RepairMonitor

Analysis results 2019

Repair Café International Foundation

May 2020

Colophon

RepairMonitor | Analysis results 2019

May 2020

Authors	Martine Postma/Repair Café International Foundation, Sarah de Boer/ Repair Café International Foundation, Chantal van Zeeland/Repair Café International Foundation
Image	Martine Postma (photo front page), The Noun Project (icons p. 13), Repair Café Saskatoon, Canada (photo sewing machine p. 28), Repair Café Forest Row, UK (photo radio p. 28)
Contact	info@repaircafe.org
License	This report is available under a Creative Commons 4.0 license

REPAIR CAFE

Repair Café International Foundation is the engine behind the world-wide successful concept of Repair Café: repair your own stuff together with handy people from your neighbourhood. This is good for the environment and for the social cohesion in your local community. The Foundation has been spreading this concept since 2010 and with results! Almost 2000 groups of volunteers organise Repair Café events in 36 countries. This number is growing every day.

Since 2017, the Foundation is also involved in collecting data about the repairs during repair events. For this purpose, the Foundation developed the RepairMonitor, an online tool which volunteers can use to document what kind of products they repair in their Repair Café. This way it is possible to get insight in the repairability of products used in our daily life and how to improve their repairability.

Website: https://repaircafe.org/
Contact: info@repaircafe.org
Office address: Panamalaan 4F, 1019 AZ Amsterdam

Summary

Preface

The Repair Café International Foundation has analysed the data entered in the RepairMonitor in 2019, The RepairMonitor is the online tool in which Repair Café volunteers keep track of their repair data. In this monitor, volunteers of 67 Repair Cafés (38 from the Netherlands, 9 from France, 7 from the UK, 4 from Australia, 3 from Germany, 3 from Canada, 2 from Belgium, and 1 from the US) entered data on a total of 13,609 repairs. This report analyses how, and how quickly, products break down and which factors hinder a successful repair. The aim of this report is to identify what needs to be done to make products more repairable, so they will contribute to a circular economy.

Analysis

The ten products most presented for repair in 2019 are coffee makers, trousers, vacuum cleaners, lamps, bicycles, clocks, sewing machines, computers/laptops, radios, and coats. Other often repaired products are irons, jewelry, electric kettles, and knives/scissors.

The ten most common brands in the RepairMonitor are Philips, Sony, Bosch, Tefal, Miele, Nespresso, Samsung, Miele, HP, Black & Decker, and Siemens. Other often repaired brands are Braun and Gazelle.

The success rate of the repairs is 63%, two percent less than in 2018. This is lower for the repair of electric/electronic products (53%; in 2018 this was 56%), and considerably higher for products without an electrical system (85%); the same as in 2018). Approximately 68% of all repairs concerned electric/electronic products.

Visitors come with very diverse problems to the Repair Café. Often an item is not really broken, but has a smalldefect, such as a pair of trousers that is too long, the filter of a vacuum cleaner is blocked, blunt scissors or empty batteries in a clock.

The repairers identified various reasons why repairs do not succeed. The most mentioned reason is the lack of spare parts. Problems with opening a product is also often mentioned. Other obstacles to repair are: the repair is too expensive, the repair takes too much time, the product is worn out, the cause for not functioning can’t be found or the repair has failed.

In 42% of the registered repairs, it is indicated how old a product is (approximately). Of these items, 84% is at the most twenty years old, 55% less than ten years old. Of the ten most common products, coffee machines are, on average, the least old when they are brought to the Repair Café; 75% of the coffee machines with known age is younger than 10 years old.

Clocks are, on average, the oldest; 41% of the clocks with a known age is older than 50 years.

Repairers appear to make little use of repair information. In 7,994 of the 13,609 repairs (59%) did the repairers answer the question about the use of repair information. Of these 7,994 repairs, the majority (6,192) did not use repair information, while in 1,228 cases the repairer searched for information, but couldn't locate it. Repair information was used in only 574 repairs. This is 4% of all registered repairs in 2019. In one-third of the cases, the repair information was obtained from the manufacturer. Tips, photos, videos, and other types of information were often made available by colleague repairers.

Conclusions and recommendations

Repair always the first step
Of all the repairs described in the RepairMonitor, 63% was successful. This shows that repair makes sense and should always be the first step when something breaks.

More emphasis on maintenance
Many of the problems described in the RepairMonitor are the result of poor maintenance: cleaning, descaling, lubricating, tightening, etc. Apparently, consumers are not sufficiently aware of the need to maintain their products. Repair Cafés make their visitors attentive to this. A public campaign could help. Producers and retailers must also emphasise the importance of maintenance more.

More repair knowledge needed among the public
The relative simplicity of problems described in the RepairMonitor demonstrates the lack of repair knowledge among the general public. More attention for repair skills and working with your hands in schools can help solve this problem. Repair Café volunteers can be deployed as supervisors/coaches.

Producer must actively support repair
According to the RepairMonitor, if repairs are unsuccessful, this is often because products cannot be disassembled, parts cannot be repaired, there are no replacement parts, and there is hardly any documentation available for repairers. The transition to a circular economy demands that producers change this. Especially the repairability of electric/electronic products must be improved.

Governments should demand repairable products
Not only for consumers and producers, also municipalities, governments, and the European Union play an important role in making products repairable. The Repair Café International Foundation, together with the Dutch environmental organisation Natuur & Milieu, already formulated earlier the following recommendations for governments. These are still valid:

- Make the provision of repair manuals by producers mandatory;
- Require the use of standard screws and other fixing materials and prohibit the gluing together of parts;
- Require longer warranty periods;
- Require that batteries and other critical, rapidly aging, and vulnerable parts can be replaced by consumers themselves;
- Require manufacturers to keep spare parts available for consumers and repairers;
- Increase taxes on raw materials and reduce taxes on (repair) labour;
- Inform consumers of the financial and environmental benefits of repairing and where to turn to for repairs;
- Ensure networking and knowledge exchanges between Repair Cafés, thrift stores, waste collection station, and other local organizations that can play a role in extending the lifespan of products.

Table of contents

Colophon **2**

Summary **3**
Preface 3
Analysis 3
Conclusions and recommendations 4

Table of contents **6**

List of figures and tables **8**
Figures 8
Tables 9

1. Preface **10**

2. Data analysis **11**
2.1. Use of the RepairMonitor 11
2.2. Most presented products and brands 12
2.2.1. Electric/electronic and non-electric/electronic products 14
2.3. Repair success 15
2.3.1. Repair success of the top ten registered products 16
2.3.2. Repair success of the top ten registered brands 17
2.3.3. Repair success of electric/electronic and non-electric/electronic products 17
2.3.3.1. Repair success rate of electric/electronic products 18
2.3.3.2. Repair success rate of non-electric/electronic products 19
2.4. Obstacles to repair 20
2.4.1 Five main reasons for repair failure 20
2.4.2 Obstacles to repair of two of the ten most registered products 22
Non-electric/electronic clocks/alarm clocks/watches 22
Printers/scanners 23
2.5. Age of products 24
2.6. Problems and defects 25
2.7. Frequently used repair solutions 26
2.8. Grades for reparability 27
2.9. Use of repair information during repair 30
2.10 Analysis results 2017-2019 31
2.10.1 Growth of the dataset 31
2.10.2 Remarkable products 32
2.10.3 Coffee makers: Senseo versus Nespresso 34

3. Conclusions and recommendations **36**
3.1. Repair always as a first step 36

3.2. More emphasis on maintenance 36
3.3. More repair knowledge needed among the general public 36
3.4. Producers must actively support repair 37
3.5. Making electric/electronic products easier to repair 37
3.6. Governments must stand up for repairable products 37

List of figures and tables

Figures

Figure 1: Participating Repair Cafes per country (2019). 11

Figure 2: Number of registered repairs per country in 2019 (N=13.609). 11

Figure 3: Registered repairs in the RepairMonitor per month in 2019. 12

Figure 4: Top ten products that were registered in the RepairMonitor in 2019 (n=5.339). 13

Figure 5: Top ten brands in the RepairMonitor in 2019 (n=2.671). 13

Figure 6a and b: Top ten registered products electr(on)ic (n = 4.136) and non-electr(on)ic (n = 2.531) in 2019 (N= 13.609). 15

Figure 7: Repair success rate of all registered products in 2019 (N= 13.609). 16

Figure 8: Repair success rate of top ten products registered in 2019 (n = 5.339). 16

Figure 9: Repair success rate of the top ten most registered brands in 2019. 17

Figure 10: Repair success rate electr(on)ic (n=9.292) and non-electr(on)ic products in 2019 (n=4.317). 18

Figure 11a and b: Repair success rate of the top ten electr(on)ic products in 2019 (n=9.292). 19

Figure 12a and b: Repair success rate top ten non-electr(on)ic products in 2019 (n=4.317). 20

Figure 13: Five main reasons why repairs were half or not successful in 2019 (n=2.177). 21

Figure 14: The top ten barriers mentioned with half or not successful repairs in 2019 (n=1.582). 22

Figure 15: Main reasons why repairs of clocks/alarm clocks/watches were half/not successful (n=62)23

Figure 16: Main reasons why repairs of printers/scanners were half or not successful in 2019 (n=64). 23

Figure 17: Year of production (estimated) of registered products in 2019 (n= 5.692). 24

Figure 18: Average (estimated) age per product group in 2019 (n=5.692). 25

Figure 19: Repair success rate per estimated period of production of registered repairs in 2019. 25

Figure 20: Grades reparability given by repairers in 2019 (n=10.160). 28

Figure 21: Average grade for reparability per success category in 2019 (n=10.160). 29

Figure 22: Average grade for reparability for top ten most registered products in 2019 (n=5.339). 30

Figure 23: Answers to the question whether repair information was used during the repair (n=7.994). 31

Figure 24: Number of registered repairs per month (2017-2019). 32

Figure 25: Notable products in the RepairMonitor from 2017-2019. 33

Figure 26: Entries of jewellery in the RepairMonitor 2017-2019. 33

Figure 27: Numbers of coffee makers registered per year (2017-2019). 34

Figure 28: Repair success rate for coffee makers (2017-2019). 35

Figure 29: Use of repair information with coffee maker repairs (2017-2019). 36

Tables

Table 1: Main problems for reparations in the top ten registered products of 2019. 26

Table 2: Main solutions for repairs in highly registered products in 2019. 26-27

1. Preface

Many countries have as objective to become a circular economy. In such an economy, products, materials, and resources are not used only once, but are re-used several times. In this way, depletion of raw material stocks can be prevented and the production of waste limited as much as possible. This is necessary to keep the earth liveable for future generations.

Repair: the best re-use strategy
Repairing, instead of throwing things away when they break, is the first step on the road to such a circular economy. Repair ensures the preservation of raw materials at the highest level, with the addition of as little energy and new raw materials as possible. As a reuse strategy, it more efficient than replacing parts or recycling.

That is why repair should be encouraged as much as possible. The Repair Café International Foundation does this already since 2009, by supporting groups of volunteers worldwide in establishing their own Repair Café: free repair events for and by neighbours in a community.

Repair Cafés make the circular economy tangible
During Repair Café events it becomes clear, time and again, how inspiring repair can be; how useful it is to preserveand spread repair knowledge; how important it is that products are designed to be repairable; and that repair manuals and spare parts are widely available. A visit to a Repair Café makes the circular economy tangible in one go. It allows people to experience that becoming circular can be fun and can contribute to our daily life. This is of great value when creating support for the circular economy.

