

# Consumer Attitudes Towards Product Safety:

Physical Consumer Goods vs. Internet Connected Products

March 5, 2024



Image generated using Midjourney with the prompt "newspaper style cartoon in black and white with a person thinking with a thought bubble."

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# 1 Executive Summary

For this study, Internet Safety Labs (ISL) was interested in understanding consumer attitudes around connected technology product safety. The research was designed to explore these research questions:

- How do consumers view product safety for Internet-Connected products?
- Are there significant differences in how they view product safety for traditional Consumer Products versus Internet-Connected products?
- Who is responsible for consumer safety while using Internet-Connected products?

Through early testing of the survey, ISL discovered that when asked initially about digital product safety, consumers interpreted the question to be concerned with "cybersecurity". Thus, the researchers designed the survey to first query consumers about their attitudes on product safety for Consumer Products, such as groceries, electronics, and automobiles. In this way, respondents were appropriately "primed" to be thinking about traditional concepts of product safety, while applying those sensibilities to Internet-Connected products—software and physical products that have an online, or internet component. These products included websites, mobile apps, smart TVs, e-readers and internet-connected home appliances.

882 participants completed the survey.

## 1.1 Key Findings

### 1.1.1 Importance of Product Safety

- People are extremely concerned about product safety—for all types of products. (Figure 5.1.5)
  - People are somewhat less concerned about product safety when it comes to Internet-Connected Products. (Figure 5.1.5)

### 1.1.2 Perception of Product Safety

- People see Clothing, Furniture and Groceries as the *safest* Consumer Goods, and Cleaning Products, Automobiles, and Personal Care products as the *least safe* Consumer goods. (Figure 5.2.2)
- People see e-Books, Smart TVs, and Health Devices as the *safest* Internet-Connected Products, and Websites, Smart Automobiles, and Smart Homes (with Mobile Apps close behind) as the *least safe* Internet-Connected Products. (Figure 5.2.4)

- Based on the mean rankings, respondents were somewhat more concerned about safety of Internet-Connected Products compared to Consumer Products (section 5.3.3).
- Respondents were more likely to cite concern for child or family member safety for Consumer Products (9.7%) versus Internet-Connected Products (4.3%). (Figure 5.1.6)
- **Consumers don't recognize the potential for physical, emotional, reputational, and other kinds of personal and societal harms (Figure 5.3.7). This is a massive disconnect and warrants a significant educational effort to bring harms/risks home to people.**
  - "You can't get killed by the internet."
  - "[N]ot sure exactly what is meant by safety but physically there is **almost no risk.**"

### 1.1.3 Responsibility for Product Safety

- People were somewhat more likely to hold the Product Maker responsible for product safety of Consumer Products than for Internet-Connected Products. This is the double standard ISL hypothesized at the start of this research. Even though the difference is small (about 3%), **ISL believes that consumers hold a mistaken— and unattainable—sense of responsibility for safety while using Internet-Connected Products. Consumers can't possibly assess the risks in Internet-Connected Products when product makers don't expose them, and in some cases don't even understand them themselves.**
- For respondents who provided different answers for the responsibility question [for Consumer vs. Internet-Connected Products], most "flipped" towards assigning more responsibility to "Me, the Consumer" than "the Product Maker" for Internet-Connected Products, reinforcing the theme that consumers believe they should somehow be responsible for product safety for a huge class of opaque and complex products (Figure 5.5.5).

### 1.1.4 Need for Product Safety Testing of Internet-Connected Products

- A large majority (85.7%) of people surveyed believed that companies should perform product safety testing on Internet-Connected Products (Figure 5.6.5). 6.1% believed they should NOT.

### 1.1.5 Demographic Analysis

- The youngest age segment in the research (18-29 year olds) seems most inured to safety risks in Internet-Connected Products. Is this a trend based on

the comfort of growing up with technology? Do even younger children share this belief?

- Younger respondents were also less likely to take personal responsibility for safety for Internet-Connected Products (section 6.2.2.2).
- Minority and lower-income respondents expressed lower concern for Internet-Connected product safety than white, higher-income respondents. ISL hypothesizes that minority and lower-income groups may have less access to educational resources about technology risk, but this needs further research.



## 2 Introduction

In 2023, Internet Safety Labs (ISL) received a grant from the Internet Society Foundation to, among other things, conduct a quantitative study of consumers' attitudes and awareness of product safety of internet-connected, software products.

