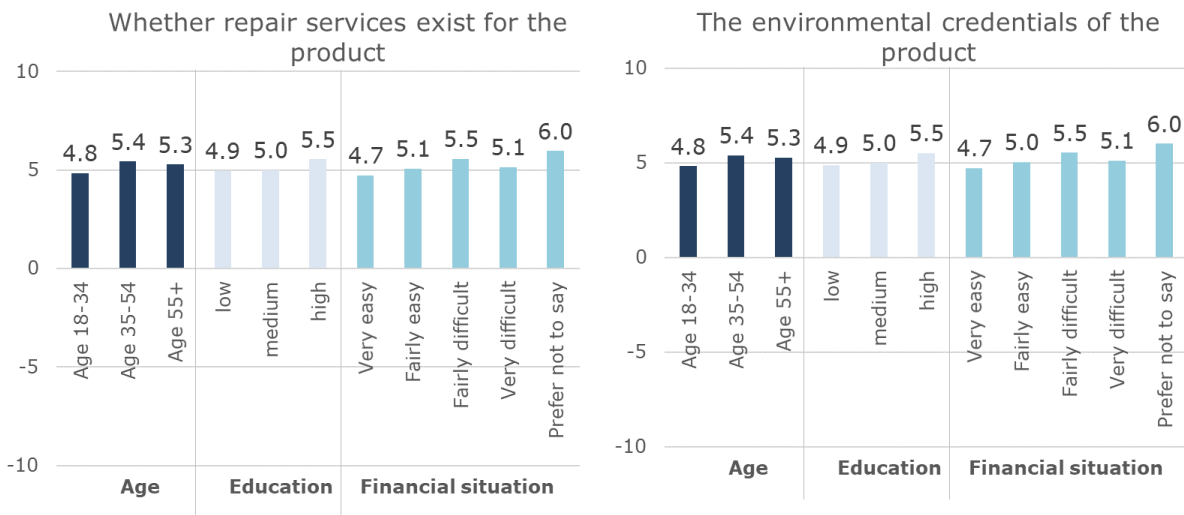
Figure 16: Importance of certain factors in purchasing decisions by country (average)



Notes: The question was Q3.4a: "Thinking of the last time you bought a [dishwasher / vacuum cleaner / television / smartphone / coat], to what extent did the following influence your choice of product? Please answer on a scale from 1 (meaning "None at all") to 4 (meaning "A lot")." In order to calculate averages answer categories were re-labelled with "a lot" corresponding to a value of +10, "a bit" corresponding to a value of +3 1/3, "very little" corresponding to a value of - 3 1/3 and "not at all" corresponding to a value of - 10. Average values above 0 correspond to rating a factor to (rather) having an influence on the choice while values below 0 correspond to a rating a factor to (rather) not having an influence on the choice; N=12,064.

Figure 17: Importance of certain factors in purchasing decisions by age, education and income (average)





Notes: The question was Q3.4a: "Thinking of the last time you bought a [dishwasher / vacuum cleaner / television / smartphone / coat], to what extent did the following influence your choice of product? Please answer on a scale from 1 (meaning "None at all") to 4 (meaning "A lot")." In order to calculate averages answer categories were re-labelled with "a lot" corresponding to a value of +10, "a bit" corresponding to a value of +3 1/3, "very little" corresponding to a value of -3 1/3 and "not at all" corresponding to a value of -10. Average values above 0 correspond to rating a factor to (rather) having an influence on the choice while values below 0 correspond to a rating a factor to (rather) not having an influence on the choice; N=12,064.