To involve more people in repair requires extra efforts of policymakers, producers, and consumers. The Repair Café International Foundation supports these stakeholders with the identification of necessary measures. This is one of the reasons why we developed the RepairMonitor: an online tool which gives insight in the repair of products in the Repair Cafés. In this monitor, repairers can keep track of the products (types, brands, age ...) they encounter in their Repair Café, what is wrong with the product, and whether the repair was successful. They can also indicate how they perceive the repairability of the product.

In 2019, volunteers of 67 Repair Cafés in eight countries entered repair data in the RepairMonitor. Together they implemented almost 14,000 repairs. These repairs are analysed in this report. The results can be used to identify and substantiate measures to promote repairability. This is one way in which Repair Cafés contribute to the shaping of the circular economy.

2. Data analysis

2.1. Use of the RepairMonitor

In 2019, volunteers from 67 Repair Cafés in eight countries have entered repair data in the RepairMonitor. This is 3,4% of the 2000 registered Repair Cafés. An overview of the participating countries and Repair Cafés can be found in Figure 1. In 2019, the number of participating Cafés increased with 34, compared with 2018. The number of registered repairs also increased, from 7,857 in 2018 to 13,609 in 2019, an increase of 73%.

The number of registered repairs per country are visualised in Figure 2. It is clear that most repairs are implemented in Dutch Repair Cafés. This is not surprising, as the RepairMonitor was developed in the Netherlands and gradually became available in other languages during 2018. The RepairMonitor became available in French in 2019. That explains why only 70 repairs from French Repair Cafés are registered, while France, after the Netherlands, is the country with the most active participants (see Figure 1).

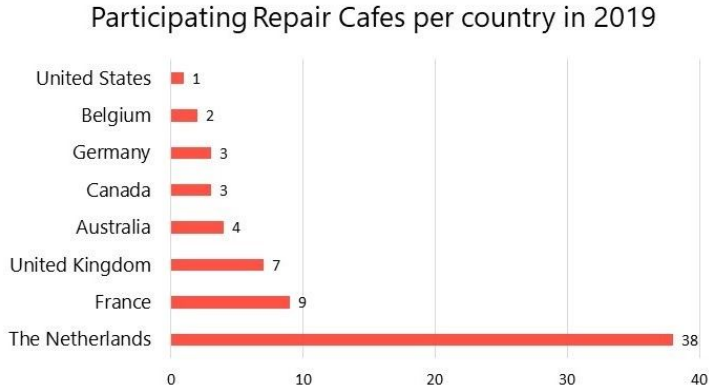

Figure 1: Participating Repair Cafes per country (2019).

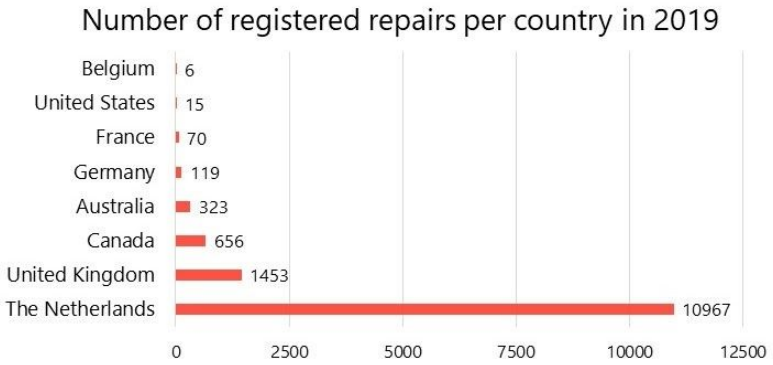

Figure 2: Number of registered repairs per country in 2019 (N=13.609).

Figure 3 visualises the percentage of repairs registered in the RepairMonitor in 2019. The sharp increase in repairs in the autumn months (September, October, November) is remarkable. It seems that many Repair Cafés are very active after the summer holiday months (July, August). In the three autumn months in 2019, about one third (36%) of all repairs are implemented. In the other months, not taken in consideration the summer holiday months, the number of repairs is stable, around 8% per month.

Figure 3: Registered repairs in the RepairMonitor per month in 2019.

2.2. Most presented products and brands

The figures below show which products and brands are most frequently offered for repair in the participating Repair Cafés. Coffee machines, trousers, and vacuum cleaners are the three products that are the most frequently presented for repair (see Figure 4). This is very similar to the top three of 2018: coffee makers, vacuum cleaners, and lamps. The top ten of the most common products for repair form 39% of the total number of items (n=13,609). In 374 cases, information about the type of product was not entered into the RepairMonitor. We have omitted these data in Figure 4.

Figure 4: Top ten products that were registered in the RepairMonitor in 2019 (n=5.339).

Philips is, just as in 2018, the most repaired brand in the RepairMonitor (see Figure 5). This is the case since the start of the RepairMonitor, in 2017. This is because Philips is the manufacturer of the Senseo, an often repaired product in Dutch Repair Cafés. It has become known that Repair Cafés are able to solve many of the problems with Senseo coffee makers. This contributed to the large number of Philips products in the monitor. The brand of 5,546 products was unknown. This result is not included in Figure 5.

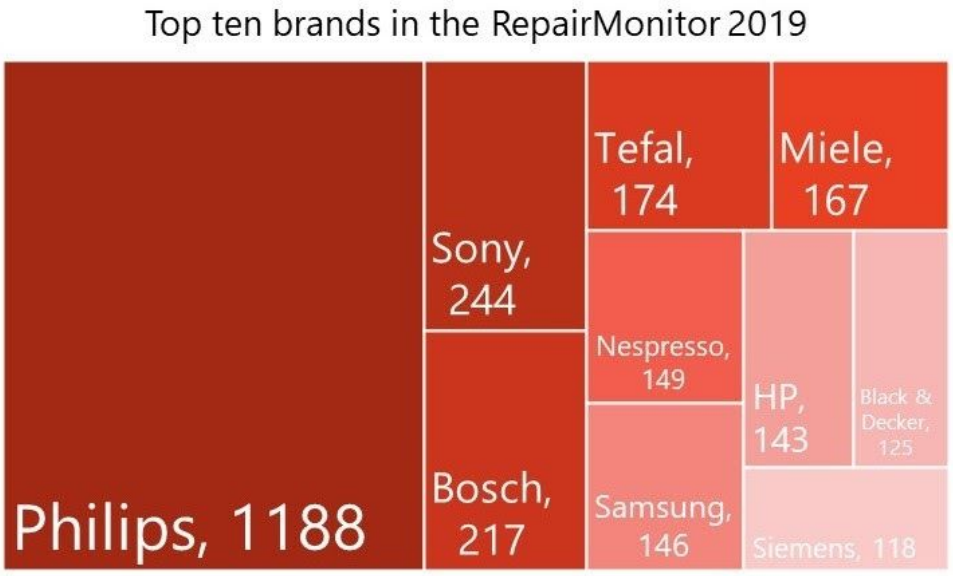

Figure 5: Top ten brands in the RepairMonitor in 2019 (n=2.671).

2.2.1. Electric/electronic and non-electric/electronic products

It is relevant to differentiate between electric/electronic and non-electric/electronic products.[1] Data in the RepairMonitor show that these two product categories are very different when it comes to repair success.[2]

In 2019, more than twice the number of electric/electronic products than non-electric/electronic repairs were entered in the RepairMonitor: 9,292 versus 4,317. This can indicate that electric/electronic products break easier and/or faster.In addition, electric/electronic products are often more complex, making it more difficult to repair them at home. This can suggest that electric/electronic products play an important role in people's life and thus are prioritised for repair when they break down. Figures 6a and 6b show the top ten products of both product categories as registered in the RepairMonitor.

[1] Electric products move as a result of the use of electricity (e.g., vacuum cleaners) or give light or heat (e.g., a lamp or iron). Electronic products contain switches, such as transistors or chips, that control devices (e.g., televisions or computers).

[2] It should be noted here that in this report, electric/electronic not always refers to electric/electronic products. We have divided all 13,609 products in electric/electronic and non-electric/electronic, also when this was not noted in the RepairMonitor. All repairs in which a plug, electricity cable or battery was mentioned, were categorised as electric/electronic. For example, the repair of a bicycle light of a non-electric bike, is considered an electric/electronic repair.

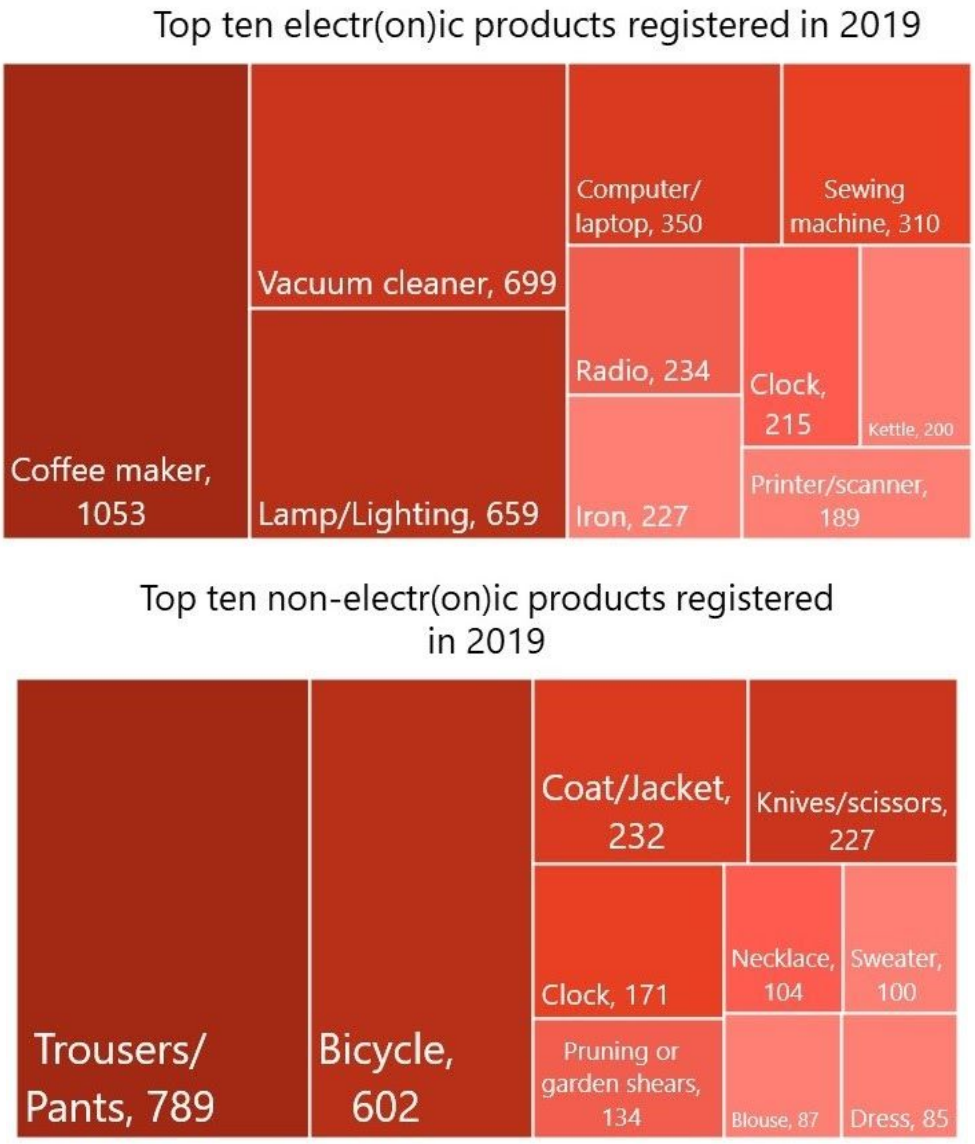

Figure 6a and b: Top ten registered products electr(on)ic (n = 4.136) and non-electr(on)ic (n = 2.531) in 2019 (N= 13.609).