The study explored participants' thoughts and opinions regarding the types of products they considered safe or unsafe to use and why. The researchers looked at consumer attitudes about the safety of consumer goods like cars, clothing, toys and beauty products and compared them to attitudes around the safety of internet-connected products, like websites, apps and smart home products. The research also explored consumer's perception of product safety practices at companies that make internet-connected products.

### 2.1 Background

ISL is a nonprofit technology watchdog organization that is creating a safe and just digital world through systematic exposure of the invisible and unavoidable risks in software and connected technology, because transparency drives product safety.

ISL has been thinking about what happens when we view the harmful aspects of software and software-driven technology, such as privacy violations, data over-sharing, deceptive patterns, and tracking through a holistic lens of product safety. ISL posits that the "product safety" framing will help us keep more people safer sooner.<sup>1</sup>

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*"[T]he framing of product safety is powerful and elegant, neatly tying together the range of harms that software has uniquely ushered into existence."*

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Key software behaviors that the ISL Safe Technology Specification tests for in mobile apps and websites are:

- User privacy,
- User autonomy/freedom of action,

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<sup>1</sup> Internet Safety Labs. (June 1, 2023). The Elephant is Product Safety – Internet Safety Labs. Web. <https://internetsafetylabs.org/blog/insights/the-elephant-is-product-safety/>

- Fair treatment of users [by the software], and
- Accuracy of notices.

This research provides crucial information regarding how much traditional product safety thinking is being applied to Internet-Connected Products, and how consumers view "product safety" for Internet-Connected Products.

## 2.2 Literature Review

The behaviors that the ISL Safe Software Specification test for relate to similar concerns in the World Economic Forum's ***Typology of Online Harms***<sup>2</sup>, published in August 2023, which include:

1. Threats to personal and community safety
2. Harm to health and well-being
3. Hate and discrimination
4. Violation of dignity
5. Invasion of privacy
6. Deception and manipulation

The World Economic Forum's list includes what ISL refers to as "weaponized software", or software that is deliberately used for ill-doing, and "sustained use harms", which includes physical, mental wellbeing, and societal harms that come from extended, persistent use of a particular software or software platform.<sup>3</sup> Where these lists differ is that ISL focuses on Programmatic Harms, or harms that happen to people just by using the technology *as it is intended to be used*.

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<sup>2</sup> World Economic Forum. (August 2023). Toolkit for Digital Safety Design Interventions and Innovations: Typology of Online Harms Insight Report. [https://www3.weforum.org/docs/WEF\\_Typology\\_of\\_Online\\_Harms\\_2023.pdf](https://www3.weforum.org/docs/WEF_Typology_of_Online_Harms_2023.pdf)

<sup>3</sup> Internet Safety Labs. (June 1, 2023). "The Elephant is Product Safety." <https://internetsafetylabs.org/blog/insights/the-elephant-is-product-safety/>

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*Criteria for product safety: the Consumer, using the product as expected, using it normally, should be safe.*<sup>4</sup>

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ISL has conducted earlier studies and interviews with consumers to learn what they know about Internet-Connected Product safety. In these earlier studies, concepts of “safety” and “security” arose naturally. Consumers expressed concerns about viruses, security breaches and financial data theft, for example, but also mentioned concerns about site tracking (specifically via web browsers) and other surveillance, such as control of microphones and webcam enablement.<sup>5</sup> Participants talked openly about their lack of confidence in their relationship with the producers of online products and the potential harm that can occur. This lack of confidence was illustrated by hedging language like “I didn’t understand” or “I don’t know” when asked about corporate behavior directly.

Consumers expect that product and service providers will do their best to prevent or minimize any harm caused when using or receiving their goods and services. In an ISL paper from 2021, Elizabeth Renieris noted that property owners are required to maintain the *safety and security* of their premises and may be liable for harm or injuries that result from their negligence.<sup>6</sup> This kind of protection does not seem to exist with digital products.

*“Unlike in the physical realm where we have some legal precedent to protect our fundamental rights, the digital realm is largely devoid of such protections.... Moreover, unlike physical property owners, app developers, website operators, and other digital service providers have virtually no obligations to undertake routine maintenance or to ensure minimum safety and security protections for their users as visitors or invitees on their properties.”<sup>6</sup>*

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<sup>4</sup> Internet Safety Labs. Safe Products Are Not the Consumer’s Responsibility. <https://internetsafetylabs.org/blog/insights/safe-products-are-not-the-consumers-responsibility/>.