Table 6: Expectations on durability by product category (in %)

	Vacuum Cleaner	Dish-washer	Tele-vision	Mobile Phone	Coat or Jacket
Less than 1 year	1.0	0.6	0.7	1.4	2.0
More than 1 but less than 2 years	2.4	1.6	1.4	6.1	5.6
More than 2 but less than 4 years	10.6	5.0	4.5	38.2	24.7
More than 4 but less than 7 years	27.1	17.6	20.3	34.9	26.4
More than 7 but less than 10 years	27.0	29.1	31.4	10.3	14.9
More than 10 but less than 15 years	21.2	28.5	28.3	4.2	11.3
More than 15 but less than 20 years	5.1	7.4	7.3	0.9	4.4
More than 20 years	2.4	2.9	2.8	0.8	5.0
Don't know	3.2	7.2	3.2	3.4	5.7

Notes: The question was Q6.3: "For how long would you expect the following products to last on average under normal use conditions, in terms of the number of years before they need to be replaced? By 'normal use conditions' we mean normal frequency of use and taking into account usual maintenance, servicing and small repairs of the product. Don't worry if you do not know exactly – please provide your best estimate for each product."; N=12,064.

8. Measuring willingness to pay

There are two general survey-based approaches to estimate WTP: **contingent valuation** and **choice modelling**. Both use hypothetical market scenarios and seek to elicit WTP for these different scenarios.

- **The contingent valuation method** asks respondents (more or less) directly for their maximum WTP for the good under consideration. This widely used method was also used in the REFIT study. Despite its popularity, the method is easily prone to bias.
- **Choice modelling via a choice experiment** elicits WTP by asking participants to choose between different 'scenarios' for the good under consideration with systematically different attributes (e.g. durability) and prices. Prices and product characteristics are thus chosen systematically by the experimenter. Participants do not indicate a price they would pay for each product, but rather indicate which product they prefer among those presented. WTP is estimated by comparing the preferred products from different respondents who would have seen slightly different sets of products. This method is thus less prone to bias and also avoids so called 'protest responses' (i.e. where respondents spuriously report a WTP of €0 due to some objection to the question).

The behavioural experiment in this study used a choice modelling approach.

8.1. Choice modelling

The crux of choice modelling is systematically designing the sets of choices which different groups of respondents were presented.

In the presented study every respondent was asked to select their preferred product out of a selection of 6 products. The method showed different price-durability combinations in the 6 products to different respondents. For example, some respondents saw a more expensive price for a very durable product; others saw a lower price. Some saw products with higher, others with lower durability.

WTP was then estimated, using statistical methods as described below, by pooling responses across respondents.

Hence, it was of key importance to carefully design these choices (i.e. selections of 6 products to choose from). The main design stages were:

- **Selecting the attributes of the good:** For the present study these were price, durability and reparability. Other attributes that may have been important for respondents' choices but important for this study were pictures of the products and brand names, which were varied randomly and independently of price, durability and reparability.
- **Assigning levels to the attributes:** Different realistic and meaningful levels for prices, durability and reparability were calibrated using market data and country expert input for the products under examination. The obtained ranges for prices, durability and reparability were calibrated in a way that well represented ranges present in the different product markets. This ensured high relevance and realism of the task for respondents which in turn should safeguard the external validity of the findings of this study.
- **Creating alternative descriptions of the good:** This meant generating the universe of all possible price-durability-reparability-picture-brand combinations. This set of alternative descriptions depended on the number of attributes and attribute levels (e.g. 6 price levels, 4 levels each for durability and reparability, 6 product brands and pictures). Since this 'universe' was very large, it was subsequently reduced to a more manageable size.
- **Constructing the specific choices that were presented to respondents:** This meant populating the mock-comparison website with the different price-durability-reparability-picture-brand combinations such that different groups of respondents saw systematically different sets of 6 products to choose from. This step thus reduced the total set of choices from the full universe of possibilities to the choices that were actually presented to respondents. When doing this, best practise statistical methods were followed, namely the use an 'orthogonal fractional factorial design'. **This**

essentially ensured that attributes were statistically independent (i.e. uncorrelated) and that the full choice set was covered by the subset of choices included in the experiment. In the final experiment, there was no correlation between prices, durability and reparability of products.