2.3. Repair success

Repair Cafés are established to encourage people to repair their broken items instead of throwing them away and replacing them with a new one. The RepairMonitor gives insight in how many of these repairs are successful. In 2019, 63% of the people who brought a broken item to a repair Café went home with a working product (see Figure 7). This is 2% less than in 2018, when 65% of the repairs were successful. In 13% of the cases, the Repair Café visitor received advice or the product was partly repaired. This means that 24% of the repairs were completely unsuccessful; that is 1% more than the year before.

When comparing the numbers of 2018 with 2019, it should be taken into consideration that in 2019 almost twice the number of repairs were registered as in the year before. The data from 2019 can therefore be considered more representative than from 2018.

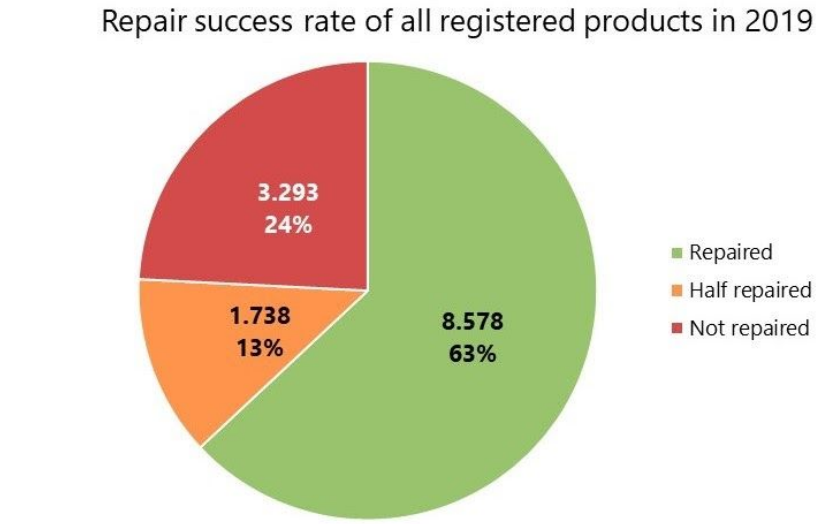

Figure 7: Repair success rate of all registered products in 2019 (N= 13.609).

2.3.1. Repair success of the top ten registered products

The analysis of the repair success of the top ten of the most frequently presented products (see Figure 4) shows that trousers have the highest success rate (96% of all trouser repairs) (see Figure 8). Also, the repairs of knives/scissors and bicycles were almost always successful. The repair success rate of electric/electronic products was lower. Especially the success rate for computers/laptops is low (45%). This can have different reasons. It is often difficult to open laptops, and when this is possible, it is difficult to see where the problem lies. Repair Cafés do not always have the expertise to repair modern electronics. There is still much to be gained in this area.

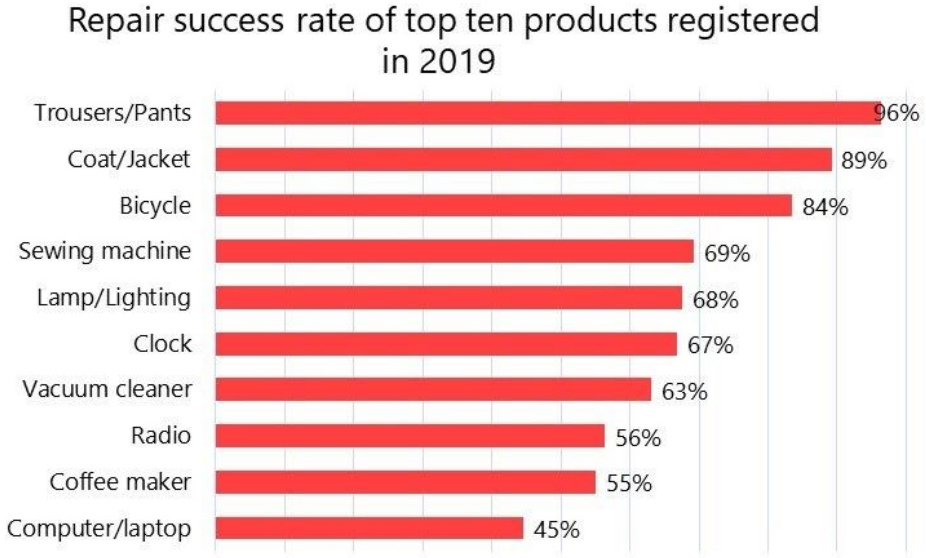

Figure 8: Repair success rate of top ten products registered in 2019 (n = 5.339).

2.3.2. Repair success of the top ten registered brands

Figure 9 visualises the repair success rate for the ten most registered brands in the RepairMonitor. Miele jumps out with a success rate of 62%. Samsung scores the lowest with 41%. The repair success rate of a brand is closely connected with the type of product and the experience of the Repair Café repairers with these types of products. In the case of Miele, it is almost exclusively about vacuum cleaners; a product that many Repair Cafés can handle. In the case of Samsung, it is about products such as mobile phones, tablets, televisions, and microwaves. Repair Cafés have much less experiences with these types of products.

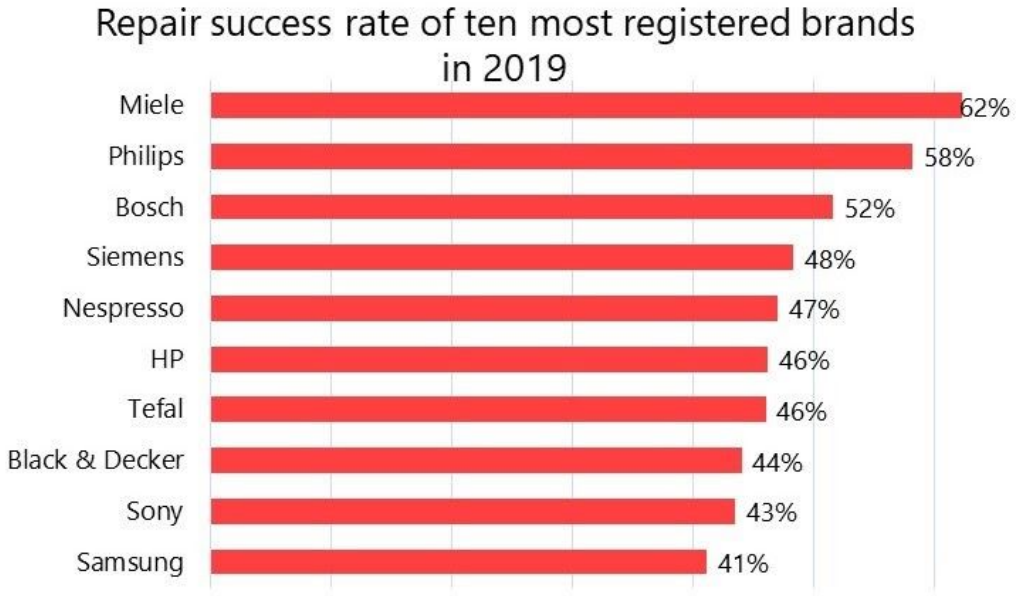

Figure 9: Repair success rate of the top ten most registered brands in 2019.

2.3.3. Repair success of electric/electronic and non-electric/electronic products

This report differentiates between electric/electronic and non-electric/electronic products (see section 2.2.1). Figure 10 shows a clear difference in the repair success rate of electric/electronic products (53% success) and non-electric/electronic products (85% success).

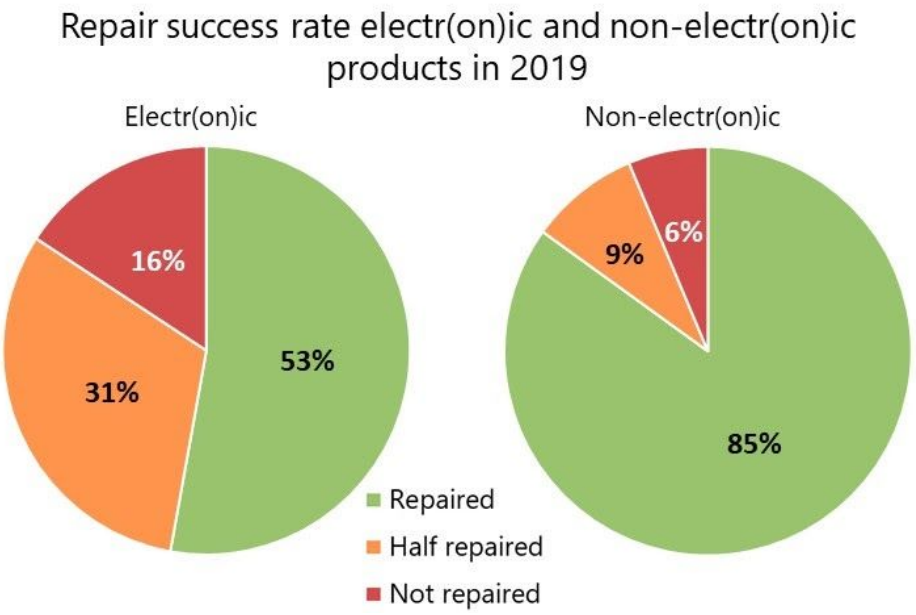

Figure 10: Repair success rate electr(on)ic (n=9.292) and non-electr(on)ic products in 2019 (n=4.317).

2.3.3.1. Repair success rate of electric/electronic products

About half (53%) of the electric/electronic products are successfully repaired. Figure 11a unpacks this category and shows the success rate of the top ten most repaired electric/electronic products. The sewing machine, clock, and lamps/lightiing have the highest success rate. This is probably the result of the less complex wiring, which makes them easier to repair than, for instance, a computer or a printer. It is also possible that in the case of some electric/electronic products, it concerns non-electric/electronic repairs, for example adjusting the thread tension of a sewing machine or lubricating a clock wheel. Computers/laptops and printers have the lowest success rate. Figure 11b provides insights in the number of registered repairs of the top ten electric/electronic products. It is clear that coffee makers are most popular product taken to a Repair Café for repair.

