FINAL REPORT

CONSUMER SURVEYS AND INTERVIEWS

SUSANA FONSECA –

ZERO – ASSOCIAÇÃO SISTEMA TERRESTRE SUSTENTÁVEL

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1. Executive Summary

Project LIFE AskREACH main objective was to promote the activation of article 33 of REACH, the EU chemicals regulation, a provision that gives companies along the supply chain and consumers the 'right to know' about substances of very high concern (SVHCs) in articles, be it immediately in the supply chain communication or by request, in the case of consumers. So, article 33(2) stipulates that on request by a consumer any supplier of an article containing an SVHC above a concentration of 0.1 % weight by weight (w/w), shall provide the consumer with sufficient information to allow safe use of the article including, as a minimum, the name of that substance. The relevant information shall be provided, free of charge, within 45 days of receipt of the request.

The development of the LIFE AskREACH smartphone application intended to easily allow consumers to act on their 'right to know', facilitating the sending of requests after scanning an article's barcode. So, via the use of the App Scan4Chem (and the accompanying consumer awareness campaigns) the project intended to reduce the emissions of SVHCs to the environment particularly by increasing consumer demand for articles free of SVHCs and thus setting incentives for substitution of SVHCs in articles.

Studies done by Eurobarometer clearly show that Europeans are concerned about the presence of chemical substances in their daily life and feel particularly uninformed about their presence and impacts. A similar pattern was identified among the users of the app Scan4Chem that participated in the different moments of the project were surveys and interviews were applied in the different partner countries (three survey moments in the app and two moments for qualitative interviews).

Throughout the project it became clear that consumers tend to trust on the EU regulations. In fact, consumers have high expectations for safety of products due to the EU regulation on chemical safety and express astonishment when they realize that products they use every day, including some that can be used by children, may contain substances of very high concern. This reality check can have detrimental effects on how Europeans think about the EU and on how safe they feel in their consumption choices.

Since this desirable and expected intervention at source to prevent the use of hazardous substances has significant flaws and it is not yet a reality, Europeans can only count on having access to information to be able to make more informed choices.

Unfortunately, que conditions of Article 33, in particularly the possibility of producers, distributors, retailers to respond in a 45 days' timeframe and, in particularly, the fact that the feedback is only mandatory if the article actually contains SVHC, makes Article 33 inadequate to meet its goal of informing and capacitating Europeans and to bring them a sense of safety that they lose when they realize SVHCs may exist on daily products.

Also, changing practices is a long run and complex process, it is not achievable by a project alone. The European Green Deal and the different initiatives foreseen within it to empower consumers (sustainable products initiative; empowering consumers initiative) and to strengthen the effective implementation of REACH and the EU chemicals policy (EU Chemicals Strategy for Sustainability; Restrictions Roadmap; REACH revision) are instrumental to create the structural net that, together with awareness raising and information, can allow for the construction of new practices by Europeans and companies, when it comes to removing SVHC form their articles.

The main impacts of LIFE AskREACH from a social perspective

Despite the difficulties in acting on article 33 due to its conditions (until 45 days to get a response; obligation to give an answer only if there are SVHC in the article) the app users recognize that the project has contributed to improve knowledge, information and awareness about the theme. LIFE AskREACH and the app has therefore contributed to Europeans feeling more informed, knowledgeable and aware of their rights, besides giving them tools to be more conscious when buying.

Nevertheless, it was clear that to be able to activate a higher number of Europeans it would be important to have interventions with a lower burden on consumers, than the one posed by article 33 and Scan4Chem. Providing immediate feedback and having information available when requested by consumers is fundamental to guarantee higher participation and activation of right to know in the EU.

Throughout the project it became clear that the key is to prevent the use of hazardous substances in products, because Europeans will never be experts on everything we want them to be and the responsibility of those who place articles on the market and those who regulate them is to live up to the trust of consumers in the EU to provide them with non-toxic articles in the first place.

Europeans feeling more informed about SVHC in articles

The objective of the project was to have at least 28% of the app users stating that their level of information on SVHC in articles has improved. In terms of evolution, the first app survey indicated that 18% of the app users who have answered it considered themselves well or very well informed. This number jumped to 22% in the third and last survey. Although the increase is not very high and it is lower that the objective defined in the project proposal, considering the hurdles the campaigns faced (for example, most of the implementation period was during the pandemic, and the length and complexity of acting on right to know is detrimental to involving citizens other than activists), but also the recognized complexity of the issue, and the awareness expressed by interviewees that it is not easy to feel some sort of control over the situation (for example, the five senses are very useful when it comes to chemicals), the results are promising and clearly show that it is possible for a European wide project to influence the level of knowledge on a specific issue.

Right to know

Another indicator used to evaluate the contribution of the project to improve the awareness of European citizens on issues related with chemical substances in articles was the one evaluating the level of familiarity with the right to know, as foreseen in article 33 of the REACH Regulation, that is the base of the app Scan4Chem.

The results from the third app survey show us that almost three quarters (71%) of the app users that participated in the survey had no previous knowledge of this right. When we analyze those that say they previously knew about right to know before using Scan4Chem (29%), most got the information from media (33%), social media (19%), in a professional environment (19%), followed by NGO/consumer organizations (10%). These results differ from the ones obtain in the first app survey, where the professional environment was the most common justification for a previous knowledge on right to know.

The fact that 29% of respondents assume that they knew about their right to know, previously from using Scan4Chem, shows that LIFE AskREACH campaign for consumers has had an impact, making media and social media the most common sources of information on this very relevant citizen's right.

But what is also clear, both from the Eurobarometer studies, as well as the interviews, is that there seems to be a generic knowledge of the 'right to know'. Not the specific right to know as it is laid down in REACH Art. 33, but rather a shared perception that producers and retailers have the general obligation to be transparent regarding the products they sell. Hence, most users did not know of the right to know resulting from article 33 of REACH but had the perception that this information should be made available for consumers by producers.

Articles containing SVHC

One of the underlying arguments to justify the relevance of the app Scan4Chem is the documented interest by consumers to have more information on the presence of substances of very high concern in articles, so that they can make more informed choices and avoid contact with such substances.

Among the respondents of the survey the most frequent answer has always been to clearly say that they would never buy an article that contains SVHC (50% in the last survey). For 23% it will depend on the product and for 18% of respondents looking for an alternative would be the first option, but if they could not find it, they would buy the article despite the presence of such substances. It is also worth noting that only 1% claim that, despite having the information about the presence of SVHC in an article, they would buy it as usual, what shows that knowing about the presence of such substances in articles triggers the need of consumer to reflect on their purchasing behavior, even if the final decision can vary.

The number of app users stating that they would never buy a product that has SVHC did not vary much throughout the different surveys (increased from 49% to 50%), but the overall results show that most European citizens will not buy or will work towards finding more suitable alternatives when faced with the information that a certain product contains SVHC.

General opinion on the way forward regarding chemicals in products

Throughout interviews it was common for respondents to comment on the usefulness of Article 33 of REACH and to present suggestions on how to improve the situation of chemicals in articles. Overall, three main clusters where identified. The first one was a call for more transparency and honesty from companies and to make this type of information available in some way (on the product packaging itself, on a website, using an easily accessible data base, among other examples). So, transparency issues and looking at more information to empower consumers on their choices was seen as a key strategy to truly implement right to know.

For this to happen, the importance of providing simple to use and easily understandable information was considered key, since many interviewees do not see them (and their fellow citizens) as experts in interpreting complex information about chemical substances. Transparency was also associated with the need to have a stronger and more effective enforcement on the obligations that companies must provide information on what the products they place on the market and sell contain. This pressure was seen by some as key for having safer articles on the market. Overall transparency was seen to build trust and allow more empowered European citizens without overburden them.

The second cluster of answer was related to a stricter approach, to ban chemical substances that have hazardous properties, with a clear questioning of limits (associating with the idea that in daily live we are all subject to a chemical cocktail and not just one specific substance) as the appropriate way to protect European citizens and the environment. The expression of some astonishment with the fact that SVHC's are still allowed in consumer articles in the EU was also common.

A third answering cluster was related with the need to improve the legislation. Although this approach is closely linked with the two previously mentioned, for some interviewees it was very clear that this is the central element to guarantee that hazardous substances do not enter into the market and to guarantee increased transparency.

2. Introduction

The project LIFE AskREACH addresses the 'right to know' pursuant to Art. 33(2) of the EU chemicals regulation REACH, providing a claim for consumers to ask companies about substances of very high concern (SVHCs) in articles. AskREACH developed IT tools to foster communications about SVHCs in articles, thereby contributing to the implementation of REACH Art. 33. The project aims to reduce the emissions of SVHCs to the environment, particularly by increasing consumer demand for articles free of SVHCs and creating incentives for producers to substitute SVHCs in articles.

From the first moment, the project LIFE AskREACH had the objective of understanding how European citizens think and act when it comes to problematic chemical substances. During the first moments of the project a baseline study was developed, articulating Eurobarometer studies, that for many years have included questions trying to understand how Europeans perceive and deal with chemical substances on their daily lives, a survey prepared by the project team and applied via the networks of the different partners in fourteen countries (that reached almost 14 500 answers), and a literature review.

The main results pointed to chemical substances being among Europeans' main concerns regarding environmental issues and for consumers being concerned about substances in products. At the same time there was a clear recognition of a perceived lack of information about chemical substances in general. In this regard, it is not surprising that the LIFE AskREACH consumer surveys and qualitative interviews found that awareness of the 'right to know' was low among respondents. Of the few respondents who were aware of this right, the majority had never sent a request of information to a company. However, the majority of respondents thought that producers or retailers should inform consumers on request whether an article contained problematic substances.

The interest for more information about the presence of problematic substances in articles was also clear, particularly about articles meant for children and articles like clothes, shoes and accessories, was overwhelmingly high in all participating countries.

Following the launch of the App prepared by the project - Scan4Chem - during 2019/2020 in the different partner countries, in 2021 it was the moment to evaluate, for the first time, what the users think about the App, how and when they use it and what are their perceptions about chemicals in products and their right to know if an article contains substances of high concern. Overall, three surveys were conducted between 2021 and 2022, together with two sets of qualitative interviews. This report presents the main results that came out of these multiple interactions with Scan4Chem users, both qualitative and quantitative.

2.1. The focus on Right to Know and the role of the App Scan4Chem

Article 33(2) of the EU chemicals regulation REACH gives consumers a 'right to know' about substances of very high concern (SVHCs) in articles (e.g. furniture, textiles, electronics, toys etc.). More specifically, the provision stipulates that on request by a consumer any supplier of an article containing an SVHC above a concentration of 0.1 % weight by weight (w/w), shall provide the consumer with sufficient information to allow safe use of the article including, as a minimum, the name of that substance. The relevant information shall be provided, free of charge, within 45 days of receipt of the request.

In addition, this provision needs to be put into context with REACH Art. 33(1), requiring suppliers to communicate to the recipient of an article down the supply chain the names of SVHCs present in those articles above 0.1 % with available safe handling information – without a need for any request by the recipient.

However, both Art. 33(2) on consumer communication as well as Art. 33(1) on supply chain communications lack implementation by the duty holders.

The development of the LIFE AskREACH smartphone application intended to easily allow consumers to act on their 'right to know', facilitating the sending of requests after scanning an article's barcode.