The final design was furthermore balanced i.e. each alternative choice (of 6 products) appear roughly an equal number of times. If the design had not been balanced, this could have resulted in biased results simply because a particular price-durability/reparability combination was shown more often.

8.2. Data analysis

In choice modelling, regression analyses are required in order to arrive at WTP estimates. WTP estimates cannot be derived as a simple average.¹⁰

We employed the most established model, namely the Multinomial (Conditional) Logit model.¹¹ Essentially, the model estimates the likelihood that a specific product was selected and from the parameter estimates a WTP for each attribute can be derived. This means that we estimated a binary choice model – i.e. a model where the dependent variable attained either the value 1 or the value 0:

- if an option was chosen by a respondent during the choice experiment then the dependent variable takes the value 1 (for that observation), otherwise it takes the value 0; and
- the explanatory variables in the model include the attributes of the options (e.g. price, picture, brand name) and respondent characteristics (e.g. socio-demographic characteristics).

The underlying theory is that respondents would gain utility (or satisfaction) from the options presented to them in the choice experiment and, at each choice, they would select the option that maximises their utility. The conditional logit model expresses the utility that respondent 'n' gains from option 'i' as:

$$U_{ni} = \beta_1 x_{1i} + \dots + \beta_M x_{Mi} + \varepsilon_{ni} \quad (1)$$

Where x_{1i}, \dots, x_{Mi} are the explanatory variables of the model, which describe the attributes of option i (including the price of the option); β_1, \dots, β_M are utility coefficients, which reflect the importance of the underlying attributes; and ε_{ni} is a random (i.e. stochastic) error component, which captures the unobserved factors that influence the respondent's utility.

In the case of this study, the attributes would be the durability, reparability, price and (less important) name and pictures of the products, and the corresponding coefficients (β_1, β_2, \dots etc) would reflect their importance.

Once the model has been estimated, WTP estimates were computed directly from the coefficients. Specifically, marginal WTP was computed as minus the ratio of two coefficients.¹² For example, WTP for an increment in durability was calculated as:

$$WTP_{1 \text{ additional year of durability}} = -\frac{\beta_{durability}}{\beta_{price}} \quad (2)$$

¹⁰ This again marks a key difference to the method used in the REFIT study.

¹¹ The reason that a conditional logit model is preferred, instead of a standard logit model, relates to the specific nature of choice experiment data. In particular, when analysing choice experiment data, it is necessary to take into account the fact that respondents' choices are conditioned. That is, respondents are required to make a choice between particular alternatives, whereas in reality they would perhaps not choose any of the alternatives and may choose an alternative other than those presented to them in the experiment. The conditional logit model makes allowance for this characteristic of the data (since it models conditional probabilities, rather than unconditional probabilities).

¹² The way marginal WTP is computed is analogous to computing the marginal rate of substitution (MRS) between two goods with the only difference being that one of the attributes is price which introduces currency units.

Where $\beta_{\text{durability}}$ was the estimated coefficient for the durability attribute, and β_{price} was the estimated coefficient for price.

To understand the logic behind equation (2), note that this equation implies that the marginal WTP for the attribute is the rate at which an individual is willing to give up the attribute in exchange for a change in the price, whilst keeping their overall utility constant. This is because, in order for a change in the price (denoted ' dp ') to precisely compensate for a change in attribute x_m (denoted ' dx_m '), the corresponding change in utility (denoted ' dU ') must be zero. That is:

$$dU = \beta_m dx_m + \beta_p dp = 0 \quad (3)$$

which may be rearranged to give equation (2).

9. Allocation into treatment variants and correlation

In order to collect data to answer all research questions of the terms of reference, the total number of treatment groups was rather large compared to the overall sample size. To maintain scientifically robust sample sizes per treatment group the experiment has a full factorial setup.

