

Annex 2.

Detailed methodology

The primary question in this study is: **What levers and tools - economic, political and legislative - could Canada and its provinces adopt to encourage and facilitate the repair of HAEs?**

This research also focuses on various sub-questions:

- What are the issues surrounding repair in Canada and elsewhere?
- What are the impediments and obstacles to repair in Canada?
- What measures have been implemented internationally to encourage repair and in what ways might Canada be able to adapt them for domestic use?
- How do Canadian consumers perceive the measures in effect in other countries?
- What should be done to draw governments into the repair debate in Canada?

To answer these questions, several research methods were employed and certain methodological choices were made. These various elements and their limitations are described in the following sections.

1. REVIEW OF LITERATURE

A selection of studies, reports and papers carried out in various disciplines (design, environment, law, engineering, economics and consumer studies) were reviewed. The scientific and grey literature were also analyzed,

and articles were found through the Google Scholar platform and scientific journal portals. Among the latter resources, 99 recent papers (2011-2021) were consulted to identify the various obstacles and incentives to repair in Canada and around the world. The review of literature was limited to writings in French or English, which could limit its results, since studies that might be available in other languages were excluded.

2. ANALYSIS OF STRUCTURAL MEASURES TO ENCOURAGE REPAIR AROUND THE WORLD

To identify measures designed to facilitate access to repair that exist around the world, a documentary analysis was carried out using media articles, government documents, legislative documents, and reports from environmental organizations, consumer protection agencies, businesses, citizen groups and so forth. The websites of these stakeholders were also viewed. Various academic writings, as well as survey/interview results, were also reviewed to analyze the impacts of these initiatives. These various articles and documents were found through web searches, using Google and Google Scholar research facilities, and by searching

various portals containing scholarly reviews or papers.

Research for this section of the study was done only in French and English, but as the research showed, noteworthy measures are in place in Austria, Sweden and Germany. If there are studies or analyses on these various measures in the official languages of those countries, they were not consulted because of the language barrier and their results could not be taken into account.

3. INTERVIEWS AND SURVEY WITH REPAIRERS

Initially, semi-directed interviews lasting between 45 minutes and an hour were held with 30 HAE repairers in Quebec in October and November 2021. Quebec was chosen because it is the most active province in the country in the area of the right to repair. To reflect to the greatest extent possible the diversity of repair profiles and the province's demographic distribution, criteria were applied based on the type of appliance repaired and the type of certification, and regional quotas (urban vs. rural) were applied. Details on the sample can be found in Table 1. The interviews were retranscribed in full, the accounts provided were anonymized and the results were subjected to a qualitative analysis. Recurring topics raised in the interviews were noted and a number of highly specific categories were identified. These categories were then grouped under more general themes. At the end of the 30 interviews, data saturation was observed. Nevertheless, this qualitative portrait reflects only the reality of repairers in this province.

Next, in order to make up for this shortcoming and obtain a portrait of the rest of the country, a survey was conducted among repairers in British Columbia. This second province was also selected because of its higher level of activity in the area of the right to repair. The survey questionnaire was drawn up with the help of the interview guide that had been used in Quebec in order to ensure that the same themes were covered. The aim had been to survey 30 repairers, but despite entreaties to 135 repair firms across British Columbia, only 19 repairers responded to the survey. Representativeness criteria were applied, similar to those used in Quebec for certification, types of appliances repaired and geography. However, despite efforts to recruit more rural repairers, only one person meeting this criterion responded to the survey. Even so, a number of the urban-based firms also operate in the less densely populated surrounding areas. Sample details can also be found in Table 1.

The results from the Quebec interviews and the survey conducted in British Columbia were then pooled to identify similarities and differences with regard to the repair obstacles and incentives identified by the repairers.