With these activities, the project aims to reduce the emissions of SVHCs to the environment particularly by increasing consumer demand for articles free of SVHCs and thus setting incentives for substitution of SVHCs in articles. More concretely, via the use of the App Sacn4Chem (and the accompanying consumer awareness campaigns) we expect:

- Consumers to become more aware, have access to information on SVHCs in articles and avoid articles with SVHCs.
- Companies to be incentivized to communicate on the presence of SVHC in their products, to gain a better understanding of SVHCs in their articles and, in order to maintain or increase their market shares, to substitute SVHCs with less problematic alternatives.

2.2. Who has answered?

During the first semester of 2021 while using the app, the possibility to participate in a short online survey was suggested and it was possible to gather 1726 answers. This surveying exercise was repeated two more times (first and last quarter of 2022). On the second survey we collected 796 answers and on the third and last survey we collected 1282 answers. Overall, we collected 3804 answers in the three surveys conducted via the App Scan4Chem.

Regarding the app surveys, of the 3804 answers collected during the three rounds, only 2250 had an indication of the country (Table 1).

Table 1 - Distribution of answers per partner country (%) – Online Survey

Country	%
Austria	5
Croatia	2
Czech Republic	4
Denmark	20
France	9
Germany	28
Greece	5
Latvia	2
Luxembourg	1
Poland	4
Portugal	4
Serbia	12
Sweden	4
N - 2250	100

In the first semester of 2022 and at the end of the same year, a qualitative interview was conducted in a total of 16 countries with 158 participants (139 were conducted in the 12 partner countries, and the remaining 19 were collected in replicating countries - Estonia – 9; Hungary – 4; Spain – 5 – and

one in Serbia), with the objective of collecting data that would allow us to understand and contextualize the data collected via the survey in a deeper way.

In the case of interviews, country information was always available so the distribution of the interviews was the one presented in Table 2.

Table 2 - Distribution of answers per partner country – Qualitative Interviews

Countries	Number of participants	%
Austria	14	10
Croatia	7	5
Czech Republic	8	6
Denmark	8	6
France	6	4
Germany	20	14
Greece	14	10
Latvia	10	7
Luxembourg	7	5
Poland	25	18
Portugal	11	8
Sweden	9	7
Total	139	100

Table 2.1 - Distribution of answers per replicating country – Qualitative Interview

Countries	Number of participants	%
Serbia	1	5
Spain	5	26
Hungary	4	21
Estonia	9	48
Total	19	100

As often happens on environmental issues, women where the majority of respondents to the online surveys (58%) (figure 1). Most answers came from users aged 31 to 45 years old (35%) and 46 to 60 (29%). Those over 60 years and between 20 to 30 years old account for 21% and 13% of the answers, respectively. Those younger than 20 years are the least represented group with only 2% of the answers (figure 2).

Figure 1 – Gender distribution of respondents (%) – Online Survey (3 rounds)
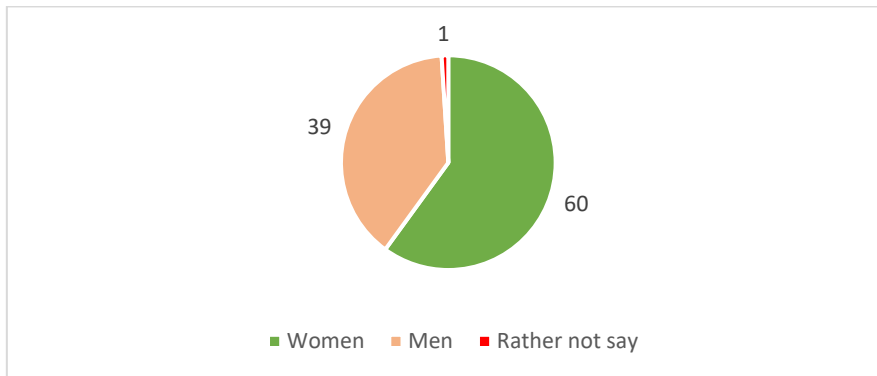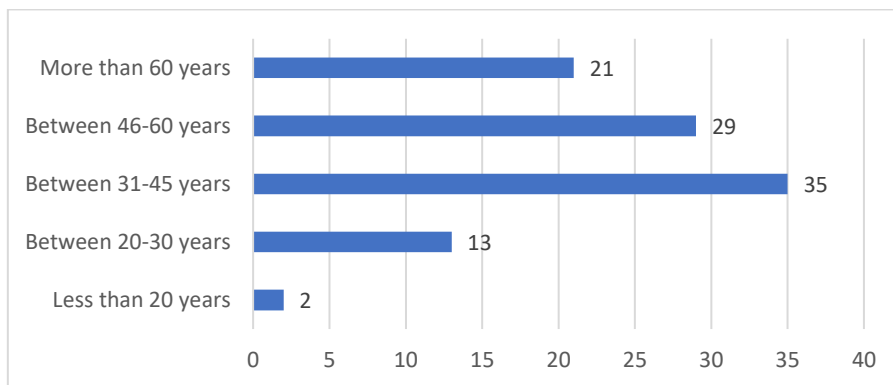

Figure 2 – Age groups (%) – Online Survey (3 rounds)

Regarding the interview, women were also the majority. From the 158 participants, 100 were women, and 58 were men (63% and 37%, respectively) (Figure 3). The age group which prevailed was from 31 to 45 years old, corresponding to 54%. The least represented age groups are the ones from the extremes (those with less than 20 years old – 1% - and those with more than 60 years old – 8%). The remaining age groups, namely from 20 to 30 – 22% - and from 46 to 60 – 15% - were more common among the interviewees (Figure 4).

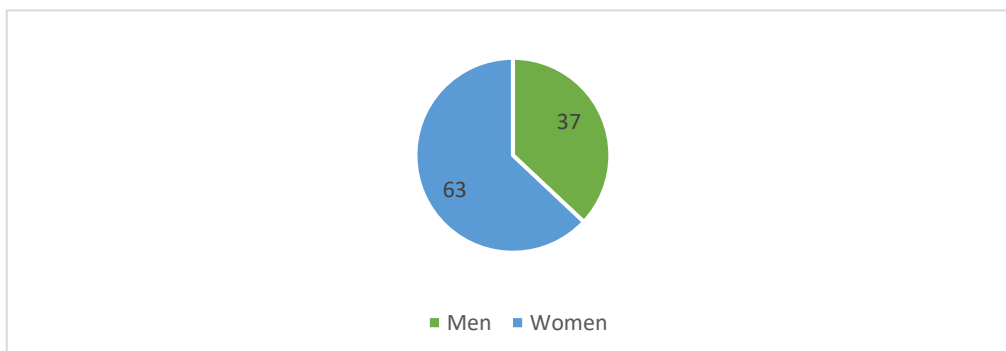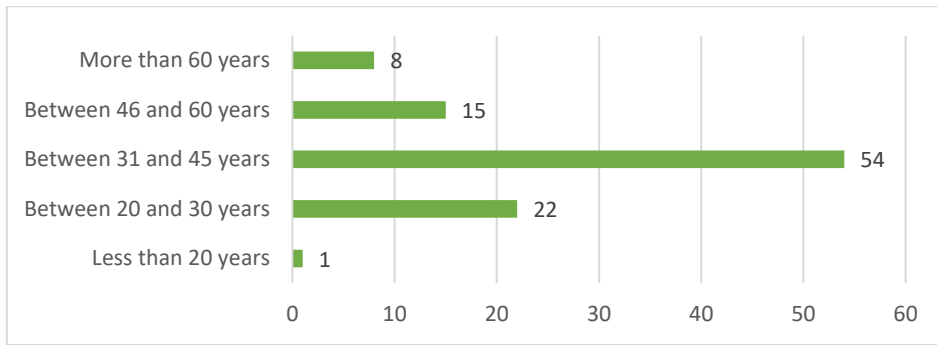**Figure 3 – Gender distribution – Qualitative Interview**

**Figure 4 – Age Groups – Qualitative Interview (N – 158) (%)**

In terms of school degrees, this is an unbalanced group of respondents when compared with the usual school years distribution among the general population, since 62% of those who answered the online surveys and this question have a university degree. Among the remaining respondents we can find 17% with a technical education and 14% with a high school diploma. Only 7% have a basic education (figure 5).

Figure 5 – Number of school years (%) – Online Survey (3 rounds)
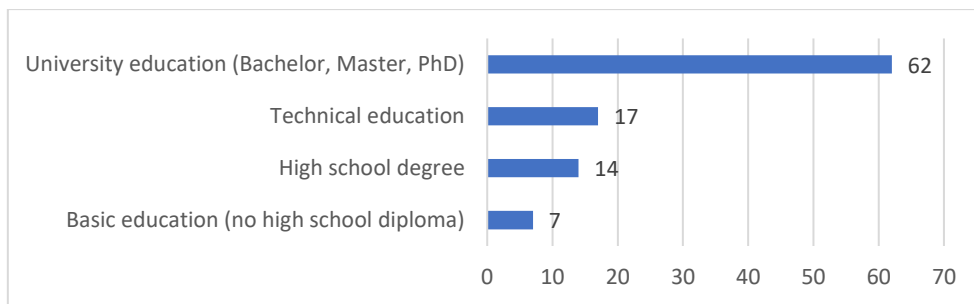
The numbers from the qualitative interview don't differ much. There is still a majority of people with university education – 122 (78%), with basic education there was just less than 1%, with secondary education there were 27 (17%) and with technical there were 6 participants (4%) (figure 6).

Figure 6 – Education levels (%) – Qualitative Interview
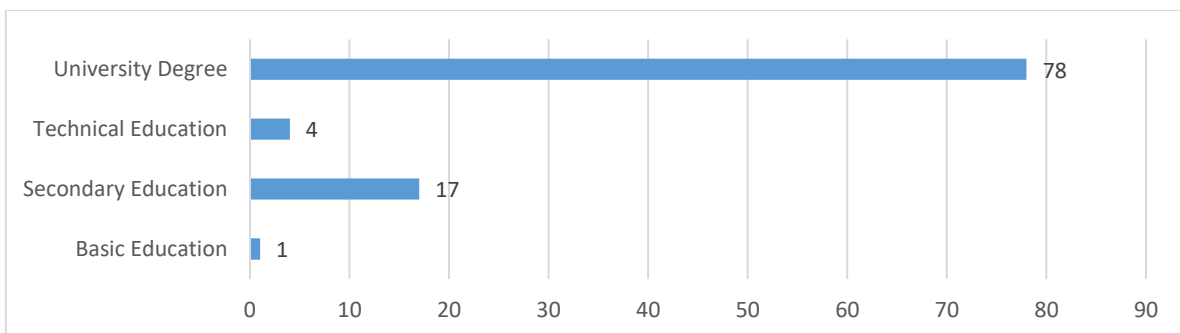
3.   The main results

The online survey was divided into three parts[1]. The **first** was dedicated to questions related with the perception app users have of the presence of chemical substances in daily life products, namely their level of concern and how informed they feel about the issue, including about "right to know", that is, if they had previous knowledge (before using Scan4Chem) that as a European citizen, they have the right to ask producers or retailers, if a product contains substances of very high concern. It was also explored the action they would take in case they find out or get the information that the product they intend to buy has SVHC's.