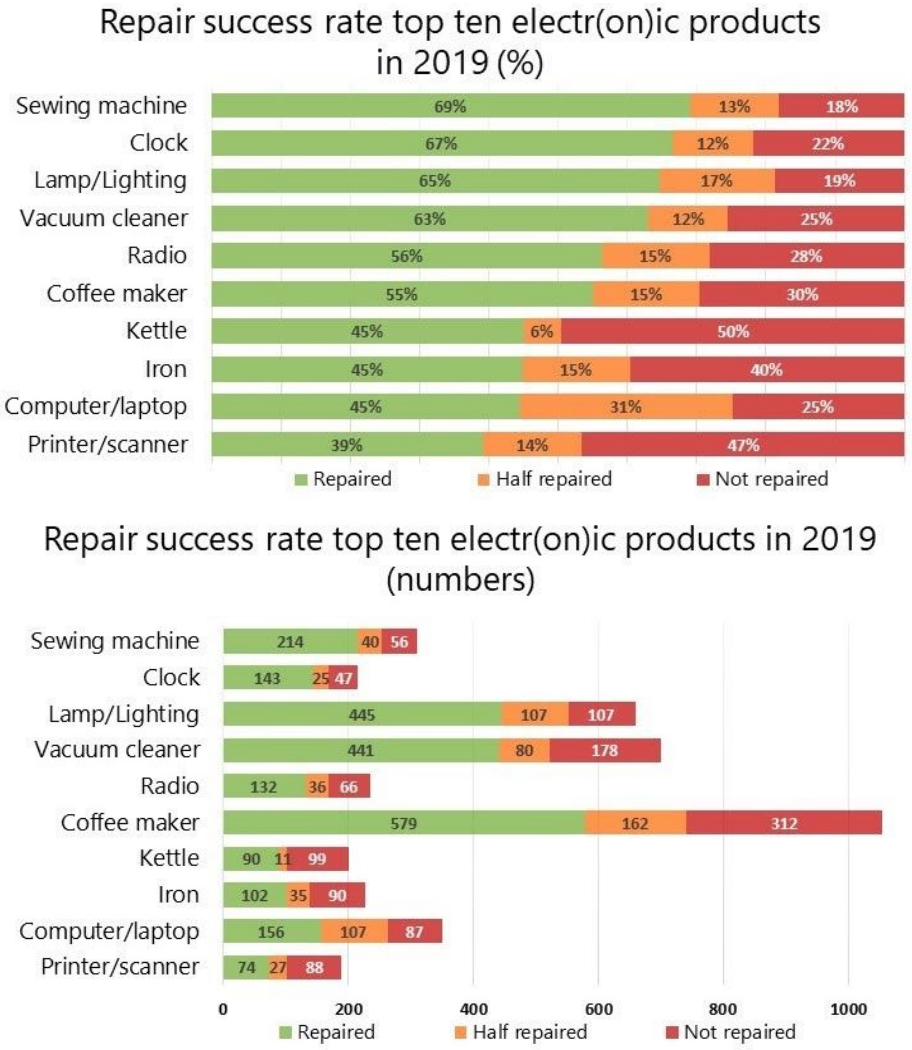

Figure 11a and b: Repair success rate of the top ten electr(on)ic products in 2019 (n=9.292).

2.3.3.2. Repair success rate of non-electric/electronic products

In 2019, 4,317 non-electric/electronic repairs were registered in the RepairMonitor. The success rate for these repairs was significantly higher than for the electric/electronic products. A possible explanation is that these repairs are simpler to implement.

In the product category textiles 94% of the repairs is successful, the highest of all product categories. It concerned mainly trousers, but also dresses, sweaters, and bags, and the repairs were relatively easy: stitching seams, sewing on buttons, replacing a zipper or adjusting the size. Figures 12a and 12b visualise the repair success of the top ten of registered repairs of non-electric/electronic products in percentages and in numbers.

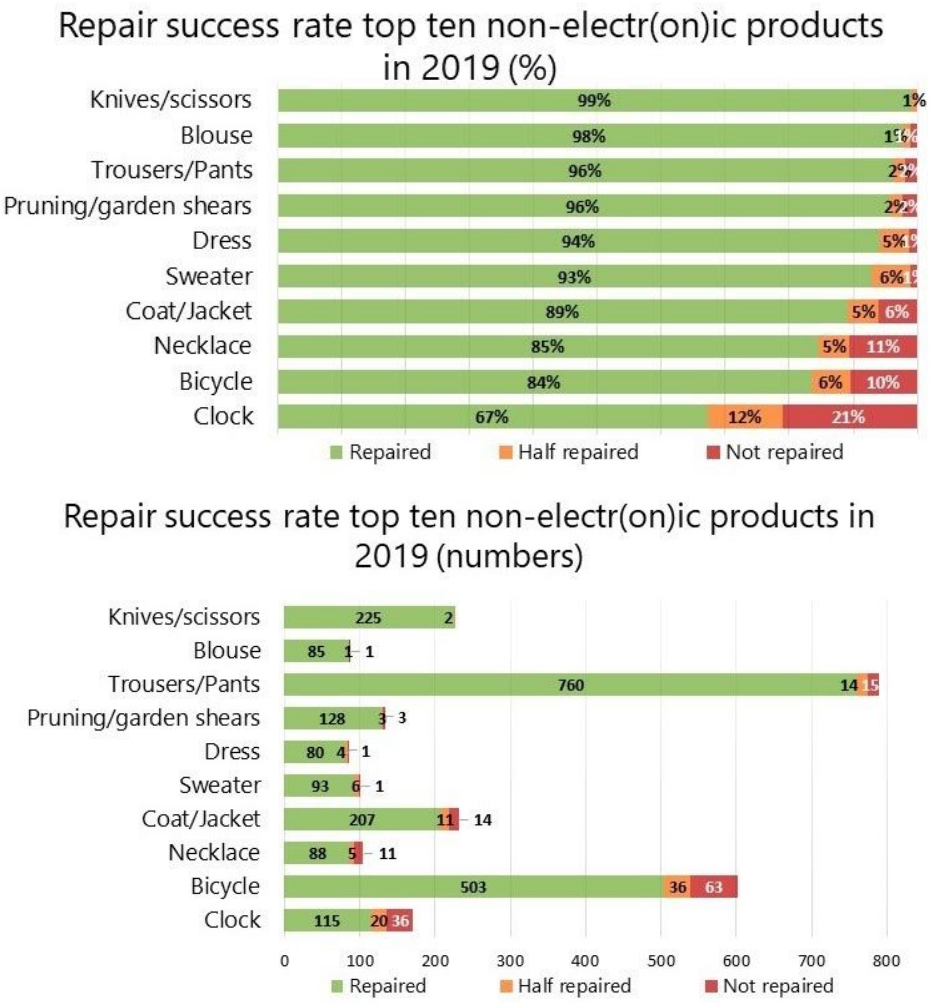

Figure 12a and b: Repair success rate top ten non-electr(on)ic products in 2019 (n=4.317).

2.4. Obstacles to repair

This section provides insight in the causes for repair failure, which may provide points for improvement to Repair Cafés as well as to the producers of products. In 2019, the RepairMonitor registered 5,031 repairs that were not or only partly successful. In half of the cases (2,549), a reason is given why the repair failed or was only partly successful. The figures and descriptions in this section refer only to unsuccessful or partly successful repairs for which a reason was registered in the RepairMonitor (n=2,549).

2.4.1 Five main reasons for repair failure

For 2,177 repairs the most common reasons for repair failure can be summerised in five main categories, see Figure 13. The different reasons will be described below.

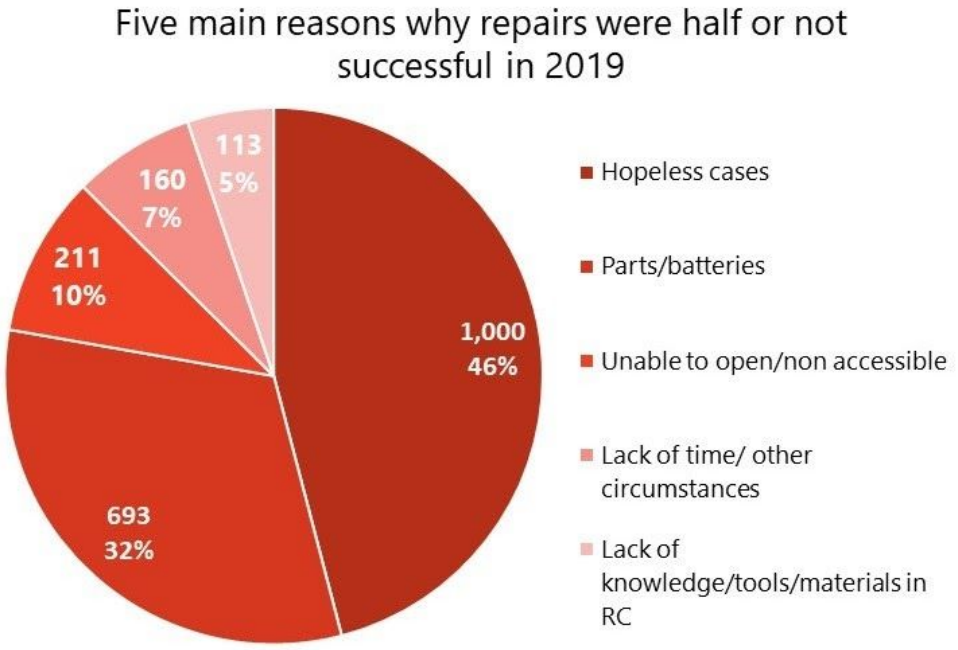

Figure 13: Five main reasons why repairs were half or not successful in 2019 (n=2.177).

Hopeless cases (1000 cases)
This concerns items that, according to the repairers, are really broken. For example, in the RepairMonitor comment box "Why was the repair not successful?", the comments indicate that the item is not repairable, too old or too worn. It is sometimes indicated that the engine or electronic parts are defective or had burnt out.

Parts/batteries (693 cases)
This concerns repairs that failed because parts were defect and spare parts or batteries were not available during the repair. The descriptions in the RepairMonitor don't make clear whether the parts were no longer available on the market or if they were not available in the Repair Café.

Impossible to open/access (211 cases)
In this case it was not possible to establish the problem of malfunctioning, because the repairer was not able to open the product. In this category we find products that were impossible to open as a result of their construction (use of glue or fused components), as well as products that couldn't be open as a result of rusted screws or the components were too small to be reached with tools.

Lack of time/other reasons (160 cases)
This concerns repairs that couldn't be completed because of particular circumstances, such as a repair that took too long, too busy at the Repair Café, or there was no more time at the Repair Café to start a new repair. Sometimes the information in the comment box indicated that the visitor didn't bring all necessary parts (e.g., the charger) or that the visitor decided to refrain from the repair.

Lack of knowledge/tools/materials in the Repair Café (130 cases)
For a large part of the unsuccessful repairs, the reason was the lack of appropriate tools to implement the repair. Comments in the RepairMonitor mention, for example, “soldering iron not available” or “soldering was not possible”. In addition, in several of these cases it is mentioned that more professional support or knowledge was needed or that the person with the particular skills was unavailable.

Figure 14 visualises the specific barriers to repair. It is clear that repairs often fail because spare parts are not available.