Table 1. Details of repairer samples in Quebec and British-Columbia

Characteristics	Interviews in Quebec Sample size: 30	Survey in British Columbia Sample size: 19
Region	Rural: 7 Urban: 23	Rural: 1 Urban: 18
Manufacturer certification	Certified: 11 Non-certified: 7 ¹⁵	Certified: 9 Non-certified: 10
Types of appliances repaired	Home appliances: 13 Electronic devices: 17	Home appliances: 7 Electronic devices: 10 Both: 2
Gender	Men: 28 Women: 2	Men: 17 Other gender: 1 ¹⁶
Age	Between 20 and 29: 3 Between 30 and 39: 5 Between 40 and 49: 6 Between 50 and 59: 7 60 and over: 9	Between 20 and 29: 1 Between 30 and 39: 3 Between 40 and 49: 5 Between 50 and 59: 1 60 and over: 7 ¹⁷
Country of birth and citizenship status	Canada: 24 Cameroon: 1 France: 3 Italy: 1 Russia: 1 Citizens: 26 Non-citizens: 4	Canada: 14 Hong Kong: 1 Peru: 1 Russia: 1 ¹⁸ Citizens: 19 Non-citizens: 0
Years' experience in repair	Less than 1 year: 1 Between 1 and 5 years: 3 Between 6 and 10 years: 3 Between 11 and 15 years: 2 Between 16 and 20 years: 4 Over 20 years: 17	Less than 1 year: 0 Between 1 and 5 years: 1 Between 6 and 10 years: 2 Between 11 and 15 years: 3 Between 16 and 20 years: 1 Over 20 years: 12
Number of employees in the company	5 and under: 27 Between 6 and 20: 3 Between 21 and 100: 0 Over 100: 0	5 and under: 12 Between 6 and 20: 4 Between 21 and 100: 2 Over 100: 1

15. The total does not add up to 30 because some respondents did not specify their relationship with the manufacturer.

16. The total does not add up to 19, because one person preferred not to answer.

17. The total does not add up to 19, because two individuals gave invalid answers to this question.

18. *Idem*.

Both provinces' samples are limited in terms of their representativeness of the diversity of actors in Canada's repair community. Certain repair company categories or profiles are underrepresented, such as repairers working for franchises and those that may or may not be affiliated with manufacturers, because they were more difficult to reach. Canada's repair community encompasses a number of other actors, such as DIY repair workshops, work placement businesses or organizations, replacement parts vendors, manufacturers, etc., but only repairers working within a company were interviewed. In addition, this study was not able to involve the various ethnocultural communities and allophones who are also an integral part of the Canadian repair community, and this was because of language barriers. Specific measures to encourage the participation of individuals from these groups, such as the provision of interpreters or interviewers from the same ethnic backgrounds, may help to address these absences in future studies. Also, the response rate for the British Columbia survey was low, thereby limiting the significance of its results.

In addition, a comparison of the interviews conducted in Quebec (a qualitative study) with the survey conducted in British Columbia (a quantitative study) - with their differently-sized samples - presents certain limitations. The interviews in Quebec were more comprehensive than the survey in British Columbia. Certain subjects were broached in Quebec but not in British Columbia - such as customer relations - which is not to say that these issues are not present in British Columbia. Nevertheless, this mixed-methods research in two different Canadian provinces provides some validation of the findings, notably by increasing the level of confidence in the interpretations when the two studies arrive at the same results.

4. CONSUMER SURVEY

In order to gain a better understanding of consumers' views, a Web-based survey was completed by 2,080 Canadians aged 18 and over. The survey questionnaire was built on the findings from the review of the literature and the survey that was conducted in 2016-2018 as part of the Équiterre study on obsolescence. This data collection was done online between November 13 and 25, 2021 by MBA Research and focused on behaviors over the past two years. The data presented are valid for 2020 and 2021. Various criteria were applied to guarantee the representativeness of these characteristics and of various groups within the sample (age, gender, language, province, education, income, household size, occupation, civil status, place of birth and ownership status). By way of illustration, a representative sample of the same size would have a maximum margin of error of +/- 2% within a confidence interval of 95% (19 out of 20 times). The results were analyzed using the SPSS software.