The **second** part of the survey was dedicated to understanding how users found out about the app, how regularly they use it, how frequently they can find the information about the articles they search for or, in alternative, how often they find the right contacts to send a request of information. The number of requests sent as well as how often they are meet by an answer by producers/distributors/retailers are also approached in the survey. The final question is dedicated to get the opinion of app users on the easiness of use, potential for consumer empowerment, knowledge and community building.

The **last part** focuses on knowing some social background of the app users that decided to participate in the survey (information presented above).

The qualitative interview was organized similarly, although it had more questions added[2]. The first questions were focused on trying to understand the concerns on the daily lives of the respondents, if the chemical substances are something they worry about and how they deal with this concern. The second group is dedicated to the right to request information on the presence of substances of very high concern (SVHCs) in articles, if they were aware of this right that was established in Article 33 of REACH and what is their opinion about it. There was also a section focusing on the app itself – what they use it for, their perception of it and the influence in their lives and consumption practices. We also explored the matter of requests – if they intend to send more and if they used it or will use it in online purchases. The last question was focused on stimulating an overall reflection on the process around how the EU deals with the matter of chemical substances in products, and therefore, we asked for suggestions on what they would like to share with decision makers and brands on this issue.

This report presents the information obtained from the qualitative interviews and the app surveys side by side. After presenting the results around perception and relevance of chemicals in articles for XXXX, we will follow by presenting the data related with the three project indicators that were monitored via these research tools. The final part will focus on some extra questions related with the app and some overall reflections on policy.

The three main indicators monitored using the surveys in the app Scan4Chem are:

- Consumers more aware of their right to know
- Consumers more informed about the presence of SVHC in articles
- Number of app users not buying articles if containing SVHC >0.1%

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[1] The script of the app survey can be found in Annex I of this report.

[2] The script of the interview to users of the App Scan4Chem can be found in Annex II of this report.

3.1. Chemicals in daily life

Part of the justification for this project comes from the widespread concern of Europeans about the presence of substances of very high concern in articles. This concern is very well documented in several rounds of Eurobarometer surveys that included questions on the presence of problematic chemicals (carcinogenic, toxic for reproduction, harmful to the environment etc.), usually described as Substances of Very High Concern – SVHC) in consumer products (like toys, shoes, clothes, electronics, furniture, etc.). The results are clear throughout the several years since these questions have been included. The results of our surveys show that also for the Scan4Chem app users, this concern is equally high, ranging from 90% in the first survey, to 94% in the third.

The fact that always more than 90% of the users of the App that answered the surveys expressed a high to medium level of concern with this issue, indicates that this is a matter that decision makers should take under consideration (figure 7).

Figure 7 - In general, do you feel concerned about the presence of problematic chemicals (SVHC) in consumer products (3ʳᵈ survey)? (%)
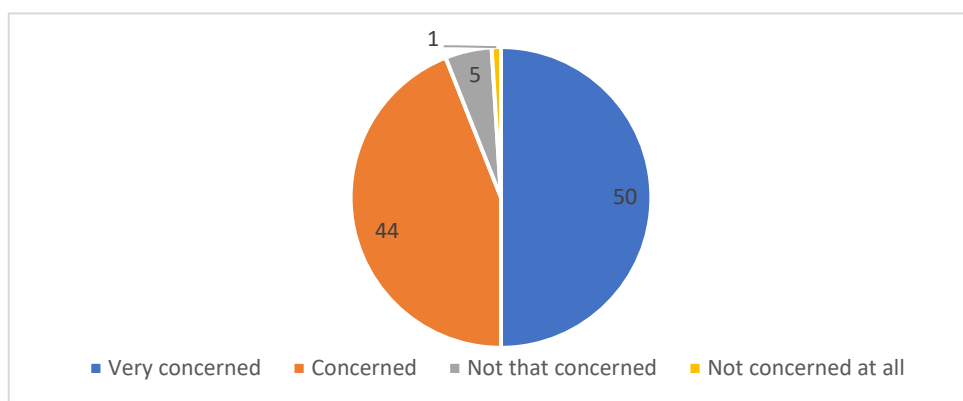
Although differences in concern are not apparent when age and education is considered, gender seems to exert a small difference. In fact, it is more common among respondents identifying themselves as women to express higher levels of concern (very concerned) (Figure 8).

Figure 8 – Level of concerned about the presence of problematic chemicals (SVHC) in consumer products according to gender (first survey)? (%)
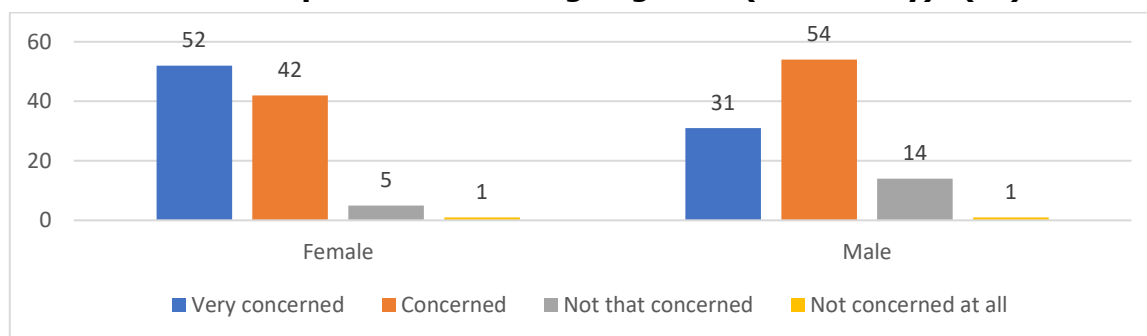
It is also interesting to see that when we analyze the impact of the level of information that respondents have and the level of concern they express about chemicals in products, we can see that it is minimum. Therefore, these results show a generalized concern with the presence of chemicals of very high concern in articles, even among those that perceive themselves as being moderately of highly informed about the issue. So being more informed does not mean being more

relaxed about it or feeling that they have more control to defend themselves from the presence of hazardous substances in day-to-day articles.

Having this context as a base, it is relevant to explore to what point the presence of hazardous chemical substances in articles is a purchasing criterion or is at least present among the main purchasing criteria used by respondents.

Among the main criteria used to select what to buy, interviewees highlighted price and quality as the two more important, followed by material, brand, durability, sustainability, origin, looking for certificates, reviews/consumer tests, avoiding plastic, design, functionality, toxic/chemical substances. Figure 9 shows the most common purchasing criteria.

When brand is mentioned, many times it's related to its known quality, durability, reputation or even because of fairtrade issues.

Figure 9 – Main purchasing criteria (times mentioned) – Qualitative Interview
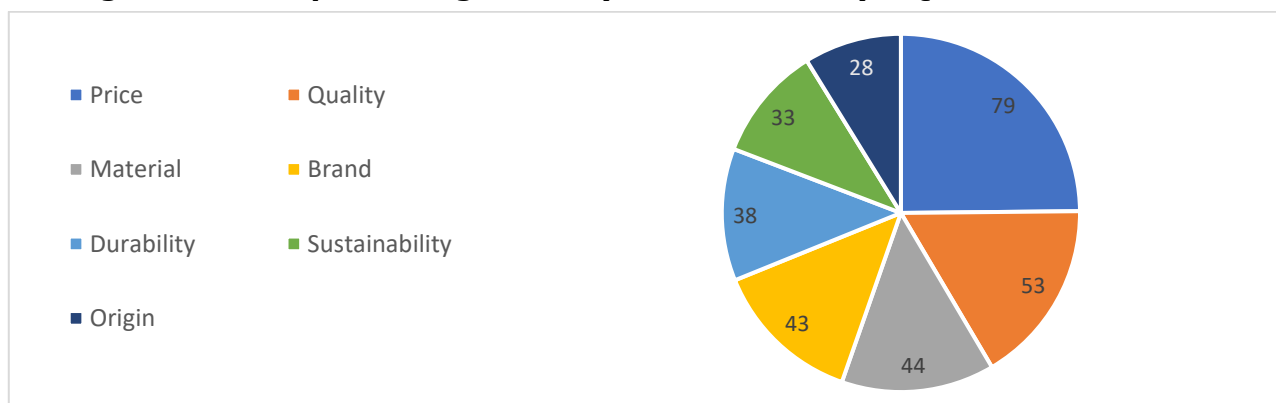
Going deeper into the relevance of information about the presence of chemical substances in the moment of purchase of a product like clothes, shoes, toys, furniture, among others, more than half of the interviewees (55%) recognized that they do think about the presence of chemical substances when they make their purchasing choices. Most consider this aspect regularly (58%), but for a smaller group (13%) this concern is mostly related with specific products. In fact, it is quite common for interviewees to elaborate on the different levels of concern about chemical substances, depending on the product, with those used more closely (like clothes, cosmetics and particularly food) or destined for children being the subject of closer attention and concern. These are also some of the main article's categories more frequently scanned by app users. So, besides toys and children's articles, clothes, kitchen utensils, shoes and electronics are among the most frequently scanned articles.

For the remaining 29%, the potential presence of chemical substances in articles is not considered a priority criterion when purchasing articles in daily life. This happens for a variety of reasons, from lack of information or awareness on the risks and what to do about it, to prices (the need to choose products that are cheaper and usually less sustainable) or even, to the recognition of the limited capacity an individual has to act and control this type os aspects of daily life.

This pattern of answers, with the majority valuing information on the presence of chemical substances in articles was expected, considering that those responding the surveys and being interviewed are users of the App Scan4Chem, an app specifically created to facilitate the access to information on the presence of SVHC in articles.

When questioned about their specific concerns, health issues, whether their own or their family/ community or in general, and the impacts on environment were the most recurrent.

"My concern is the presence of chemical substances that might be harmful for people's health. I choose known brands that I believe I can trust and that I can have contact with." (31-45 years, Greece)

"Mainly I am concerned about the presence of hazardous chemicals and the long-term impact that they might have on the environment (31-45 years, Greece)"

"Well, it is both the short- and long-term effects on mine and my family's health, and for the environment and the health of those who lives were the products are being made. It's both short and long term, but I rather take short term risk than long term risk that we cannot foreseen." (46-60 years, Sweden)

In terms of how to deal with this, the most repeated answer was to check for labels and the materials which the product is made of and do some research to look for more information about it. Checking apps was also mentioned, namely Tox-Fox and Scan4Chem. Other ideas were shared, like avoiding plastic products, buying second-hand, reduce consumption in general, wash the products before using them, especially textiles and clothes, or simply not buying or search for an alternative.

Not all interviewees were straightforward when asked about how long they've been concerned about these issues. For that reason, and to simplify the data, the answers were divided into categories: 15 or more years; 10 to 15 years; 5 to 10 years; less than 5 years; and for what participants characterized as a "long time" or "for a while", not specifying the number of years (figure 10).