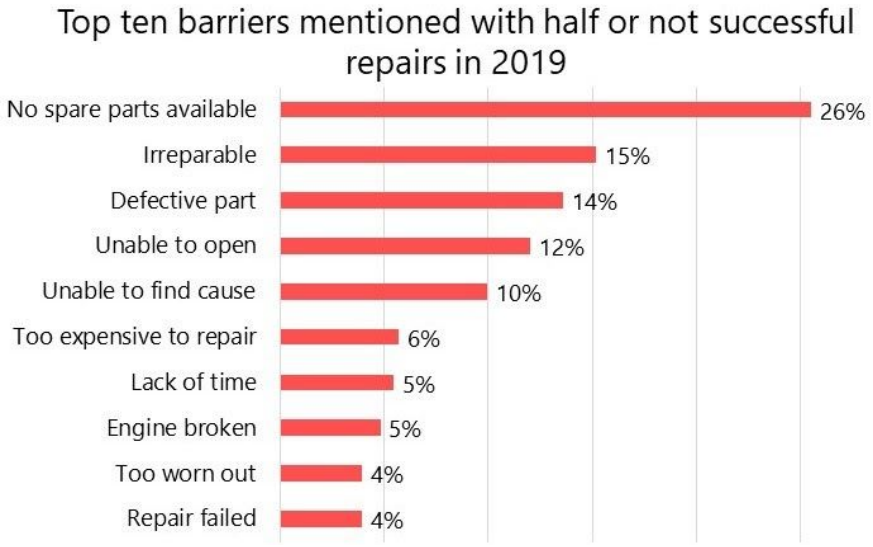

Figure 14: The top ten barriers mentioned with half or not successful repairs in 2019 (n=1.582).

2.4.2 Obstacles to repair of two of the ten most registered products

In this section we will look more in detail to two of the ten most repaired products. We have chosen for one non-electric/electronic product category (clocks/alarm clocks/watches) and one electric/electronic product category (printers/scanners).

Non-electric/electronic clocks/alarm clocks/watches

In 2019, the repair of 612 clocks, alarm clocks, and watches are registered in the RepairMonitor, out of which 249 are non-electric/electronic. Of these 249 repairs, 100 (40%) were not or partly successful. An obstacle to repair is given for 62 of these hundred failed repairs. Almost half of them (27 repairs) concerns “hopeless cases”; most of them were not repairable or too worn. In eleven of the cases the lack of appropriate tools or not enough knowledge formed the obstacle to repair. Another eleven repairs failed because of the lack of spare parts; in five cases there was a lack of time for the repair, while in three cases it was impossible to open the device.

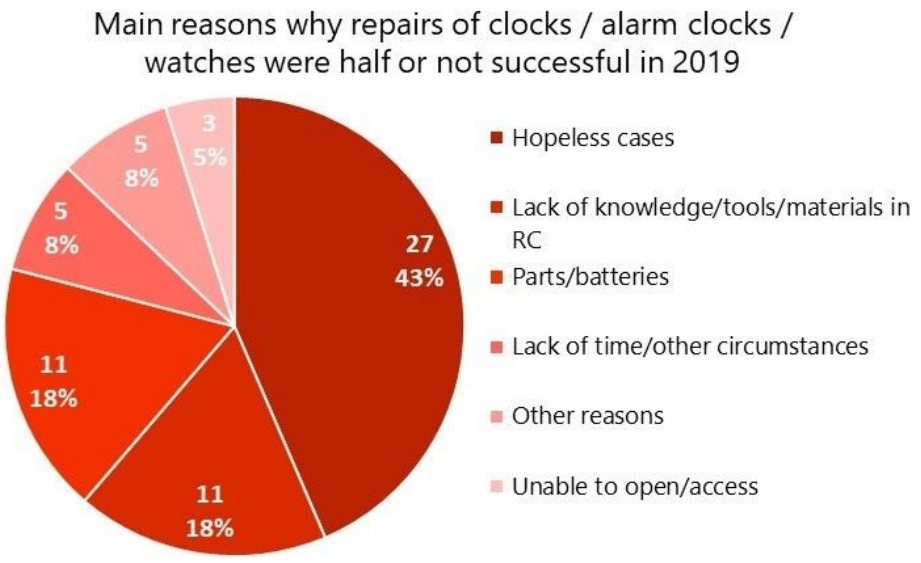

Figure 15: Main reasons why repairs of clocks/alarm clocks/watches were half or not successful in 2019 (n=62).

Printers/scanners

In 2019, a total of 189 repairs of printers/scanners are registered in the RepairMonitor. Of these repairs were 115 (60%) unsuccessful or partly unsuccessful. Of 64 of the cases, the obstacle to repair was mentioned in the RepairMonitor. Of these 64 cases, half of them (30 cases) can be described as "hopeless cases": not repairable (8), not able to identify the defect (7), too expensive to repair (4). In 15 cases a part was defect, such as the print head, but not available. In 4 cases it was impossible to open the device. Other reasons why a repair failed had to do with the cartridges or the software. It is remarkable that for the 64 repairs in which an obstacle to repair was mentioned, "lack of knowledge, tools or materials" was never stated.

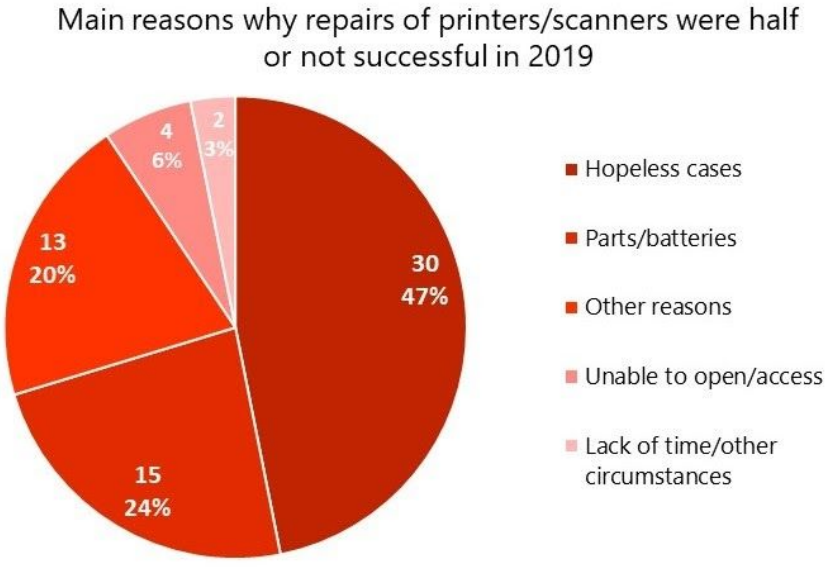

Figure 16: Main reasons why repairs of printers/scanners were half or not successful in 2019 (n=64).

2.5. Age of products

There is a large variation in the age of the products brought to the Repair Cafés. The age of many products is unknown or their age is not entered into the RepairMonitor. The estimated year of production of 5,692 (42%) of the 13,609 registered products is known (see Figure 17). 94% (5,348) of all the registered products with an estimated year of production is produced in the period 1980–2019.

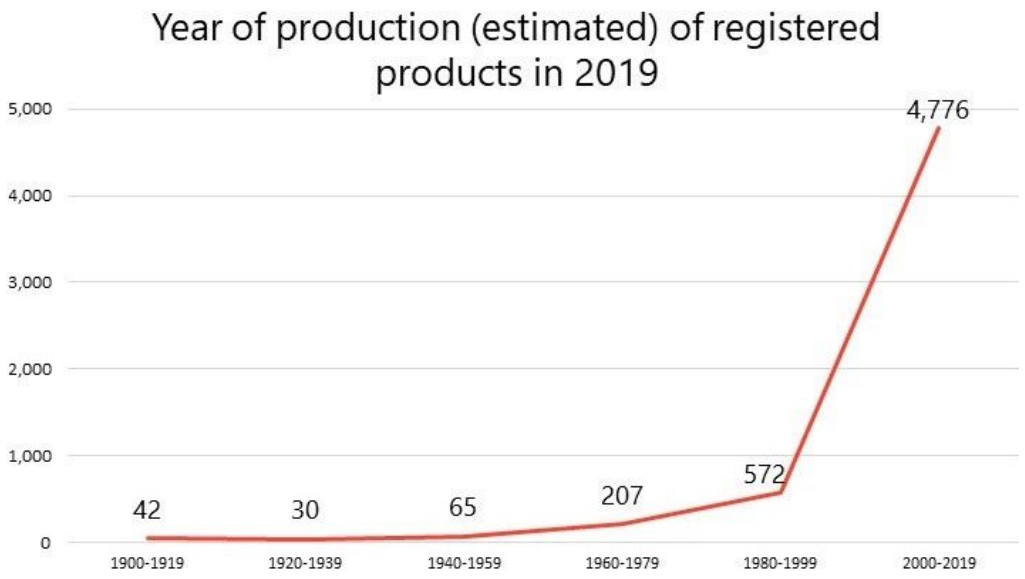

Figure 17: Year of production (estimated) of registered products in 2019 (n= 5.692).

Of the products with an estimated year of production, 84% is up to 20 years old and 55% up to 10 years old. Of the ten most repaired products, coffee makers form the youngest product group when they are brought in for repair: 75% of the coffee makers of which the age was known, were less than 10 years old. Clocks are on average the oldest: 41% of the clocks with a known age are older than 50 years.

Figure 18 shows the average age of the product groups of which the estimated age is known (n=5,692). Just as in 2018, clocks are the oldest product when brought to a Repair Café, followed by furniture. Figure 18 also shows that the oldest products are mostly non-electric/electronic. This suggests that these products have a longer lifetime before they need repair.

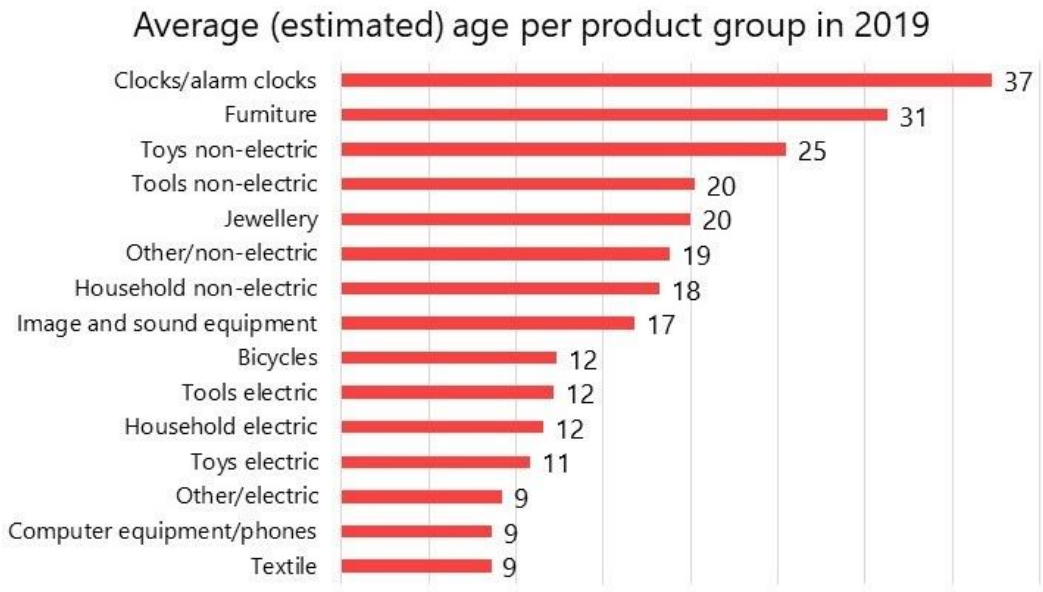

Figure 18: Average (estimated) age per product group in 2019 (n=5.692).