This means that participants were assigned to a specific group in one treatment, say to the CE information treatment, and independent from this first assignment, they were also assigned to a group within the other treatments, say within the claims treatment. In the analysis, treatment effects were presented for a particular treatment while averaging effects across all other treatments. This assured that the sample was never split into more than six groups (in case of the information treatment) during the analysis.

This is good practice in experimental research and a validated approach for measuring so called local average treatment effects.¹³ We have previously used this approach, for example, in studies for the Commission and the UK Financial Conduct Authority.¹⁴

The theoretical argument that validates the approach is that for an experiment to identify the causal effects of a particular treatment, the treatment variable must be uncorrelated with the outcome variable. This is achieved by random assignment of participants to treatments. Furthermore, so called 'selection bias' can appear if other covariates such as demographics, or other effects caused by other treatments, are correlated with the treatment assignment. This bias could therefore appear if, for example, mostly older participants were assigned to a particular treatment. It would then be difficult to disentangle the effect of the treatment from the effect of age. However, in our design, due to the fully random and independent assignment of participants to all treatments, all covariates (including other treatments) were uncorrelated with the treatment under examination.

Mathematical derivation of the argument

In mathematical terms, the measurement of the treatment effect derives as follows.

The outcome variable in the experiment could vary with the treatment status. It can be expressed as:

$$Y_i = \begin{cases} Y_{1i} & \text{if } D_i = 1 \\ Y_{0i} & \text{if } D_i = 0 \end{cases}$$

$$(1) \quad Y_i = Y_{0i} + (Y_{1i} - Y_{0i})D_i$$

Where Y_i is the outcome (or independent) variable (e.g. whether an individual chooses a product with high durability), D_i is the treatment status (e.g. assigned to seeing durability information on the EU label or not), Y_{0i} stands for the outcome of an untreated individual (e.g. durability of chosen product by an individual who did not see durability information on the EU label), Y_{1i} respectively for a treated (e.g. durability of chosen product by individual who saw durability information on the EU label).

This expression can be re-written in form of a regression model, and again be expressed in terms of the above equation.

$$(2) \quad Y_i = \alpha + \rho D_i + \varepsilon_i$$

$$(3) \quad Y_i = E(Y_{0i}) + (Y_{1i} - Y_{0i})D_i + Y_{0i} - E(Y_{0i}) \quad ^{15}$$

¹³ See Imbens and Angrist (1994) 'Identification and Estimation of Local Average Treatment Effects', *Econometrica*. As well as Angrist and Pischke (2008) 'Mostly Harmless Econometrics – An Empiricist's Companion', Princeton University Press.

¹⁴ Two recent example studies are: EC (2017) 'Study on consumers' decision making in insurance services: a behavioural economics perspective'; FCA (2018) 'Asset Management Market Study – Experimental Consumer Research and Focus Groups'.

¹⁵ To transform the equation into its final form, equations (1) and (2) are combined, and some algebraic and statistical manipulations are applied, such as expected values (e.g. $E(Y_{0i})$).

Where ε_i is the error term of the regression.

The treatment effect, i.e. the difference in the outcome variable for treated vs untreated respondents, is then identified by varying the treatment status D_i between 0 and 1, such that:

$$E(Y_i|D_i = 1) - E(Y_i|D_i = 0) = \rho + E(\varepsilon_i|D_i = 1) - E(\varepsilon_i|D_i = 0)$$

where the latter term describes the selection bias. Because of random assignment to treatments, D_i is by design uncorrelated with any other characteristics of the respondent (see Table below which proves that correlations across treatments were virtually 0 in this experiment), hence also with ε_i . The selection bias is thus equal to zero, and ρ is the treatment effect.

The same argument holds for an extended version of the regression model including also other covariates such as respondent characteristics (e.g. demographics) or other treatments ($X_i'\gamma$):

$$Y_i = \alpha + \rho D_i + X_i'\gamma + \varepsilon_i$$

The presence of other covariates which influence the outcome have an effect on the treatment only through the introduction of general noise (i.e. variance). This could potentially reduce the overall power of an estimation. However, the additional noise is reduced (i.e. controlled for) if the covariates are included in the regression.¹⁶

Correlation analysis of different treatments in the two experiments

Table 7 below shows the correlations for between different treatment variants. Variants of the same treatment are shown in the table below as consecutive rows of bolded or italicised names.