Because this Canada-wide survey was conducted during the COVID-19 pandemic, the results may have been impacted by this reality (e.g. changes in purchasing and spending behaviour). However, comparing the results with the survey conducted in 2018 helps to mitigate these biases. As with any survey, a social desirability bias may also be present, especially when it comes to appliance purchasing and maintenance patterns. The very low number of respondents from the territories (Nunavut, Northwest Territories and Yukon), i.e. just one person, is a limitation in the representativeness of the survey, as the populations living there - mainly Indigenous peoples - are not properly represented.

The survey analysis also presented a number of limitations, since only univariate analyses were conducted. No cross-tabulations between various variables were done, which could have allowed causalities to be raised. The closed-ended questions in the survey are also a limiting factor, since they do not allow for an in-depth exploration of behaviours.

5. CONSUMER INTERVIEWS

In order to further investigate certain repair behaviours, interviews were conducted with consumers from all across Canada. Respondents were selected for interviews from the Canada-wide survey database, with the help of a question on willingness to participate in a qualitative phase. A total of 206 people signaled an interest in taking part in this phase of the study. Quotas were applied to this group (gender, age, language, province, etc.) to come up with a 25-person sample that would be more representative of the Canadian population. The sample for this research stage was composed as follows:

- Gender (identification): 13 women and 12 men
- Average age: 40
- 15 landlords and 10 tenants
- Place of residence: Quebec (8), Ontario (4), Alberta (4), British Columbia (4), Nova Scotia (3), New-Brunswick (2).

The interviews were conducted online in French and English in February 2022 and were recorded for transcription purposes. Their average length was 30 minutes. They were analyzed on the basis of the four themes identified in the interview guide: appliance breakdown or failure; repair motivations; obstacles to repair; and incentives to repair.

Since participation in the interviews was voluntary, those taking part in this phase of the research may have been more interested in repair and, thus, more inclined to have their products repaired than the rest of the Canadian population. However, the objective of these interviews was to gain a deeper understanding of the repair process, and not necessarily to reflect the practices of the general public.

6. LEGISLATIVE ANALYSIS

An exhaustive survey and search of international legislation regarding the right to repair was carried out (Quebec, British Columbia, Canada, Europe and United States), with the help of tables of legislation. This information was used to identify noteworthy measures for consideration by Canada and the provinces.

The process was based on the legistic theory of jurist Alexandre Flückiger¹⁹, which holds that in the face of a collective problem, the following questions must be asked:

- In the face of this problem, should we legislate more?
- Is legislating to deal with this problem a useful approach?
- What are the issues stemming from the problem that legislation can rectify?

These questions guided this portion of the research. The various provincial and federal laws in Canada by which these measures can be implemented were analyzed to identify possible amendments and additions to these legislative tools.

On top of this thought process, there were discussions and meetings with various stakeholders involved in the fight against planned obsolescence and consumer rights and on presentations within the framework

19. According to his book: "(Re)faire la loi - Traité de logistique à l'ère du droit souple".

of a webinar on the right to repair organized in the Spring of 2022 by the Berkley Center for Law and Technology.

The legal analysis also focused on items written solely in French and English. Therefore, if there was any legislation written in other languages that contained provisions regarding the right to repair, it could not be analyzed, and this constitutes a limitation of this research method.

7. MEETINGS WITH INDIGENOUS PEOPLES IN QUEBEC

With the help of the First Nations of Quebec and Labrador Sustainable Development Institute (FNQLSDI), contact was made with individuals working in waste management in indigenous communities and northern villages in Quebec. People showing an interest in the research subject were then invited directly by Équiterre to participate in a meeting on access to HAE repair in their communities and villages. Three meetings were held (in English and French) in the Spring of 2022 with a total of nine people. These individuals held positions in community or village government, with most working directly in the environmental and/or waste management sector. These meetings revolved around three questions:

- What HAE repair initiatives exist in your communities?
- What issues are you facing to have access to repair?
- In your opinion, what could be done to improve this access?

While the findings from these exchanges cannot be generalized to all Indigenous peoples living in Canada, they do represent a starting point for undertaking concrete actions or further research on the subject. Finally, it should be noted that some of those who took part in these discussions were not Indigenous peoples. Discussions involving exclusively Indigenous participants should therefore be held in order to better reflect the issues experienced by these populations.