Although 94% of the products brought in for repair have an estimated year of production after 1980, the numbers in Figure 19 seem to point to something surprising: the repair success rate of products produced before 1980 seems to be a bit higher than of products produced after 1980. This observation reflects the opinion of many Repair Café repairers, who experience that products produced before 1980 are more repairable.

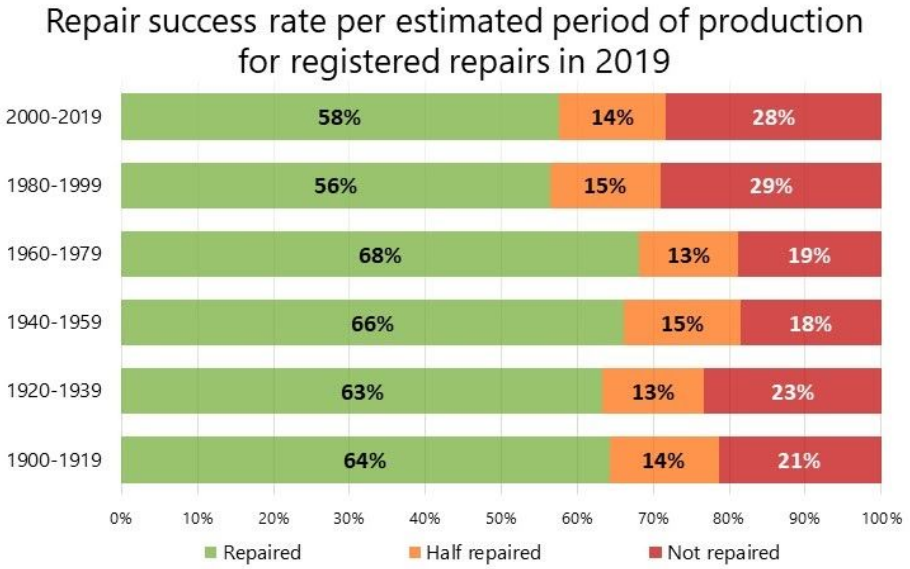

Figure 19: Repair success rate per estimated period of production of registered repairs in 2019.

2.6. Problems and defects

The repairers noted a wide variety of problems and defects. Common problems of the ten most frequently repaired products are shown in Table 1.

Coffee maker	Problem with the magnet (Senseo); water connection/water pump; heating element broken; calcification
Trousers/pants	Torn seam ; problem with size (too tight/wide); legs too long; hole/wear and tear
Lamp/lighting	Fitting defect; loose or broken wire; switch defect
Vacuum cleaner	Filter blocked/dirty; motor defect; cord problems (roll mechanism stopped working)
Bicycle	Tyres; light; cable system (gear, breaks, lights)
Coat/jacket	Zipper, loose button; torn seam; holes or tears in the fabric
Clock	Lack of maintenance (greasing, cleaning); empty batteries; spring defect
Laptop/computer	Hardware problems (hard disk broken, broken part, adapter); old battery; broken screen
Sewing machine	Thread tension; pedal; coil housing; dirt/dust; noisy
Radio	Loose antenna; defect electronics; broken buttons

Table 1: Main problems for reparations in the top ten registered products of 2019.

The problems presented in Table 1 show that lack of maintenance (descaling, cleaning, greasing) of products may, just as in 2018, be the cause of the problem. In addition, it seems, also this year, that many problems could have been avoided with a more robust design of electric/electronic devices. Most common problems with these products are broken wires or broken switches and buttons. These parts are often not produced in a way that they can tolerate regular long-term use.

2.7. Frequently used repair solutions

Besides identification of the problem, repairers can also register the solution they found for repairing the product in the RepairMonitor. Table 2 lists the most common solutions for the repair of five frequently repaired products. The RepairMonitor 2018 report discussed five products. To prevent repetition, the repair of five other products will be presented.

Knives and scissors
A common solution to repair knives and scissors is to clean them and then sharpen them. Several ways are mentioned for this: you can use a sharpening stone or a sharpening rod, depending on what is available. Ideally, you should use a piece of soft leather (possibly glued to wood) to finish the job, so that no grains or burr remain behind.
Clocks
Clocks are often easy to repair. The most frequently cited solutions to problems are tinkering with the chime system, cleaning or removing rust, replacing batteries, replacing a part, and lubricating or oiling parts. Special tools and skills are often required, which are usually available in a Repair Café. Many clock repairs include precision work. It is important that skilled repairers do this work.[3]
Laptops and computers

[3] The website of Repair Café has more specific information on clock repair: https://repaircafe.org/en/clock-broken-repair-cafe-fixes/

The problems with laptops and computers are very varied. Sometimes it is a matter of installing new software, for example a newer version of Windows or internet browser. These are easyrepairs if the repairer has some knowledge of operating systems. Sometimes the computer/laptop has to be taken apart and a part replaced, such as the screen or the battery. This requires certain tools that are often available in a Repair Café. The lack of spare parts at a Repair Café can be an obstacle to repair. When parts have to be replaced, it is also very important that repairer with the right experience is available, because it is precision work that requires knowledge. In some cases, if the Repair Café repairer is unable to find a solution, the visitor is advised to go to a professional computer repairer.

Sewing machines

A sewing machine under repair in a Repair Café in Saskatoon, Canada

Sewing machines have a high repair success rate in the RepairMonitor. Often the problems are solved by cleaning and/or lubricating the sewing machines, for example when they make a lot of noise. Repairers advise to do this with special sewing machine oil. WD40 or other oils are not suitable for sewing machines, because they have the wrong composition. Problems with the needle and the thread tension are also often resolved: the tension is often reset or the needle replaced. Sewing machines have a rotary knob to adjust the thread tension manually, but the bobbin tension does require a small screwdriver. A lot of information is available on the Internet for specific models and versions of sewing machines.[4]

Radios

Radios have parts, such as the antenna, buttons or wires, which can be loose or defective. Sometimes it is a matter of cleaning the relevant part (preferably with contact spray) and/or tightening the loose parts. In other cases, a wire can be soldered with a soldering set. These are often present in Repair Cafés.

Old radio brought in for repair in Forest Row Repair Café, United Kingdom

Table 2: Main solutions for repairs in highly registered products in 2019.

2.8. Grades for reparability

In the RepairMonitor, repairers can give a grade for the reparability of a certain product. They do this at their own discretion. This assessment is based on factors such as the knowledge, experience, and skills of the repairer himself; the availability of tools (materials, and parts); the design of a product; and the availability of repair information. It can therefore mean different things when a repairer gives a 10, the highest score, to the reparability of a product: the object was easily repairable, because it was easy to open, but a 10 can also

[4] More information on specific problems with sewing machines and their solutions can be found at: https://nl.techinfus.com/dlya-chistoty-i-poryadka/shvejnaya-mashina/remont-svoimi-rukami-instrukciya.html

mean that the item was “easy to repair for me, because I am a very good repairman”. This is important to keep in mind when interpreting these grades.[5]

It is striking that in 2019, these grades, including the averages grades, are the same as in 2018. In 2019, 10,160 repairs (75%) were graded. 73% were graded with a 6 or higher. 1% of the repairs was graded with a 1 (the lowest score).

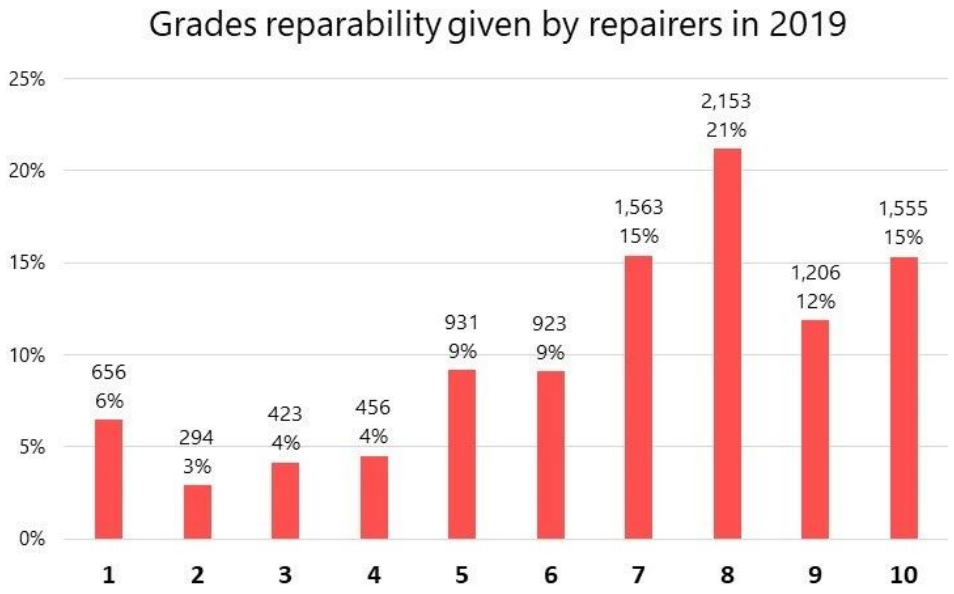

Figure 20: Grades reparability given by repairers in 2019 (n=10.160).

Figure 20 makes clear that 8 was the most common grade. In 2019, the average grade was a 6.8, that is almost the same as in 2018, when the average grade was 6.9.

If we look at the relation between grades and the success of a repair (see Figure 21), it is not surprising that that unsuccessful repairs receive a lower grade (average 4.5) than successful repairs (average 7.6).

[5] The RepairMonitor uses the Dutch grading system, which ranges from 10 (the best) to 1. How these Dutch grades compare with grading systems used in other countries can be found here: https://www.stu dyineurope.eu/grades

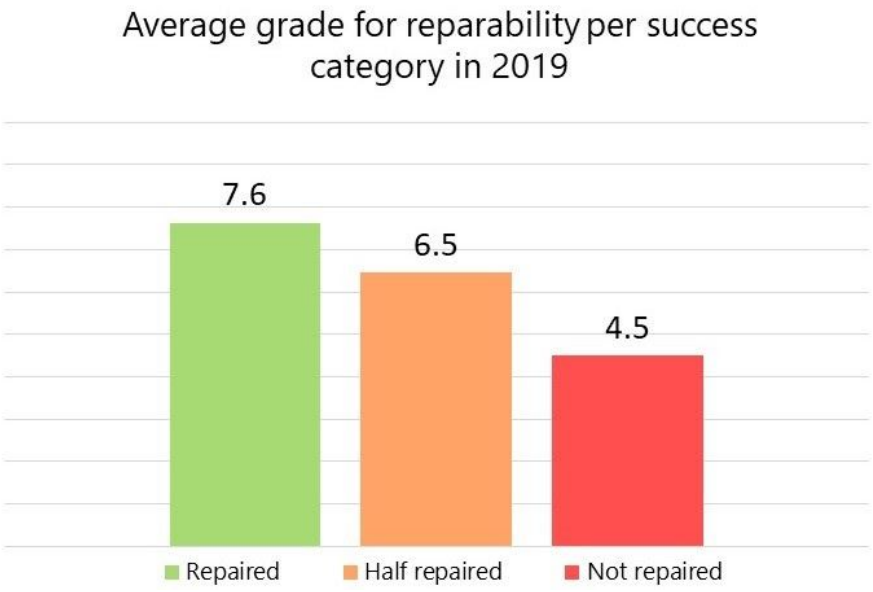

Figure 21: Average grade for reparability per success category in 2019 (n=10.160).