Figure 10 – How long this concern exists – Qualitative Interview
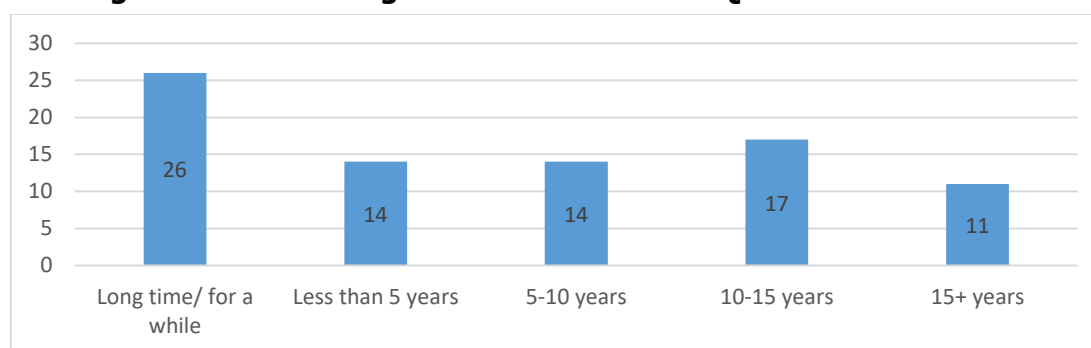
The reasons stated for the beginning of this concern were varied. The general concern about the environment and health issues are the most referred issues, but beyond that there is some variety of reasons. For some it was the professional environment that led them to be more aware, for others the media and tv shows and documentaries, particularly when some of these questions started being a little more present in the news. The project LIFE AskREACH was also mentioned several times as a relevant element in raising the awareness on this issue. Becoming a parent (father or mother) was the turning point for others to be more aware of the importance of considering the eventual presence of hazardous chemicals in articles.

Besides the role media played for some in increasing the awareness on chemicals in products, also personal relationships had a relevant effect on others. Friends and personal relationships, but also parents that had this type of concerns influenced the way some of the interviewees are aware of chemicals in products at present.

Additionally, few had their concern grown because of health issues or reactions they had to some product that made them rethink the things they choose to buy or not.

"I've been making more conscious choices for the last couple of years. Before, I knew about different issues, but they didn't seem serious enough to worry about them. My change in attitude has been greatly influenced by people for whom environmental and social issues are of vital importance. They've instilled in me willingness to delve into various issues and a more responsible approach to choices I make every day." (20-30 years, Poland)

"Generally, it started when I became a mother. Before I became a mother, I did not think of these things at all. I also think the general awareness about this issue was almost none/zero about 10 years ago." (31-45 years, Czech Republic)

"I actually found out about it through the app, actually because, funnily enough, I saw an advertisement for Scan4Chem and found it interesting and then dealt with the topic a bit." (34 years, Austria)

"I have friends who are into healthy lifestyles, who are vegan and who are vocal about that kind of things. This is what got me interested at first, it was when I was still in high school." (28 years, Croatia)

"I, for one, would not have that awareness. But you read things and your concerns change. A few years ago, we had no idea that things could be as harmful as they are now. So, as I got more information... I speak for myself, if you don't have that information, you don't have that concern. And I think a large part of the population, because they don't seek it out, they don't care about it at all. But it was a few years ago, not many years ago. I have no idea of the right year. It was progressive. As a kid I never thought about any of this, there were no such concerns 20 or 10 years ago". (46-60 years, Portugal)

3.2. Level of Information

One of the main objectives of the LIFE AskREACH project was to increase the level of information of Europeans on the issue of SVHC in articles and on the right of each citizen to request information on its presence in articles to producers, distributors or retailers. With these objectives in mind, a wide communication campaign was launched and implemented in the different partner countries for several years (particularly from 2019 onwards). Throughout this period the surveys in the app were used to monitor the impact of the project on certain variables, with "consumers feeling more informed about the presence of SVHC in articles" being one of them.

From the first app survey until the last there was a positive evolution in this indicator and from the interviews, we understood that the project had, indeed, contributed to increase the level of information about the presence of hazardous chemicals in articles, particularly among those using the app, but not only them.

When asked about how informed they feel about the presence of these problematic chemicals in products in the third online survey, most respondents consider that they lack information, with 21% considering that they have no information at all and 57% assuming that they are not well informed. Only 22% consider to be well informed (17% rather well informed and 5% very well informed) (figure 11).

Figure 11 - How informed do you feel about the presence of these problematic chemicals (SVHCs) in products (N − 1030)? (%) − III online survey

■ Not informed at all ■ Not very well informed ■ Rather well informed ■ Very well informed
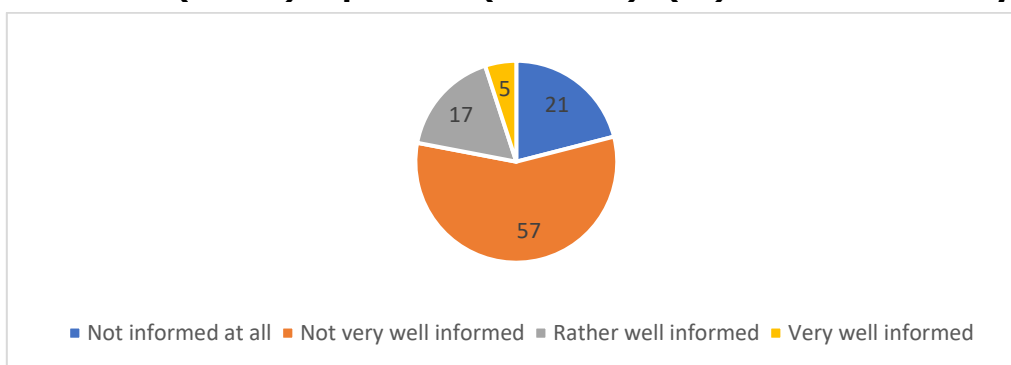
In terms of evolution, the first app survey indicated that 18% of the app users who have answered it considered themselves well or very well informed. This number jumped to 22% in the third and last survey. Although the increase is not very high and it is lower that the objective defined in the project proposal (28%), considering the hurdles the campaigns faced (for example, most of the implementation period was during the pandemic, and the length and complexity of acting on right to know is detrimental to involving citizens other than activists), but also the recognized complexity of the issue, and the awareness expressed by interviewees that it is not easy to feel some sort of control over the situation, since it is not easily captured using the usual tools (the five senses, information on packaging, labels, etc.), the results are promising and clearly show that it is possible a European wide project to influence the level of knowledge on a specific issue.

This increase, although moderated, is also relevant to highlight because the interviewees gave very positive feedback about the project's impact (not only the app) on their level of information and awareness. They state to use the app as a tool among different strategies to raise awareness and the app is presented as relevant even for those with a background in chemicals.

"The app works in a set of other initiatives that promote knowledge about this problem of chemicals. It's a tool, but in the context of other initiatives." (46-60 years, Portugal)

"Yes, I absolutely have. But not just the app itself. But to gain some knowledge that there may be some bad chemicals in goods. Once you find out that there is such a thing and hear about it in the media, you react." (20-30 years, Sweden)

"Definitely! I know exactly what SVHC are, to more details, I know more about them now. I know, what I should do and avoid as a future mother. I know that various organizations and legislations are working on this. I learned it in a very simple way, a way suitable for a layman." (31-45 years, Czech Republic)

"I heard about plasticizers years ago. Other harmful substances are rather unknown to me…project AskREACH made me aware of it." (31-45 years, Germany)

"Yes, this educational aspect of the app made me think more carefully about my purchase decisions. Now I don't just look at whether a product is recyclable, but I look a little deeper." (20-30 years, Poland)

"Because of this project I learned a lot about this. They never taught us about this in university and I think they should have. If chemists don't know about this, who does?" (28 years, Croatia)

One of the tools that can be used by more informed citizens when they have to make informed decisions regarding articles with less hazardous substances is ecolabels. Therefore, in the qualitative interview, we asked if they were familiar with any certificates related with chemical substances. Around 78 people answered they are familiar with some or said they knew about them, but not all were able to give examples, for example because although they can recognize some symbols on the packaging, they cannot remember the names of the certificates at the time of the interview.

Although not all are related to chemical substances, these were some of the known certificates mentioned, in paratheses showing how many times each one was cited: Oeko-tex (17), Ecolabel (12), Fairtrade (5), GOTS (11), FSC (3), Blue Angel (9), TÜV (2), Ecocert (4), Swan Label (6), GS label (2), Asthma Allergy label (2).

"I confess that I don't know how to answer that suddenly. But I even think that the symbols are more or less visible by the use of colors like red, white, colors that create some impact. There is even something that… not suddenly remembering what the symbol is, when one is looking at the shelves one sometimes comes across these warnings." (20-30 years, Portugal)

"Usually if it is certified organic, biological, biodegradable, fairtrade, I am familiar with it. When it has toxic substances, I know the basics, I can tell them apart. Those orange symbols. If it's corrosive, toxic to marine life. But they are not on many items, let alone textiles." (31-45 years, Portugal)

"I know some labels, but I cannot name them right now. I would recognize some if I see them. But I have become skeptical because some labels are not trustworthy and only serve the green washing of producers." (+60 years, Germany)

3.3. Right to know

Another indicator used to evaluate the contribution of the project to improve the awareness of European citizens on issues related with chemical substances in articles was the one evaluating the level of familiarity with the right to know, as foreseen in article 33 of the REACH Regulation, that is the base of the app Scan4Chem. It is therefore important to understand if the app users already knew of such a right previous to using the app. The results from the third app survey show us that almost three quarters (71%) of the app users that participated in the survey had no previous knowledge of this right. When we analyze those that say they previously knew about right to know before using the Scan4Chem (29%), most got the information from media (33%), social media (19%), in a professional environment (19%), followed by NGO/consumer organizations (10%). These results differ from the ones obtain in the first app survey, where the professional environment was the most common justification for a previous knowledge on right to know.

The fact that 29% of respondents assume that they knew about their right to know, previously from using Scan4Chem, shows that LIFE AskREACH campaign for consumers has had an impact, making media and social media the most common sources of information on this very relevant citizen's right. Although difficult to quantify, considering that previous studies have shown that, for example in Germany (with non-representative samples that can be characterized as being more interested and knowledgeable of these issues than the general population and with more specific questions on the right to know) only 15% of the respondents knew what the right to know was, having a 29% rate of response in this category is stimulating for continuing the communication work done so far, so that right to know is progressively known for a large parcel of the population.

Figure 12 – Before using the app Scan4Chem, did you know that every European citizen has the right to ask to the producer or retailer, if a product contains any of these problematic chemicals (SVHC) (N – 1020)? (%) – III online survey
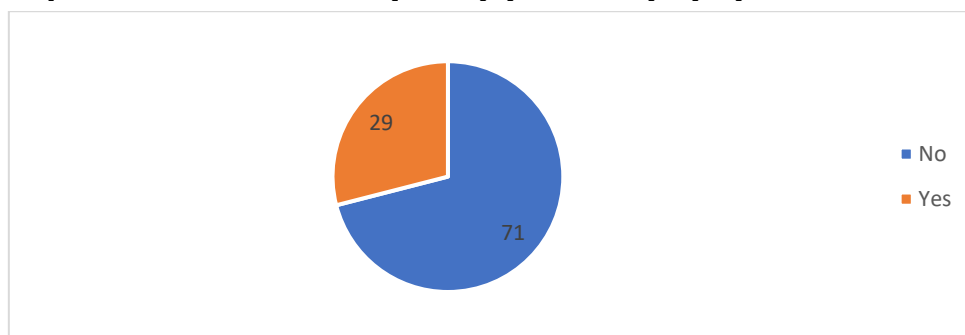
Similarly, when asked if they were aware of the existence of this right on the interview, 37 (24%) were aware of this right, but the remaining answered in the opposite direction, therefore, most interviewees (74%) were not aware of this right before using the Scan4Chem.