For each combination of treatment variant, the correlation was estimated taking into account the binary nature of the variables.¹⁷ Correlations for variants within the same treatment are not shown since they were perfectly correlated by design.

The table shows that allocation to variants between treatments was uncorrelated. The largest correlation was 0.04 and the smallest was -0.05. The average, absolute¹⁸, correlation was 0.01. No correlation was statistically significantly different from 0.

This rules out the possibility that the results from the experiment were biased through using multiple treatments simultaneously. Because allocations were uncorrelated, the groups of respondents in variants within the same treatments were roughly the same. Therefore, in comparing the difference in effectiveness of variants, no bias could have resulted.

¹⁶ See pp. 10- 18 of this PDF version of the Angrist and Pischke (2008) 'Mostly Harmless Econometrics – An Empiricist's Companion' book, in particular the first paragraph of p. 18 for the argument regarding the introduction and controlling for covariates.
http://www.development.wne.uw.edu.pl/uploads/Main/recrut_econometrics.pdf.

¹⁷ Correlation were estimated as tetrachoric correlations. A standard Pearson correlation would overestimate the true correlation in this case.

¹⁸ That is, treating negative values as if they were positive. This is necessary because positive and negative values would cancel each other out.

Table 7: Correlations between allocations into treatment variants

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) No information																
(2) Durability only																
(3) Reparability only																
(4) Durability and reparability																
(5) Manufacturer warranty																
(6) Expected lifetime																
<i>(7) Mini-label</i>	-0.02	-0.02	0.02	0.01	0.02	-0.01										
<i>(8) Full label</i>	0.02	0.02	-0.02	-0.01	-0.02	0.01										
(9) No claim	-0.01	-0.01	-0.01	-0.01	0.02	0.01	-0.01	0.01								
(10) Savings claim	0.01	-0.01	0.02	0.00	-0.01	0.00	0.00	0.00								
(11) Social claim	0.00	0.02	-0.01	0.01	-0.01	-0.01	0.01	-0.01								
<i>(12) No effort</i>	-0.02	0.03	0.00	-0.01	-0.01	0.00	-0.01	0.01	-0.03	0.00	0.03					
<i>(13) Effort after repair</i>	0.01	0.00	0.02	-0.03	-0.02	0.02	-0.02	0.02	0.02	-0.01	-0.01					
<i>(14) Effort after replace</i>	0.01	-0.03	-0.02	0.04	0.02	-0.02	0.03	-0.03	0.01	0.01	-0.03					
(15) Not VAT exempt	0.00	0.00	-0.01	0.02	-0.03	0.01	0.02	-0.02	0.02	0.00	-0.01	0.03	-0.02	-0.01		
(16) VAT exempt	0.00	0.00	0.01	-0.02	0.03	-0.01	-0.02	0.02	-0.02	0.00	0.01	-0.03	0.02	0.01		
<i>(17) Manufacturer/original</i>	-0.01	0.02	0.01	-0.05	0.00	0.02	0.00	0.00	-0.01	0.00	0.01	0.01	-0.01	0.00	-0.01	0.01
<i>(18) Manufacturer/non-original</i>	0.00	-0.03	-0.03	0.04	0.01	0.01	0.00	0.00	-0.02	0.02	0.00	0.01	-0.01	0.00	0.02	-0.02
<i>(19) Independent/original</i>	-0.01	0.02	0.01	0.00	0.00	-0.03	0.01	-0.01	0.01	0.00	0.00	0.03	-0.02	-0.01	0.00	0.00
<i>(20) Independent/non-original</i>	0.02	-0.01	0.00	0.00	-0.01	0.00	-0.01	0.01	0.02	-0.01	-0.01	-0.05	0.03	0.01	-0.01	0.01

10. Regression analysis

Regression analysis was used to provide a rigorous examination of the repair experiment (section 4.5 of the main report) and the purchasing experiment (section 6.5 of the main report). This annex provides an overview of the purpose and methodology of this analysis.