Non-electric/electronic repairs received an average grade of 7.5, while electric/electronic repairs received on average a 6.5. This is not surprising, as the repair success rate of non-electric/electronic products is often higher than with electric/electronic repairs (see Figure 10).

Trousers were the product that received the most 10s, the highest grade (120 times). The coffee maker received most often a 1, the lowest grade (57 times), of which Philips was the most mentioned brand (18 times). Here it is important to note that the coffee maker is also the most registered product in the RepairMoinitor in 2019 and Philips the most registered brand.

The average grade for reparability of the ten most registered products (see Figure 22) varies from 6.3 (radios) to 7.9 (trousers). On average, the top ten products received a 7 or a *more than sufficient* for reparability.

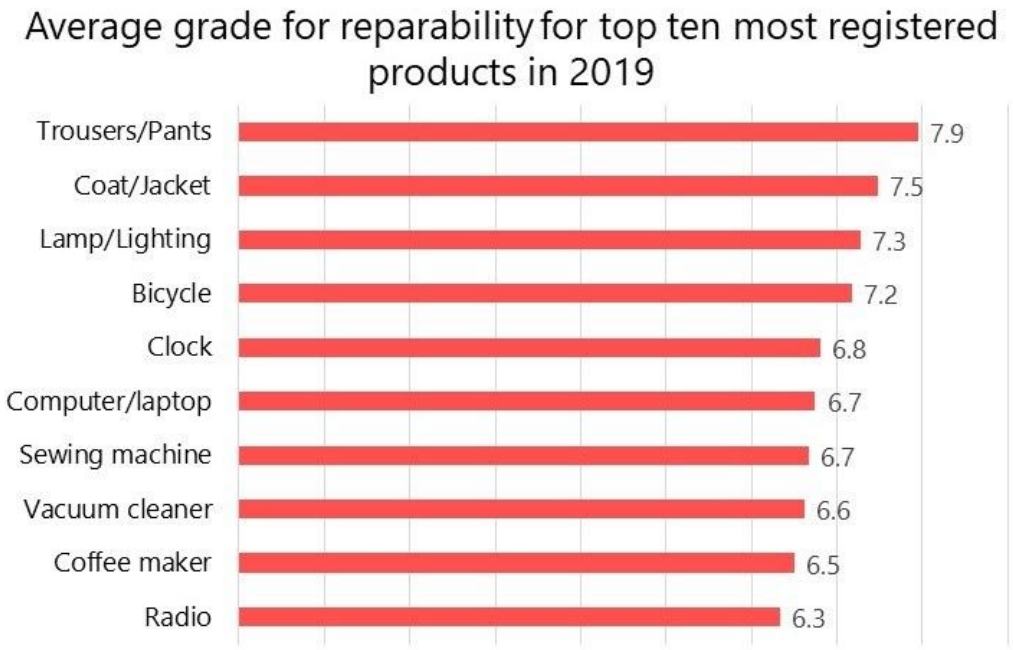

Figure 22: Average grade for reparability for top ten most registered products in 2019 (n=5.339).

2.9. Use of repair information during repair

Just as in 2018, it is clear from the data in the RepairMonitor that also in 2019, repairers not often searched for repair information. In 59% of all registered repairs (n=7,994), the question on the use of repair information was answered (see Figure 23) . In 77% of the cases (6,192 repairs), the answer was 'No, not searched for information'. In these cases (n=6,192), 66% of the repairs was successful (4,103 repairs), 13% was partly successful (789 repairs), and 21% was not successful (1,300).

In 1,228 of the cases in which the repairer searched for repair information, the answer was 'No, not found'. In these cases, the repairer did try to find information, probably because the repairer didn't know how to proceed with the repair. In this situation, the repair success rate was significantly lower, 49% (607 repairs), 12% (152 repairs) were partly successful, and 38% (469 repairs) were unsuccessful.

Repair information was used in only 574 cases. That is, in 7% of the repairs in which the question on the use of repair information was answered (n=7,994) and only 4% of all repairs in 2019 (n=13,609). A large part of these repairs (312) concerned household electrical equipment. As the source of repair information, the Internet was mentioned the most (27 times), followed by Youtube (26 times), and Google (10 times).

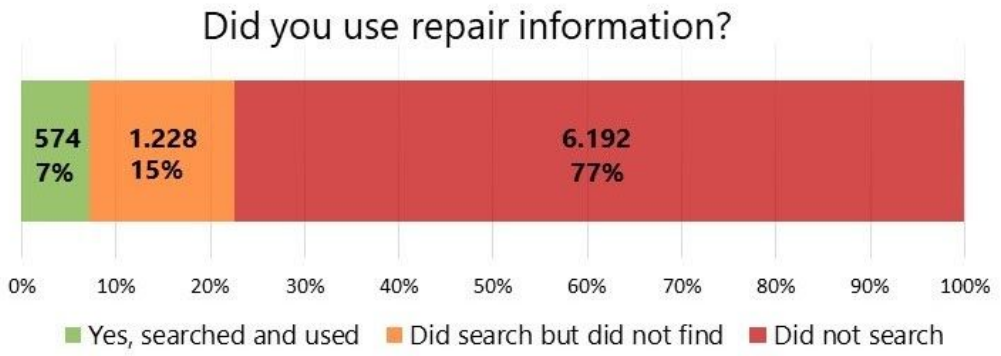

Figure 23: Answers to the question whether repair information was used during the repair (n=7.994).

In 253 of the 574 repairs, in which repair information was used, it was indicated that the information was provided by colleague-repairers. As sources, iFixit and Youtube were mentioned, where many repairers have uploaded repair manuals, both in text and video format. Also the well-known Senseo repair manual, written by Repair Café repairers, was mentioned[6].

In 160 of 574 repairs it was mentioned that the repair information originated from the manufacturer. In only 13 cases, the product manual was mentioned. That is only 2% of the repairs in which repair information was used.

2.10 Analysis results 2017-2019

The RepairMonitor has been in existence for three years now; long enough to look at multi-year results and trends. In this last section of chapter 2, some of these aspects will be presented and discussed.

2.10.1 Growth of the dataset

The number of registered repairs has since the start of the RepairMonitor multiplied, from 2,404 repairs in 2017, via 7,857 in 2018, to 13,609 repairs in 2019. This is a very positive development and contributes to the overall value of the RepairMonitor. A larger dataset makes it possible to draw more representative conclusions about the durability and repairability of the stuff we use in our daily lives. This enables us to make better recommendations to consumers, producers, and policy makers, nationally and internationally, and to contribute to the shaping of the circular economy. It is therefore important to continue the RepairMonitor and to improve and expand it. Figure 24 visualises the growth in the number of registered repairs per month.

[6] This manual was written by Repair Café volunteers from Wageningen, Deventer, Korendijk, and Sliedrecht, and can be downloaded from: http://repaircafe-forum.org/nederlands/index.php?topic=214.0.

Figure 24: Number of registered repairs per month (2017-2019).

2.10.2 Remarkable products

Repair Cafés are often associated with the repair of coffee machines, vacuum cleaners, clothing, and other items from the top 10 (see Section 2.2, Most presented products and brands). However, many more objects are brought in for repair. Many hundreds of different product types are entered in the RepairMonitor. All these products say something about the daily life of people in the Western world.

Figure 25 shows four products for which this certainly applies. It is striking that the number of bread makers registered in the RepairMonitor almost doubled in 2019 compared to 2018. This corresponds to the increased popularity of home baking (and baking programmes on television!) in recent years. This trend fits seamlessly with the revaluation of craftsmanship. Many people also do their best to eat healthier and use less fat. The emergence of the air fryer in the RepairMonitor can be an expression of this. The leaf blower could indicate the high (and, in the eyes of environmentally conscious people, irresponsible) level of prosperity in countries where Repair Café is popular. The walker can indicate an aging population.

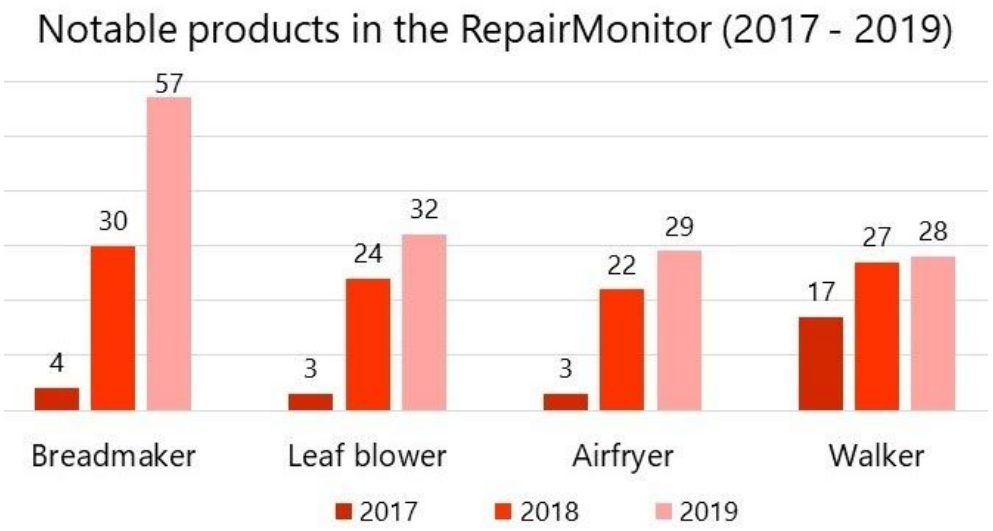

Figure 25: Notable products in the RepairMonitor from 2017-2019.

Jewelry also increasingly seems to find its way to the Repair Café. Its number in the RepairMonitor in 2019 almost quadrupled compared to 2018. This could mean anything: maybe more and more people are thinking of going to the Repair Café with broken jewelry because Repair Cafés are becoming more well-known and have a good reputation. Perhaps more Repair Cafés started repairing jewelry in the past year. Another possibility is that a few Repair Cafés, that have always repaired a lot of jewelry, have become participants in the RepairMonitor in the past year. Jewelry repairs have a success rate of 82%, so it is worthwhile to go to a Repair Café with broken jewelry.

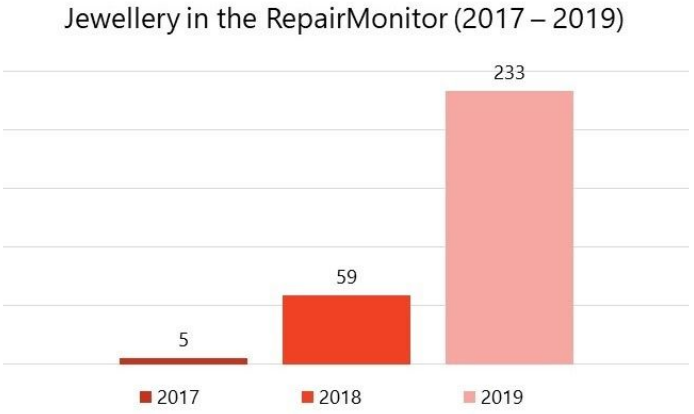

Figure 26: Entries of jewellery in the RepairMonitor 2017-2019.

Many products are mentioned only once in the RepairMonitor, for example, the plant pot, car key, bread bin, and hairpin. These were, with the exception of the car key, successfully repaired. This shows that Repair Café repairers are able to repair a large variety of products.