Only 11 of the 37 participants who were aware of this right already acted on it before downloading Scan4Chem. For those who mentioned how they used it, some did it through ToxFox app, others sent letters or e-mails to companies, and some specified that the interactions had been related with work. So, even among those who already knew about article 33, only a minority got to exercise this right and never on a regular base, a clear indication of the burdensome aspects associated with it.

The project expected in the baseline assessment to have around 10% of consumers in the partner countries aware of their right to know about SVHCs in articles, considering that even among more aware groups, the numbers are only slightly higher (15% in a German study – Hartmann et all: 2018). In the 1st survey 26% of respondents state they are quite aware, and 30% in the third and last survey (projected 35%).

But what is also clear, both from the Eurobarometer studies, as well as the interviews, is that there seems to be a generic knowledge of the 'right to know'. Not the specific right to know as it is laid

down in REACH Art. 33, but rather a shared perception that producers and retailers have the general obligation to be transparent regarding the products they sell.

Hence, most users did not know of the right to know resulting from article 33 of REACH but had the perception that this information should be made available for consumers by producers. Even those who already knew about it recognize the contribution of the AskREACH project.

"But I didn't know about the right to know concerning specifically SVHC. I did know before that in general we as consumers have the right to request information from producers about the composition of the product." (31-45 years, Poland)

"I didn't know there were laws or some EU directives, but as a consumer I felt this was something that should have been available to me." (20-30 years, Croatia)

"I have always been quite rights oriented, I know consumer law, so I thought I would have those rights, but I had not thought about it at all because I thought that EU regulations only allow safe products on our market." (31-45 years, Latvia)

"I did not know this right, and I thought that these substances were not present, being dangerous, they do not have to be in the articles I consume." (31-45 years, France)

"No, and to be honest I thought that what is sold is not harmful by definition" (31-45 years, Luxembourg)

So, the large majority of the qualitative interview respondents believed or already knew they had the right to know information about what they are consuming although there were still some who didn't know or stated that they didn't think much about it until they got to know this app. For both who did and didn't know of this right, there were a few who showed a lot of skepticism about the hypothetical responses they may get, showing little trust in the companies in general.

In terms of how this right should be materialized, most wished that the information was available in the packing itself, through some kind of label or an "ingredients" list, for example. This solution would allow that when at the store to buy an article it would be possible to know right away if it was safe or not. Others mentioned that the app Scan4Chem is a good way, or at least a step, to make sure consumers make the right and conscious decisions. Another option mentioned was related with the availability of an online database, where it would be possible to find the information needed about the products. It was also mentioned that it should be the producers/retailers obligation to provide and declare this type of information to consumers.

Although not so frequent, there were various other proposals on how to make this right to know a reality, namely: pressuring so that companies need to create an internal infrastructure to respond to these consumer requests; search for the information online; having a QR code on the products; awareness campaigns; and improving customer service so that when such a question arises at the store, it is possible to get an answer right away.

"Yes. This right could be applied more effective with designating specific responsible authority to control if such requests are answered" (31-45 years, Latvia)

"(…) the information should be automatically available. If it's our right… more than our right, it should be the other way around: it should be an obligation for the brands to have this information automatically available as soon as they put the product on the market. So, it should take effect from a certain date, all products should have an international database, where more information regarding the product should be housed in the bar code. (…) I don't know, I don't master this part, but making a connection with the app, it's a little annoying that the person must ask for information knowing that we won't get an immediate answer. You have a deadline of 45 days for the company to respond - if it responds. Considering that the deadline is quite long, the feeling that the person has is that the information is not going to arrive." (31-45 years, Portugal)

In the interview we tried to go deeper into the opinion about the right itself. After presenting the right to know about chemical substances in articles, how it works and what it includes, and asking what they think about it, many participants state that it is a good right. Even though some interviewees commented further, they still acknowledged its importance. There were also almost the same amount of people saying it's good indeed, but aren't so happy about some facts about it, and a few showed dissatisfactions about it as a whole – some described it as inadequate, flawed, ineffective and incomplete. So, the main difference between these 3 groups is how they perceive it: the first one is more positive about it, prioritizing the fact that this right even exists; the second

looks at its shortcomings with greater attention and critique; and third only recognizes and comments its imperfections.

For many interviewees (44) 45 days is way too long to wait for a response. This is a fact that it's repeated throughout the interviews by some participants. People expect a shorter time so that they can make an informed and conscious purchase decision more easily. This makes it difficult to make that decision – being in the store and not being sure if the product has SVHC's or not and not having the opportunity to get the information from the app because there's no data available (either the contact or on the product itself), and they may end up choosing to buy it, since they cannot access the information in a practical and convenient way. Therefore, having an immediate response is considered fundamental by some of the interviewees. In fact, 33 mention that there should always be a response or that it should be clearer. Not getting a response leaves them often confused or skeptical.

"(…) whether the product contains hazardous substances, is an excellent right, but needs to somehow redefine the deadline because no one is interested in waiting 45 days to get an answer" (46-60 years, Serbia);

"(…) Waiting 45 days for an answer is impractical from the consumer's point of view." (31-45 years, Poland);

"45 days are not very practical if one quickly wants to buy something. There should be a mandatory label of the chemicals on the product. (…)" (31-45 years, Germany).

"The producer or retailer should be obliged to answer me when there is any amount of SVHC in the product, not only more than 0,1% weight." (32 years, Czech Republic)

"I think it is bad that the requested company can also not answer. Then one doesn't know if the request is ignored or if the article doesn't contain anything." (31-45 years, Germany).

It was also repeated a few times that this type of information should be available, either in the package itself, in a QR code or some other platform. All suggestion point to the same objective: having an immediate access to the information to be empowered to make an informed choice when buying an article. Also, the need to be more broad in terms of the substances it applies to was mentioned by the interviewees.

The fact that right to know only applies to articles as defined in REACH is also considered problematic, since it leaves out categories of products that are relevant for citizens, like food products or cosmetics (some of the most scanned categories of products).

"In my opinion this is the biggest problem of the app - I mean, the limited scope of the products for which one can get information." (31-45 years, Croatia).

"With the app, I have scanned a few things that were possible. E.g. I also don't know what's actually in cosmetics. I would find that handy there as well. This is something that I put directly on my skin, for example. But also, there I never really questioned it, what is exactly in it." (20-30 years, Austria)

"Yes, it's great right to have." It could be expanded to include not only SVHCs, but also substances of "medium high concern" in so far as those substances might over time and with enough accumulation become of very high concern." (31 years, Luxembourg).

There were a few that think that the percentage of 0.1% is not strict enough, some mentioning the accumulation of substances in products, more frequently known as the cocktail effect.

"I think it is good but not sufficient because you know there is this problem of accumulation because maybe it is not a lot 0.1%w/w, but, if you use several items, all these will accumulate and at the end of the day you might have more. So maybe it should be stricter"" (42 years, Luxembourg).

3.4. Articles containing SVHC

One of the underlying arguments to justify the relevance of the app Scan4Chem is the documented interest by consumers to have more information on the presence of substances of very high concern in articles, so that they can make more informed choices and avoid contact with such substances. Therefore, it is relevant to ask app users what they will do if confronted with the information that a certain article contains substances of very high concern.

Among the respondents of the survey the most frequent answer has always been to clearly say that they would never buy an article that contains SVHC (49% / 50% in the last survey) (as projected, see indicator 18). For 23% it will depend on the product and for 18% of respondents looking for an alternative would be the first option, but if they could not find it, they would buy the article despite the presence of such substances. It is also worth noting that only 1% claim that, despite having the information about the presence of SVHC in an article, they would buy it as usual, what shows that knowing about the presence of such substances in articles triggers the need of consumer to reflect on their purchasing behavior, even if the final decision can vary (figure 13).

Figure 13 - If you find out a product you are about to buy contains these problematic chemicals what do you do (N − 1029)? (%) − III online survey
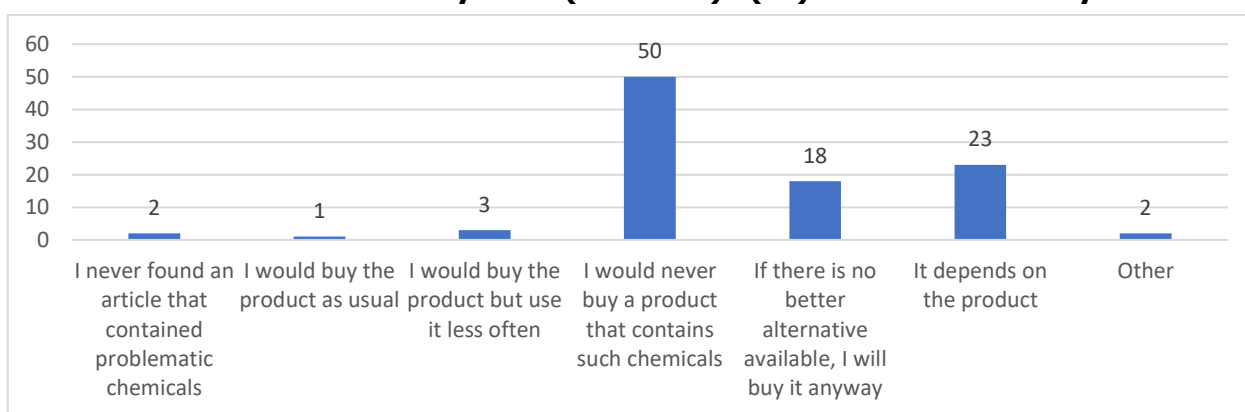
Among those stating that they would never buy a product that contains SVHC, it is far more frequent to find women then man. On the opposite side, it is more frequent for men to buy the product if no alternative is available then women.

Opting for not buying a product that contains SVHC it is also more common among people between 31 to 60 years old, so those that are in the more "active" part of their lives. Younger and older people tend to choose this option less often.

Among participants there is a clear recognition of the influence of the project and the app on how they plan and act while shopping. Users acknowledge an increased awareness about chemicals in products - but are also conscious of the limitations of the app, most of them related with the limitations imposed by article 33.

So when asked if this app and/or project influenced them in how they perceive and consume products, 58% of the interviewees answered yes/ to some extent or that at least it made them more aware or more careful when choosing the products they buy. Despite the good overall opinion, the limitation imposed by Article 33 made some of the app users say that they haven't stop buying products and the app didn't have an influence on their purchase decisions because they didn't get any information that some product had SVHC, they scanned products that they already have at home or because the answer took too long to come. Nevertheless, it is clear from the interviews (and the surveys) that if they have that information available, it will have an influence.