<sup>5</sup> McComsey, Melanie. 2020. [“Treatment of consumers by Internet enabled businesses: Ethnographic pilot Study.”](#) Internet Safety Labs (previously, Me2B Alliance).

<sup>6</sup> Renieris, Elizabeth. 2021. “Rebuilding Respectful Relationships in the Digital Realm.” Computational Law. Massachusetts Institute of Technology. <https://law.mit.edu/pub/rebuildingrespectfulrelationships/release/4>

So how does that bode for software product safety, which ISL defined as the absence of harm when using a product as it is intended to be used?

In a 2022 study of legal policies<sup>7</sup> ISL found that people feel somewhat helpless after a public announcement of online harm, but hopeful that a company would want to improve its behavior to reduce future harm. For example, a focus group participant mentioned, for example, that after a data breach, “the damage was already done,” so they felt that they might be safer afterwards given a new focus on security. This suggests that consumers are aware that producers may repair damage after the fact.

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*“Consumers’ perception that they may be harmed in the course of an online transaction is an indirect indication that they that they see the consumer producer relationship as unstable and unknowable.” (McComsey, 2020)*

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No studies of consumer attitudes about the safety of software and software driven technology were found at the time of this publication.

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<sup>7</sup> Whysel, Noreen et al. 2022. “Consumer Perception of Legal Policies in Digital Technology.” Internet Safety Labs (was Me2B Alliance). [Spotlight Report #5: Me2B Alliance Validation Testing Report: Consumer Perception of Legal Policies in Digital Technology – Me2B Alliance \(internetsafetylabs.org\)](https://internetsafetylabs.org/wp-content/uploads/2022/07/Spotlight-Report-#5-Me2B-Alliance-Validation-Testing-Report-Consumer-Perception-of-Legal-Policies-in-Digital-Technology-Me2B-Alliance.pdf)

## 3 Research Design

### 3.1 Study Objectives

The objective of this study was to discover consumer attitudes about and knowledge of product safety when it comes to digital products, in particular, Internet-Connected Product safety. This was a quantitative study, utilizing an online survey with multiple choice, Likert, and open-ended questions.

Participants answered questions about their perception of product safety for general consumer products and for internet-connected products. They were also asked to describe how they evaluate product safety and who they feel has the most responsibility for ensuring safety, "Me, The Consumer", "The Product Makers" or "Both".

Additionally, consumers were asked if they think that product makers do safety testing and if they think makers should do safety testing.

### 3.2 Research Questions

This study addressed the following key research questions:

- Are there differences between consumer perceptions of product safety between physical consumer goods and internet-connected products and services?
  - **Hypothesis:** Consumers have differing ideas about product safety when it comes to physical consumer goods and software-driven/internet-connected products and services.
- Who do consumers believe is responsible for testing software and software-driven technology for safety?
  - **Hypothesis:** Consumers take on too much responsibility for product safety for Internet-Connected Products.
- Do consumers believe that software and software-driven technology is tested for safety before being commercially available? If so, by whom?
  - **Hypothesis:** Consumers believe that "someone must be" performing product safety testing on Internet-Connected Products.

This research will (1) serve as a consumer awareness check regarding software safety, (2) get consumers thinking about software safety, and (3) provide a snapshot of attitudes towards software and software-driven technology safety.

### 3.3 Participants

The researchers created a survey on SurveyMonkey, addressing a consumer population; the researchers engaged SurveyMonkey in recruiting an appropriate participant panel. The criteria for participation were broad: technology users, aged 18 and over in the United States. The researchers requested U.S. Census-based balancing for gender and age, but not income. The survey ran in two sets from September 14–15, 2023, and from September 22–23, 2023. A second set was completed because the first set included a large number of disqualified responses. Of 1070 responses, 188 were invalidated, leaving 882 responses. The margin of error for this population was  $\pm 3.367\%$ . Median Time to Complete was 6 minutes, 53 seconds.

469 female (53.2%) and 413 male (46.8%) respondents completed the survey. Age ranges included 19.8% aged 18–29, 36.2% aged 30–44, 44.0% aged 45–60. Ages under 18 were excluded, and no one over age 60 responded.