2.10.3 Coffee makers: Senseo versus Nespresso

The coffee maker is undoubtedly the most popular product in Repair Cafés. This is also visible in the RepairMonitor: in 2017, the coffee maker was the second most registered product, in 2018 and 2019 the number one most registered product. Since 2017, the percentage of registered coffee makers has decreased slightly, from 8.6% (204 coffee makers) of the total registered repairs in 2017 to 7.9% (1,053) coffee makers in 2019.

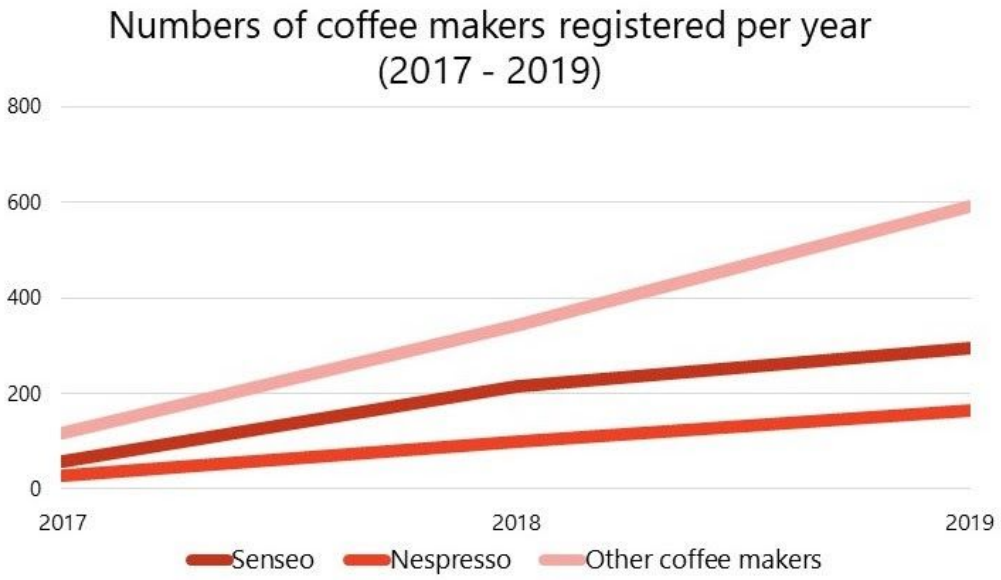

Figure 27: Numbers of coffee makers registered per year (2017-2019).

The models most often mentioned are the Senseo (Philips) and Nespresso (several manufacturers). Figure 27 shows that the number of Senseo coffee makers has stabilised, while the number of Nespresso coffee makers has increased. This may be the result of the fact that the data in the RepairMonitor in 2019 has become more global, while Senseo is especially popular in the Netherlands. It can also be the effect of the growing popularity of the Nespresso coffee maker, resulting in more of these coffee makers brought in for repair in Repair Cafés.

The average success rate of coffee maker repairs has declined in recent years: from 67% in 2017, through 60% in 2018, to 55% in 2019. It is not clear to what extent these percentages are representative of the repairability of coffee makers. After all, the RepairMonitor was developed in 2017. In that year, only 197 coffee makers were registered in the system by a pilot group of 12 Repair Cafés. A year later there were more than three times as many (654 coffee makers, registered by 34 participating Repair Cafés), a year later more than five times as many (1,053 coffee makers, with 67 participating Repair Cafés). The success rate from 2019 is based on more data than that from 2017 and 2018. The percentage from 2019 (55%) gives therefore most likely the best picture of the repairability of coffee makers.

Figure 28 shows the differences in repair success between Senseo, Nespresso, and other coffee maker brands from 2017 to 2019.

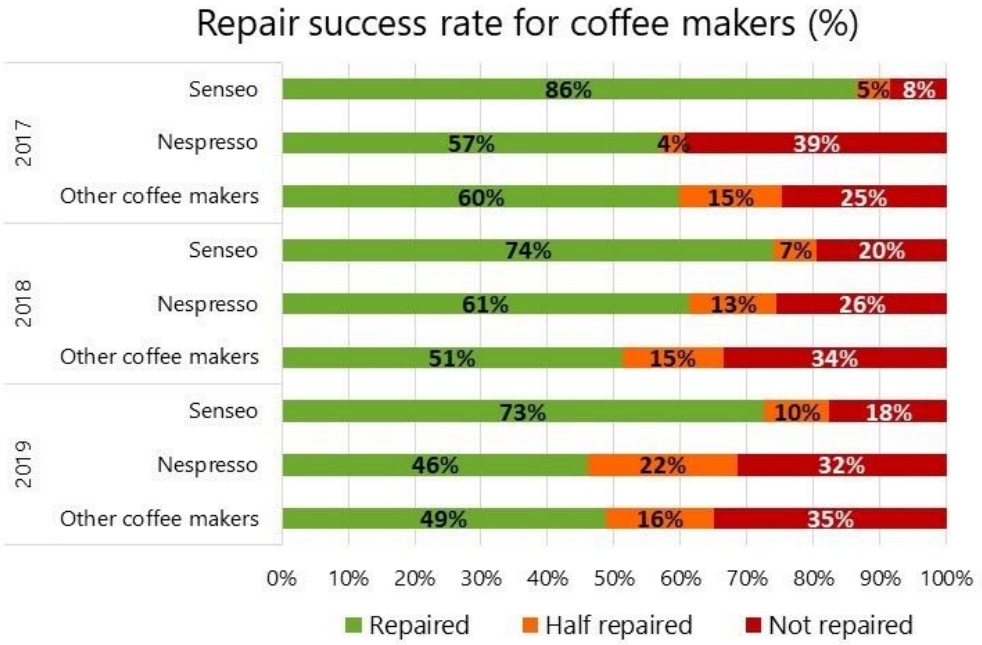

Figure 28: Repair success rate for coffee makers (2017-2019).

What is striking in Figure 28 is that the Senseo has the highest success rate in repairs in the Repair Café in all years. This may be due to the availability of repair information for this type of coffee maker. Repairers of Dutch Repair Cafés drew up a detailed Senseo repair manual in 2014. This document has been improved and expanded over the years and now answers almost all possible Senseo problems. The Senseo repair manual is regularly mentioned in the RepairMonitor as a source of repair information. Such a repair manual is not (yet) available for the Nespresso and other coffee machines.

Figure 29 shows that the use of repair information on coffee machines has decreased over the past three years. In 2019, less use was made of the information than in previous years. These numbers are in line with the decreased success rates for all types of coffee makers, which is also visible Figure 28, although it has previously been concluded that the dataset has now become more representative due to the increased numbers of repairs introduced. From this it can be concluded that the use of repair information can contribute to a successful repair and should not be forgotten.

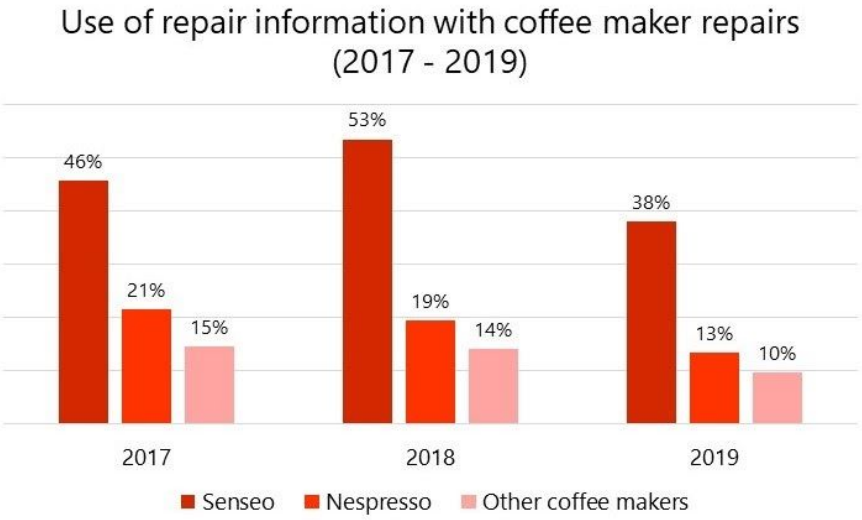

Figure 29: Use of repair information with coffee maker repairs (2017-2019).

3. Conclusions and recommendations

3.1. Repair always as a first step

63 percent of all repairs described in the RepairMonitor were successful. This shows that repair makes sense and should always be the first step when a product breaks down. Of the ten products most frequently presented to Repair Cafés, only the repair of radios, coffee makers, and computers/laptops were successful in less than 63% of the cases (56%, 55% and 45% respectively). The repair success rate for other everyday products was higher; even considerably higher for clothing and bicycles (above 80%).

3.2. More emphasis on maintenance

Many of the problems described in the RepairMonitor are the result of poor maintenance: cleaning, descaling, lubricating, tightening, etc. In many cases, these simple operations were sufficient to make a product function again. It seems that the general public is not sufficiently aware of the need to perform maintenance, and to do it on time, before problems arise. Consumers should become more aware of this - a publicity campaign could be helpful here. Producers and sales persons could also emphasise the importance of good and timely maintenance, through packaging, user manuals, and advertisements.

3.3. More repair knowledge needed among the general public

The relative simplicity of the repairs described in the RepairMonitor demonstrates the lack of repair knowledge among the general public. Even the most basic knowledge seems to be lacking, as well as the confidence that one, as the owner, is capable of solving certain

problems. More attention to repair skills and practical skills acquisition in education may help solve this problem.

3.4. Producers must actively support repair

The analysis of the RepairMonitor data shows that if repairs are unsuccessful, it is often because products cannot be properly opened, parts cannot be repaired, replacement parts are not available, and there is hardly any reliable repair documentation available to repairers. These barriers seem to be the result of deliberate choices by the producers to not support repair by consumers or community repairers. The transition to a circular economy requires that this changes.

3.5. Making electric/electronic products easier to repair

The repair success rate of products without a plug or battery is considerably higher than that of products that do run on electricity. Of the ten most commonly repaired electric/electronic products, the success rate was in six out of ten cases lower than 63%, and in four of ten cases lower than 50%. This indicates that there is still a lot to be gained in the repairability of these products (see also recommendation 3.4).

3.6. Governments must stand up for repairable products

In addition to these recommendations for consumers and producers, an important task lies ahead for municipalities, governments, and the European Union to support the repair of products. Repair Café International Foundation and the Dutch environmental organisation Natuur & Milieu formulated last year these policy recommendations for governments. They are still very much applicable:

- Make the provision of repair manuals by producers mandatory for all products that enter the European market;
- Products should be repairable with regular tools. Require the use of standard screws and other repair tools and materials and prohibit the gluing of parts;
- Legislate longer warranty periods by producers so that improved repairability of products becomes in the interest of producers;
- Make it mandatory that batteries and other critical, rapidly aging, and vulnerable parts can be replaced by consumers themselves;
- Require manufacturers to keep spare parts available for consumers and repairers;
- Increase the taxes on raw materials and reduce taxes on repair services;
- Inform consumers about the financial and environmental benefits of repairing and where they can go for repairs;
- Ensure the networking of Repair Cafés, thrift stores, and other local organisations that play a role in extending product life cycles so to create strong mutually beneficial relationships.