The regression analysis in this report looked at the following outcome, or independent, variables:

Repair experiment

- the number of times a respondent chose to repair rather than replace a product ("number of repair") in the three rounds of the repair experiment; and
- whether a respondent chose a second hand rather than a brand new product at least 50% of the times they decided to replace the defective product ("2nd hand proportion").¹⁹

Purchasing experiment

- preference for durability as defined in section 2.7.2 of the main report ("durability preference");
- preference for reparability as defined in section 2.7.2 of the main report ("reparability preference"); and,
- an overall CE preference, defined as the average of the preference for durability and reparability ("CE preference") with equal weight on both characteristics.

The variable "2nd hand proportion" is binary, taking values 0 or 1, whereas all other variables are ordered, categorical variables²⁰. The levels of an ordered, categorical variable represent a category rather than a number, and these categories have an inherent ranking. For example, the levels of the variable "durability preference" are 'high', 'intermediate' and 'low'. These levels are not numbers, but the level 'high' is in some ways better than 'low'. Furthermore, the difference in a shift from 'low' to 'intermediate' might not be the same as a shift from 'intermediate' to 'high'. The following analysis takes this possibility into account.

To analyse the variable "2nd hand proportion", logit regressions are used. To analyse the ordered, categorical variables, ordered logit regressions are used. These regressions relate one outcome variable with possibly multiple independent variables, or regressors. The resulting coefficients for each regressor can be exponentiated to derive odds ratios.

These odds ratios need to be compared to 1. If an odds ratio exceeds 1, then the regressor has a positive influence on the outcome variable. If an odds ratio is smaller than 1, then the regressor has a negative influence on the outcome variable.

The purpose of the regression analysis is threefold. Firstly, regression analysis can establish whether results are robust to the inclusion of other variables (i.e. socio-demographics, country effects, personal attitudes). In this report, regression looks at models where:

- every treatment is regressed on the outcome variable separately, providing a sense check of the results of from tabulations and pairwise z-tests;
- the different treatments are included simultaneously as control variables;
- only the personal characteristics (but no treatments) are taken into account; and,

¹⁹ For respondents who decided to replace only once out of the three rounds of the experiment, the indicator takes the value 1 if the respondent decided to replace the defective with a second hand product. If a respondent decided to replace twice, the indicator takes the value 1 if they purchased the second hand product at least once. If a respondent decided to replace in all three rounds, they must have decided to purchase second hand at least twice in order for the second hand indicator to take the value of 1.

²⁰ The levels for the variable "number of repair" do represent numbers. However, treating this variable as an ordered, categorical variable allows for non-linearity in the analysis. The difference between choosing repair once or twice might not be the same as the difference between choosing repair three times or four times.

- all treatments *and* personal characteristics are taken into account.

The tables with regression results in the main text show the results for the second and fourth regression model outlined above. Furthermore, the tables focus on the results for treatments. These treatments are the primary interest for the experiments.

Secondly, regression analysis allows for a further investigation of whether different treatments impacted each other, i.e. whether one treatment increased or decreased the effectiveness of another treatment. This is done through multiplying, or interacting, the variables representing different treatments and checking the statistical significance of these interaction terms. For simplicity, treatments were interacted pairwise.

Thirdly, and similar to the above, interactions also allow the investigation of whether the effectiveness of treatments differed for different personal characteristics (i.e. whether treatment effects were stronger/weaker for specific groups of respondents).