"Yes, it has had an influence on my knowledge of categories of substances and made me more aware when looking for and purchasing products." (31-45 years, Luxembourg)

"Yes, yes, yes. I think this is a plus of knowledge towards being able to decide, of course." (+60 years, Spain)

"It influenced me in the case of kitchen utensils, now I would probably focus on more trusted and higher quality products." (20-30 years, Czech Republic)

"They influenced a lot. I was not aware that the problem of chemicals was so present. Almost everything we come into contact within our daily lives, be it packaging, batteries, treatment given to materials that may be natural, but are then chemically treated... it is an extremely widespread problem and has definitely influenced the way I consume." (46-60 years, Portugal)

"Yes, in the way that I question what I buy... Can I look the product up in an app or online. I often tell my friends that they have to check their products with the apps." (31-45 years, Denmark)

"The 45 days is actually a problem, normally I don't wait that long until I buy something. Because if the answers are already in the database, it is really helpful, because then I can get information within a short time, that there is no problem with a product." (46-60 years, Austria)

"No. I didn't scan anything before I bought it, I was only curious what's inside after I bought it. And then it took like 3 weeks to get a reply, even if I wanted to return those products, I wouldn't be able to do it." (28 years, Croatia)

When asked in the qualitative interview about the specific products they use the app for, most often referred categories of products were: toys/children's products, clothes, shoes, kitchen supplies/ products, electronics, furniture/ home appliances, textiles, sports supplies/ products. To many it was not possible to specify a category they use it for (figure 11).

A lot of people didn't know exactly what products are or aren't included in the legislation before this interview and scanned items that are not integrated in this right, like body care/ cosmetics; food products; cleaning products/ detergents; hygiene products.

In some of the questions throughout the interview it is noticeable a great concern regarding the products children have contact with, and in this question it becomes evident. A lot of the participants have young kids or relatives and worry about the materials these products are made of and if it represents danger to them.

"No, I don't have specific product categories to use the app for. I use it to check and scan different things. I want to know what is in the products I buy." (31-45 years, Poland)

"I was mostly interested in children's toys and products for kid of any kind. I'm worried because bottles for kids and everything for kids is actually made of plastics. I downloaded the app and went around the flat scanning anything that I had and I wanted to check if anything is going to be in the database. Nothing I scanned was in the database. (...)" (31-45 years, Croatia)

"I used it for some categories, I didn't remember to use it for toys and electronics. I used it for detergents, hygiene products,... I had no idea it could be used for those categories, I didn't try it for clothes, for example." (31-45 years, Portugal)

"Most often, I scanned food products, but sometimes I scanned chemical articles, too." (20-30 years, Poland)

Figure 14 – Categories of products used in the app (number of times mentioned) – Qualitative interview
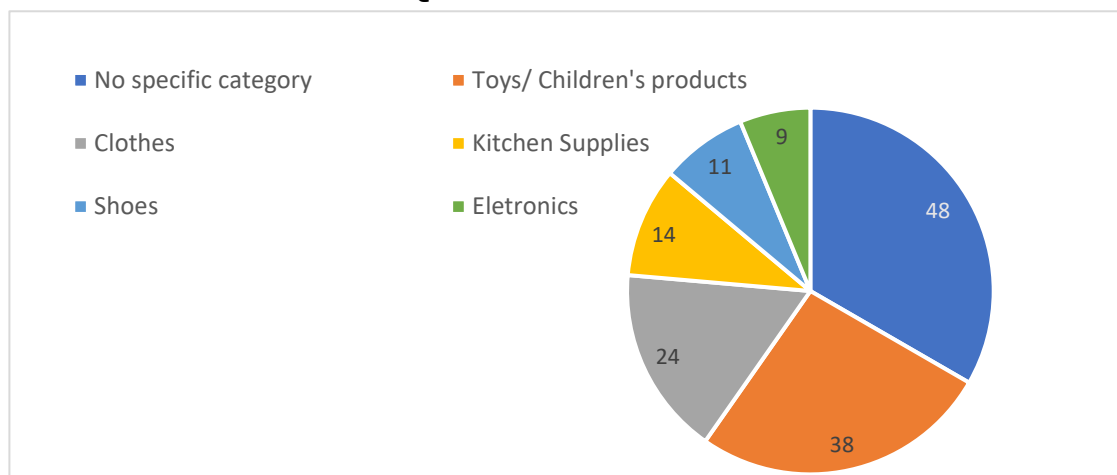
3.5. Use and Perception of the App

Besides monitoring the evolution of key indicators of the LIFE AskREACH project, the surveys and the interviews also focused on understanding the experience users were having with the app, ranging from how many requests sent, information available to the overall opinion of the app.

Considering all the 3 app surveys, most respondents state that they started to use the app quite recently, with 65% having downloaded it less than a week ago from the moment they answered the survey. The second most common answer is on the other extreme, with 19% of the users answering that the download happened more than 3 months ago. In between these two scenarios, 7% mention that they have the app around three months and 8% say that they have downloaded it less than a month ago.

Figure 15 – When have you downloaded the app? (average of the 3 surveys)? (%)
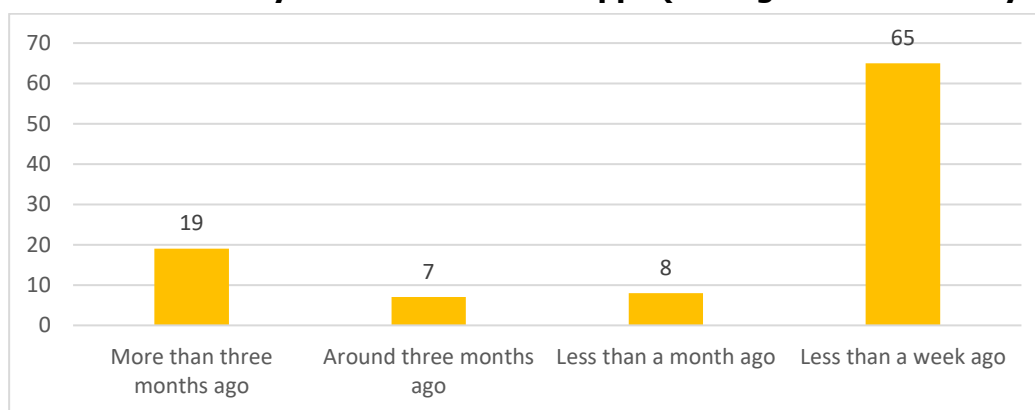
The high number of very recent users might result from the intensifying of the communication campaigns around the surveying initiatives, but also on the fact that as we advance in the surveys, many users already answered the survey previously and so choose not to answer it again.

Of course, this context has an impact on some of the questions, namely the regularity of use, since if most surveyed users have downloaded the app very recently, they do not have a regular pattern of use. So only 30% say that they use the app regularly and 16% refer to use it monthly. On the less frequent use we find 32% claiming to use it seldom, and 22% saying they never use it, despite having it on their smartphones.

When we try to understand these answers by crossing the moment the app was downloaded with the regularity of use, we can see that the longer the app is on the cellular phone, the less likely it is that it will be used. Although not being good news, this is far from being a specific characteristic of this app. In fact, this is a general tendency to reduce the use of apps for different reasons.

Some reasons for the less regular use of Scan4Chem can be related with aspects such as the lack of immediately available information on the database (with many referring that the ideal scenario would be to have immediate results after scanning a product), the long waiting period for an answer, or even on each product scanned. In fact, during the interviews interviewees mentioned that the database is not very complete, since it doesn't have a lot of contacts and products, and that it should be clearer which products are or aren't included in the legislation. It was also mentioned that it would be interesting to expand the type of products included, to address also food and cosmetics, for example.

Another point mentioned by some, although not directly related to the App *per si*, is the response time, once again. If it's too long, it discourages the use of the app, but getting no answer at all, on the other hand, has the same effect, some say.

"The app seems unfinished; the database is empty. The thing is that after being at work for 8 hours and taking the kid to the kindergarten and picking the kid up from the kindergarten, there isn't much time left for your, let's say, personal interests. In a situation like this when I must choose whether I'm going to buy this product

or that product, and why I'm going to pick the product I'm going to pick, I must be able to make this decision immediately." (31 years, Croatia)

"If there was a large database, and if there were a lot of goods and products added, the response would be prompt and the consumer could decide whether to buy the product relatively quickly, the app would be usable, (…). I would like someone to respond about hazardous substances if information is requested. Rights and responsibilities are now more on 'paper', and it doesn't work in reality". (50 years, Latvia)

The lack of available information in the different articles people can choose from has been identified as a gap since the beginning. The lack of interest from companies to provide that information in the database immediately to their customers has indeed been a serious handicap for the project and the wider use of the app.

"To be honest, it's hard for me to determine my regularity of use. I uninstalled the app after I didn't get replies to the requests about the scanned products." (31-45 years, Poland)

"Well, maybe I sent about 20 requests. As for regularity, honestly, I use it less and less because I don't get answers, so it demotivates me…" (46-60 years, Serbia)

When we analyze the data from the surveys it is clear that only in a minority of situations people can still find the information on products directly on the database more than half the times they scan a product. On a positive note, we can say that the results have improved throughout time since in the first survey only 43% of the users said they have found information directly on the database half or more than half the time) whereas on the last survey that number rose to 52%.

The alternative strategy was to make available the contact of producers, distributors or retailers. In this case, the evaluation by the app users is slightly better. Considering the average of the three surveys, 15% say they can find the contacts more than half the time, 37% mention they can find it around half the times, but the most frequent answer remains in the category "less than half the times" category (49%). Although the numbers are not very impressive, it should be mentioned that in many cases users scan products that are not articles (food, detergents, cosmetics) so they were not the target of partners in terms of making contacts available. Also more and more brands are not providing emails on webpages and rely more on forms, what makes it more difficult to find emails to include in the database.

"I spent more time looking for contact details than using the app, so the level of usefulness is not great." (31-45 years, Poland)

"Sometimes not so easy to find the contacts. If the contact is not on the product, then you have to go to the website and I am afraid the request won't go to the right contact in the company especially if it is a big brand" (35 years, Luxembourg)

Besides the work done by the different project partners in gathering contacts, the project team has also developed contacts with the European Chemicals Agency in the attempt to connect the Scha4Chem with the SCIP database. Unfortunately, such connection was not possible during the project duration. Hopefully such match will be possible soon.

During the interviews we tried to understand better what users do when the contact information isn't available on the app. The most frequent answer is that they usually search for the contact, either on the internet or some on the package itself. Nevertheless, because it can be time consuming, in many situations the search is dropped.

"If I have time, I look for contact details on the internet, but if I have to spend 5 minutes standing there next to the product on the shelf just to find a producer's or supplier's email address, well, I just don't have time for that, plain and simple." (31-45 years, Poland)

"When I had time and I really cared about checking the product, I tried to find the contact information myself and fill them in, but more often than not I dropped it." (20-30 years, Poland)

Despite all the hurdles, the feedback from the interviews is that the process of sending requests is easy. The difficulty increases if the contact information is not available on the database, but still the overall opinion is positive, even of not many included a photo to accompany the request. The inclusion of a personal message in the request was rarely mentioned during the interviews.

"Well, it is easy but when I am on the store I do not have time to look for email address etc. If I have the time and feel motivated and remember it, I will do it at home, after I have bought the article. Which is not good. I didn't ever send additional info." (31-45 years, Greece)

"(…) It is a pity that the databases are not filled, but with the requests this will hopefully change." "No, I didn't have to fill in data, the app generated that by itself with the barcode." (20-30 years, Austria)

3.6. Using the app and getting feedback

Given that a significant part of respondents had only recently downloaded the app, it is not strange that on average 45% say they have not sent requests so far. Among those who have already used Scan4Chem to send requests of information, 83% sent less than 10 requests and the remaining 17% split between 10 to 20 requests and more than 20 requests sent.

Among those who have already sent requests of information the most common situation is that they never received an answer from producers or retailers (average of 50%), but when we analyze the evolution from the first to the third survey, there was a slight improvement with 32% of respondents claiming to get answers to requests of information always or at least half the times, when in the first survey this was the answer of only 28%.

Figure 16 – Answers received to requests of information sent via Scan4Chem (comparison between the three surveys)
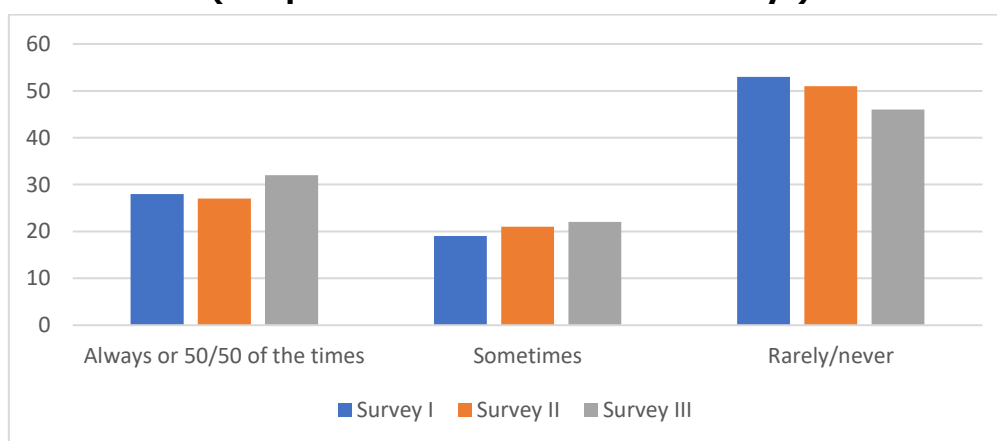
This is a concerning situation that leaves users in a permanent doubt about the presence, or not, of SVHC in the articles they inquire about and it is, somewhat puzzling, that so many brands restrain themselves from communicating with their potential customers upon request by them. The fact that REACH makes it mandatory for article producers, distributors and retailers to answer to consumer only if any SVHC is present, introduces great undefinition that only creates confusion and a context that can very easily give space to non-compliance that cannot be easily checked and verified.

When participants don't get an answer, according to the feedback from interviews, at least half of them choose to drop it and never resend it. Only a minority resend the request. Most people expect quick information and, when that doesn't happen, they end up giving up on the answer or eventually just forgetting due to the waiting period.

"I mostly didn't take any further action. The period of waiting for an answer being so long, I often forgot I'd sent the information request." (31-45 years, Poland).

"Based on previous experiences: I never got an answer. Lives are very busy, so I didn't resend, nor did I ask further." (31-45 years, Portugal)

Not all participants answered the question about the clarity of the responses they got because not all sent requests and not all got answers even if request for information were sent. Therefore, of those that sent requests and got answers around 80% said it was clear on most occasions. Only a minority considered that it was not clear or doubted the information provided by the companies.

"I received two answers. One very clear, (…) and another not so good one (…) the response came, first, in German, I think, a language that I couldn't understand at all. Then there was an answer in the continuation of that conversation in English, I deduce that it was an internal sequence, that they went from the answer in the German department to the English version, and that answer referred me to the (…) the website itself. And there I confess that I did not continue, because it was not a good user experience with this answer. (20-30 years, Portugal)

"Some of them were clear and some companies didn't know what to answer about their products." (31-45 years, Greece)

"It was understandable, but they were just trying to wash their hands, to make it seem like everything is okay and normal. It was like, "Yeah, it's toxic, but it's legal, it's according to the EU law, and it's not toxic for you, don't worry, you're not going to die, we care about you a lot, please rate your customer experience." (28 years, Croatia)

3.7. The General Opinion About the App Scan4Chem

When asked about their general opinion about the app on the online survey, most respondents demonstrate to have a very good opinion of the app, particularly because of its ability to increase the knowledge of consumers on the risks of chemical substances for health and the environment and the fact that people feel part of a community that works towards the end of the use of SVHC by companies. It is also a very positive result that more than 95% (on average) would recommend the app to friends. The empowerment of consumers to influence chemicals used in articles or the possibility to make more informed choices was highlighted by a slightly smaller number of respondents, but nevertheless representing the vast majority.

**Table 3 – General opinion about the app Scan4Chem – Online survey**

	Survey I	Survey II	Survey III	Trend
It is easy to use	89	88	90	😊
It empowers consumers to influence chemicals used in consumer articles	87	86	88	😊
It is useful for making decisions on what to buy	87	91	94	😊
It feels good to be part of the app community, because together we can incentivize companies to stop using problematic chemicals in their products	97	95	94	☹
It increases the knowledge consumers have on the risks of chemical substances for health and the environment	97	96	97	😊
I would recommend it to friends	97	95	94	☹

This overwhelming positive opinion about the app, despite some well identified difficulties in some specific areas, can be justified by the relevance citizens attribute to this area of chemicals in products, that leads them to consider wider benefits despite shortcomings.

The same questions were addressed during the interviews, to get some feedback on the different areas.

When the interviewees were asked if they intend to continue to use the app 71% said yes whereas 16% said they will not. The remaining 11% weren't sure or preferred not to answer (figure 17).

Figure 17 – Continue to use the app (%) (N – 158) – Qualitative interview
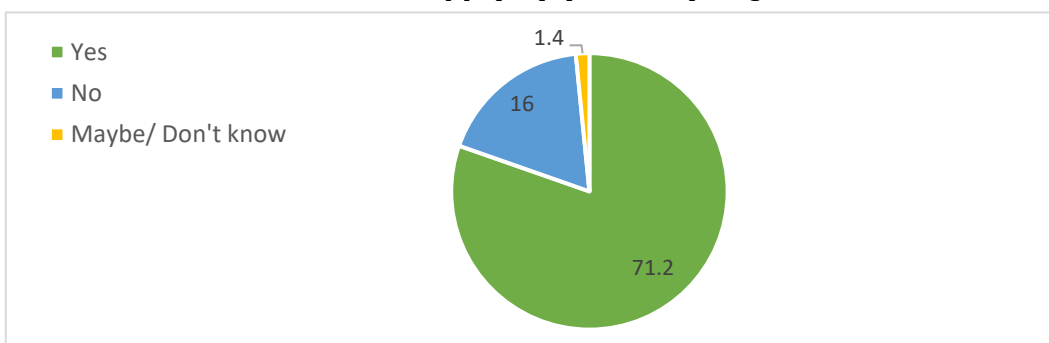
Most seem satisfied (enough) or at least demonstrate that they like the idea of the app and its purpose, but there are some that expect some changes to happen so that it makes sense for them to use it.

Some of the reasons why some say they want to use the app is to obtain knowledge/ information, because they are curious, to pressure companies and because they consider it useful.

For those who said they won't use it anymore it's either because it takes too much time to scan and/or get a response, because the database does have a lot of information, they would like the certainty of getting an answer or because they consider it ineffective.

"To be fully honest maybe not, I would need more motivation and insurance about the fact that I will receive some information" (20-30 years, Luxembourg)

"I'm not sure. If there would be some novelties introduced in the app, if you would be able to use it on more product categories, then yes, I would use it again." (20-30 years, Croatia)

It was also asked whether they used this app when purchasing online. Most participants (82%) never got to make a request about a product that they bought or were thinking to buy online. For some, such feature was not known and for others buying online is not an usual practice. Only 12% have used the online version of scan4chem.

4. Messages for politicians and brands

At the end of each interview, when asked to make an overall evaluation of the all process and whether there is some message that they would like to convey to decision makers and companies, the most common answer was a call for more transparency and honesty from companies and to make this type of information available in some way (either on the product packaging itself, on a website, using an easily accessible data base, among other examples). Around 62 interviewees referred to transparency issues, looking at more information to empower consumers on their choices and as a way to truly implement right to know.

For this to happen, the importance of providing simple to use and easily understandable information was considered key, since many interviewees do not see them (and their fellow citizens) as experts in interpreting complex information about chemical substances. Transparency was also associated with the need to have a stronger and more effective enforcement of the obligations that companies must provide information on what the products they place on the market and sell contain. This pressure was seen by some as key for having safer articles on the market. Overall transparency was seen to build trust and allow more empowered European citizens without overburden them.

"I think there are two things: transparency - we need more transparency - and we need to apply the precautionary principle more, that is, these chemicals of high concern should not be in products. Because if there are doubts about them, as a matter of precaution, I think there should be no presumption of innocence in the case of chemicals. (46-60 years, Portugal)

"The information that is provided to us is by the brands themselves and, therefore, the State itself should have mechanisms to verify that. We shouldn't be the ones to have this concern. The State itself should have the concern that products with this kind of substance do not get into the market. So, to politicians it's: the State must invest in this inspection of products. What I would say to the state is: if it doesn't exist, create a body that does this inspection. And make it work - there must be efforts to have results. (46-60 years, Portugal)

"Well, I think it's a shame that an app is needed, or that consumers in general are needed to bring something like this to light. I think it would be good if everyone knew about it and that it was obviously marked if anything was included that would be harmful. And not that I must worry about getting information on something like that" (20-30 years, Austria)

The second most referred option was to ban chemical substances that have hazardous properties, with a clear questioning of limits (associating with the idea that in daily live we are all subject to a chemical cocktail and not just one specific substance) as the appropriate way to protect European citizens and the environment. The expression of some astonishment with the fact that SVHC's are still allowed in consumer articles in the EU was also common.

"I think SVHCs should be banned. If not, they should put information on this on the declaration. They should list what's inside and they should explain the risks in big letters, like in cigarettes. And they should give more money to inspections. If you know inspection is never going to come because there's like two chemists in the inspection in the entire country, nothing makes you obey the law. And they should introduce heavy fines. And education of companies should be mandatory." (20-30 years, Croatia)

"Two messages, the first being: dangerous chemicals, harmful chemicals must be banned. Absolutely work with bans. The other being: transparency, where chemicals are used and have certain effects. Then it must at least be documented transparently on the products as a label, so that the consumer has the chance to include it in the purchase decision." (46-60 years, Austria)

"Substances considered hazardous should be eliminated from products (even in small concentrations). For example, bisphenol is banned from being used in bottles for children but not in other articles. Legal regulations at many levels need to be made uniform. Now, we're having a lot of problems as a society when it comes to hormonal and cancer diseases, and there must be something that is causing this. I think one of the major causes are ubiquitous chemicals all around us." (31-45 years, Poland)

"Do not sell any products, which contain carcinogenic substances! They should not be available on the market and also not being produced. (+60 years, Germany)

"It is crazy what is allowed to be used in products. During my pregnancy, I became aware of a belly lotion with EDCs in it. It goes beyond my understanding how this is allowed in our surveillance DK (40 years, Denmark)

"It shouldn't only be the responsibility of a consumer to choose the least toxic products, but it should be first and foremost the responsibility of the EU governments and decision makers to not allow such products to the market in the first place. (…) If there are known consequences of using a certain substance, these substances should not be allowed on the market. It's as if a father keeps their cigarettes on the kitchen table and when the child takes them and starts smoking, the father just says, that it might be bad for you but, never removes the cigarettes from the table and doesn't stop the child from smoking them. The father should know better. (31-45 years, Estonia)

Another proposal frequently referred by interviewees is related with the need to improve the legislation. Although this approach is closely linked with the two previously mentioned, for some interviewees it was very clear that this is the central element to guarantee that hazardous substances to not enter into the market and to guarantee increased transparency.