11. Experiment incentives

The incentive system in the experiment was based on Ipsos' points system. Ipsos' points system is the standard way that Ipsos' panellists are incentivised to take part in surveys (hence all our respondents would have been familiar with it). Respondents earn points which have a real-world value to them. This system is in line with best practice in online panel research and ensures that participants pay attention and provide quality answers throughout. In the experiment the number of points earned depended on the respondents' choices made within the experiment.²¹

All respondents received a compensation in Ipsos points for their participation in the survey and experiment. The compensation for participation amounted to roughly €1-€2 depending on the country. Furthermore, they could earn additional points, which converted into €0.50-€1, through their choices made in each of the experiments as explained in the following.

Incentives in the purchasing game

In every round of the purchasing game respondents received a 'budget', denominated in their local currency, which they could use to purchase products in the game. Whatever they did not spend from their budget they got to 'keep' and this was converted into points.

There was a specific conversion rate between their remaining budget in local currency and the number of points the respondent received. For example, for every €100 they had left at the end of the experiment, they received 1 point.

Respondents also received 'benefits' from 'using' a product if they purchased that product (as they would in reality). These benefits also took the form of additional points in the experiment. *Ceteris paribus*, products that 'worked' for longer (i.e. were more durable) yielded more points.

However, as is the case in reality, respondents were not told for precisely how long each product would last and so they did not know the precise level of benefits they would receive from each product. Instead, they were given some indication of how long the product would work, via the different information treatments. Specifically, at the start of the exercise respondents were told:

"Like in reality, you will get some 'benefits' from using a product, like the pleasure of watching a film on a nice TV, or looking good in a new coat. These benefits, in form of additional points, accrue over time. You might get some indication on how long the product will work well, but like in reality, this information might not be accurate. The more benefits you get from a product, the more points you earn."

The actual level of benefits, i.e. points, they received for each product they purchased was revealed to the respondents at the end of the task. These values were predefined in a database which the experiment script drew upon (but as noted above were not known precisely to respondents). Specifically, at the end of the task respondents were told:

"You purchased a [vacuum cleaner / dishwasher / smartphone / coat / TV] and paid (..... points). The [vacuum cleaner / dishwasher / smartphone / coat / The TV] lasted for a total of without requiring repairs. The [vacuum cleaner / dishwasher / smartphone / coat / TV] gave you total benefits of points. Therefore, for this round you earned points."

²¹ The exception was Ireland. In Ireland the panel works with a different reward system, and respondents do not collect "points", but are simply paid a specific amount for each participation. They are paid in increments of 50 cents, and the panel provider explained that it was not possible to give a different amount (e.g. 43 cent). For that reason, respondents in Ireland were informed about "task points" and an extra sentence was added to explain the rounding that would be applied (so that respondents were either paid nothing extra, 50 cent extra of 1 euro extra). In the all other countries, there was a direct correspondence between survey points and monetary value (e.g. 43 survey points=43 eurocent paid extra).

Incentives in the repair game

The incentive system in the repair game closely mirrored that used in the purchasing game; respondents were given a 'budget' (which in this game they could use to repair or replace a product), the remainder of which was at the end converted into points and received 'benefits' in the form of points from 'using' a well-functioning product.

Products that 'worked' for longer (i.e. were more durable) gave more points but, like in the purchasing game, respondents were not told exactly how long each product would last and so did not know the precise level of benefits they would receive from each product. Instead, the different information treatments gave them some indication of how long the product would work for.

The level of benefits (i.e. points) that the respondents were awarded for each product they repaired or replaced was revealed to them at the end of the task. These values were drawn by the script from a predefined database. Specifically, at the end of the task respondents were told:

"You purchased a [vacuum cleaner / dishwasher / smartphone / coat / TV] and paid (..... points). The [vacuum cleaner / dishwasher / smartphone / coat / The TV] lasted for a total of without requiring repairs. The [vacuum cleaner / dishwasher / smartphone / coat / TV] gave you total benefits of points. Therefore, for this round you earned points."



■ Publications Office