"(…) At the same time, I'd like to tell decision makers to improve the legal regulations so that consumers wouldn't have to send requests, but the information would just be given directly on the product." (20-30 years, Poland)

"I'd like to tell them that the law should be stricter, i.e. producers should be obliged to replace hazardous chemicals with alternatives that are healthier or neutral to our health and to the natural environment. They should present the chemical composition of products in a clear way." (31-45 years, Poland; university degree; female)

"Consumers should be protected. That is the key message. Not all are obliged know what BPA or flame retardants are. But they are entitled to buy safe products. Governments, regulators should make sure of this, and the companies should follow. (31-45 years, Greece)

"Yes. That they should be more transparent and make a joint effort to help improve product information for citizens, so that citizens could have a chance to know what they are consuming and decide about it. But they should do it now. And, that the politicians and the governments will monitor the companies much more strictly than they do now. So, don't allow products to reach the consumer in such unhealthy and unsuitable conditions as the ones we are living right now." (+ 60 years, Spain)

5. Conclusions

Studies done by Eurobarometer clearly show that Europeans are concerned about the presence of chemical substances in their daily life and feel particularly uninformed about their presence and impacts. The methodologies used in LIFE AskREACH have shown that the same level of concern an information can be found among the users of the App Scan4Chem.

Regarding the presence of chemicals in articles, European citizens can only rely on information, since SVHC can still be found in day-to-day consumer articles and there is no easy way to identify its presence. So, article 33 of REACH was a god idea, but, unfortunately, some of its conditions make it a very hard right to use.

Despite the difficulties in acting on article 33 due to its conditions (until 45 days to get a response; obligation to give an answer only if there are SVHC in the article) the app users recognize that the project has contributed to improve knowledge, information and awareness about the theme. LIFE AskREACH and the app has therefore contributed to Europeans feeling more informed, knowledgeable and aware of their rights, besides giving them tools to be more conscious when buying.

Nevertheless, it was clear that to be able to activate a higher number of Europeans it would be important to have interventions with a lower burden on consumers, then the one posed by article 33 and Scan4Chem. Providing immediate feedback and having information available when requested by consumers is fundamental to guarantee higher participation and activation of right to know in the EU.

Throughout the project it also became clear that the key is to prevent the use of hazardous substances in products, because Europeans will never be experts on everything we want them to be and the responsibility of those who place articles on the market and those who regulate them is to live up to the trust of consumers in the EU to provide them with non-toxic articles in the first place.

Changing practices is a long run and complex process, it is not achievable by a project alone. The European Green Deal and the different initiatives foreseen within it to empower consumers (sustainable products initiative; empowering consumers initiative) and to strengthen the effective implementation of REACH and the EU chemicals policy (EU Chemicals Strategy for Sustainability; Restrictions Roadmap; REACH revision) are instrumental to create the structural net that, together with awareness raising and information (resulting from projects like LIFE AskREACH), can allow for the construction of new practices by Europeans and companies, when it comes to removing SVHC form their articles.

Annexes

Scan4Chem quick survey

Thank you for participating in the Scan4Chem quick survey. Your opinion has great value to us.

We also take the protection of your data very seriously. We invite you to learn more about our privacy policy. By filling out this form you agree that we will process your data in line with it.

Part 1 - Perception, knowledge, action

1. In general, do you feel concerned about the presence of problematic chemicals (carcinogenic, toxic for reproduction, harmful to the environment etc.), usually described as Substances of Very High Concern – SVHC) in consumer products (like toys, shoes, clothes, electronics, furniture, etc.)?

- *Very concerned*
- *Concerned*
- *Not that concerned*
- *Not concerned at all*

2. How informed do you feel about the presence of these problematic chemicals (SVHCs) in products?

- *Very well informed*
- *Rather well informed*
- *Not very well informed*
- *Not informed at all*

3. Before using the app Scan4Chem, did you know that every European citizen has the right to ask to the producer or retailer, if a product contains any of these problematic chemicals (SVHC)?

- *Yes*
- *No*

3.1 If yes, where did you learn that? (Please choose one option)

- *In School*
- *Media (television, newspapers, etc.)*
- *Social media*
- *Friends/family*
- *NGO/Consumer Organizations*
- *Retailers/Companies*
- *Professional/Work environment*
- *Other*

4. If you find out a product you are about to buy contains these problematic chemicals what do you do? (Please choose one option)

- *I would buy the product as usual*
- *I would buy the product but use it less often*
- *If there is no better alternative available, I will buy it anyway*
- *I would never buy a product that contains such chemicals*
- *It depends on the product*
- *I never found an article that contained problematic chemicals*
- *Other: _____*

Part 2 - Use/perception of the app

5. When have you downloaded the app?

- *Less than a week ago*
- *Less than a month ago*
- *Around three months ago*
- *More than three months ago*

6. How regularly have you been using the app?

- *Weekly*
- *Monthly*
- *Seldom*
- *Never*

7. How did you find out about the app? (Please choose one option)

- *Newsletters, websites*
- *Social media*
- *Flyers/posters/stickers etc.*
- *Television*
- *Newspapers/magazines*
- *Radio*
- *Conference/ meeting/ event/ fair*
- *Apple/google app store*
- *Recommended by friends/relatives/colleagues*
- *Other*

8. When you use the app, how often do you find information (presence of substances of very high concern) about the articles you are searching?

- *Less than half the times*
- *50/ 50*
- *More than half the times*

9. When you use the app, how often do you find the contacts for sending requests about the articles you are searching?

- *Less than half the times*

- *50/ 50*
- *More than half the times*

10. How many requests of information have you sent?
- *Less than 3*
- *Between 3 and 10*
- *Between 10 and 20*
- *More than 20*
- *None*

11. Of the information requests sent, how often have you received an answer from producers or retailers on the presence/no presence of SVHC?
- *Everytime*
- *50/50*
- *Sometimes*
- *Rarely*
- *Never*

12. Regarding the use of the app, please share your opinion about the following features: (I agree / I disagree)
- *It is easy to use*
- *It empowers consumers to influence chemicals used in consumer articles*
- *It is useful for making decisions on what to buy*
- *It feels good to be part of the app community, because together we can incentivize companies to stop using problematic chemicals in their products*
- *It increases the knowledge consumers have on the risks of chemical substances for health and the environment*
- *I would recommend it to friends*
- *Other: _____:*

Part III - Social Background
13. Please tell us how old you are
- *Less than 20*
- *Between 20 and 30*
- *Between 31 and 45*
- *Between 46 and 60*
- *More than 60*

14. How many school years have you completed?
- *Basic education (no high school diploma)*
- *High school degree*
- *Technical education*
- *University education (Bachelor, Master, PhD)*

15. Country of residence

Austria | Belgium | Bosnia&Herzegovina | Croatia |Czech Republic | Denmark | France | Germany | Greece | Latvia | Luxembourg | Montenegro | Serbia | Poland | Portugal | Sweden

16. Gender

- *Female*
- *Male*
- *Other / Rather not say*

Part IV – Future contacts

In a few months the team responsible for Scan4Chem will be doing some in depth interviews with users of the App, to get to know their opinion and to collect suggestions for improvement of this tool. If you are available to be contacted at that time, please leave your email below (if you are not available, you do not need to answer)

_____

Thank you so much for your cooperation!

CONSUMER INTERVIEWS

1. When you do your shopping, what are the most relevant criteria for choosing a certain article or product instead of another one in the same category (particularly non-food products, like shoes; utensils; textiles; electronics, etc.)?

Known brands/familiarity with the brand/price/ type of packaging/materials used in the product/ recyclability/ durability/ non-toxicity/environmental or social certification (which labels they know and value as being relevant for their choice) /etc.*

2. **When you buy a T-shirt, a pair of shoes, a toy, furniture, etc., do you usually think about the possible presence of chemicals substances that might have an impact on your health or the environment (on other species; quality of the water, etc.)?**

    2.1.   If yes, what are your concerns and how do you try to deal with them?
    (looking for more information in the stores/brands; doing research online / check the label, etc).*

    2.2.   If yes, when has this concern started? Is it something you have been doing for long? Is it recent? When has your awareness about the issue started? And why?

    2.3.   Are you familiar with any label/certification that somehow relates with the presence of chemical substances in articles/products?

3. **Before the use of the Scan4Chem app or heard of the project did you already know you had the right to request information about the presence of certain substances of**

very high concern (carcinogenic, mutagenic, toxic for reproduction, persistent and bioacumulative) to brands and retailers?

    3.1.   If yes, had you ever use it before the app?

    3.2.   But even if you didn't know about this specific right to send a request of information, did you believe you had the right, as a consumer, to know what was in the product? How do you imagine that right could materialize/be effective/be aplied?

4. Right to know covers all articles, components and packaging (but excludes mixtures, like detergents, cosmetics, food, etc.). Brands and retailers have 45 days to answer your request of information and are only obliged to answer if the article indeed has an SVHC above 0,1% weight/weight. What do you think about this right? *Is it good to have? Do you think it should be expanded to include more chemicals or products? Do you think it could be improved somehow?**

5. What is your main reason to use the app? Do you use it for some specific product categories (more than others)?

6. So far, how would you describe your interaction with scan4chem regarding (please share your thoughts):

- **The easiness of use - was it easy to navigate/use the first times?**
- **Easiness of sending requests of information: how many have you sent? Did you include some information – photo, contacts of the supplier, own message?**
- **Regularity of use (number of scans/ number of requests sent)**
- **Information retrieved (about contacts to send requests and/or about the articles themselves)**
- **What do you usually do when the app does not provide you with the contact information of the supplier or information about the article?**
- **Usefulness for informing your consumer decisions - have you stopped buying certain products because you had no information or because you got the information that they contain SVHC?**
- **Clarity of the information - If you have received answers from supplier, do you think the information was clear and understandable?**
- **Communication to supplier: what do you usually do when a request is not answered by the supplier? Drop it, resend it, contact supplier directly?**
- **After receiving an answer by the supplier (producer/retailer/importer) are you available to continue communicating directly with the supplier via your personal email, or do you prefer to keep everything inside the app system?**
- **Overall opinion of the app**

7. Do you think the App or the project influenced…

- **Your knowledge about SVHCs and their risks**
- **How you perceive / purchase / consume products?** (*now more often goes to shops with green reputation, buys less, prefers certified articles, etc.)**

8. Do you plan to continue to use the app and send further requests to companies in the future? If yes, why? If not, why not?

9. Have you sent any requests when you bought something online? Do you plan to send requests when you buy something online?

10. If you had the opportunity to convey a message to decision makers (at the EU and national levels) and to brands, about the issue of chemicals in products, is there something you would like to share with them?

11. Please tell us how old you are

- *Less than 20*
- *Between 20 and 30*
- *Between 31 and 45*
- *Between 46 and 60*
- *More than 60*

12. How many school years have you completed?

- *Basic education (no high school diploma)*
- *High school degree*
- *Technical education*
- *University education (Bachelor, Master, PhD)*

13. Gender

- *Female*
- *Male*
- *Other / Rather not say*

Thank you so much for your participation in this interview 😊

* Parts in italic are meant for guidance, not to share with the interviewee.