A majority of respondents, 51.3%, completed the survey using an iOS Phone/Tablet. 42.3% used Android Phone/Tablet, 3.9% were Windows Desktop/Laptop users and 2.0% were MacOS Desktop/Laptop users. Windows Desktop/Laptop users and 0.306% were MacOS Desktop/Laptop users.

Responses were skewed toward lower income brackets with 55.8% earning less than the US median household income of about \$75,000. 14.4% earned less than \$25,000, 14.8% earned \$150,000 or more, and 8.8% preferred not to answer the income question.

### 3.4 Informed Consent and Data Privacy

The researchers relied on SurveyMonkey's data privacy policy for panel contributors<sup>8</sup>, which expressly prohibits the collection of personally identifiable information on survey forms. SurveyMonkey provides panel buyers with a respondent ID and their age range, gender, race category, income range, device used and U.S. Census region. Researchers did not collect exact age, name, address, phone, email, IP address or other prohibited, personally identifiable information. Participants had the

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<sup>8</sup> SurveyMonkey Contribute Privacy Notice. n.d. Web. Retrieved from <https://www.surveymonkey.com/mp/legal/surveymonkey-contribute-privacy-notice/> on December 13, 2023.

ability to leave the survey at any time. Incomplete surveys were removed from the survey results and deleted.

### 3.5 Method

The researchers analyzed responses from an online survey of technology consumers conducted via SurveyMonkey. The survey had 17 questions, including a number of multiple-choice, ranked choice, rating scale and open-ended questions, allowing the researchers to analyze both quantitative and qualitative data. Five of these questions had an additional box to enter open-ended responses. SurveyMonkey also provided answers to five additional demographic questions from the participant profiles. The respondents selected the answers they agreed with and provided open-ended comments to explain or further describe their selections.

### 3.6 Data Analysis

Survey data from the SurveyMonkey questionnaire was downloaded to a Microsoft Excel spreadsheet and analyzed to determine if there were any significant patterns among the responses. Researchers created data tables and charts for each survey question. The data was further demographically analyzed by gender, age, income bracket, race/ethnicity, U.S. region and device use.

For the open-ended comments, the researchers used Carrot2 Clustering Workbench (<https://search.carrot2.org/#/workbench>) to examine open-ended comments from the survey responses. Clustering Workbench processes textual content from local files in XML, CSV, JSON or Excel format and allows tuning of clustering parameters and exporting results as Excel or JSON. The Lingo algorithm creates well-described flat clusters and is available as part of the open source Carrot2 framework. Depending on the number of responses per question, output was limited to a minimum cluster size of zero to ten responses per cluster.

## 4 Summary Findings

### 4.1 Importance of Product Safety

- People are extremely concerned about product safety--for all types of products. (Figure 5.1.5)
  - People are somewhat less concerned about product safety when it comes to Internet-Connected Products. (Figure 5.1.5)

### 4.2 Perception of Product Safety

- People see Clothing, Furniture and Groceries as the *safest* Consumer Goods, and Cleaning Products, Automobiles, and Personal Care products as the *least safe* Consumer goods. (Figure 5.2.2)
- People see e-Books, Smart TVs, and Health Devices as the *safest* Internet-Connected Products, and Websites, Smart Automobiles, and Smart Homes (with Mobile Apps close behind) as the *least safe* Internet-Connected Products. (Figure 5.2.4)
- People are more neutral in assessing safety in Internet-Connected Products. Consumer Products were more likely to receive stronger positive and negative responses for perception of safety. (Figure 5.2.5)

### 4.3 Concern for Product Safety

- People are most *concerned* about the safety of Cleaning Products, Automobiles, and Groceries (Consumer Products), and Websites, Mobile Apps and Smart Automobile Software (Internet-Connected Products). (Figure 5.3.1)
- The highest percentage of people (48.1%) rated Mobile Apps as a top 3 safety concern, but assessed Mobile Apps as safer than Websites, Smart Automobile software, and Smart Home devices (Figure 5.3.4). Perhaps because mobile apps are curated in app stores, there's a perception of safety; this warrants additional study.
- Based on the mean rankings, respondents were somewhat more concerned about safety of Internet-Connected Products compared to Consumer Products (section 5.3.3).
- Respondents were more likely to cite concern for child or family member safety for Consumer Products (9.7%) versus Internet-Connected Products (4.3%). (Figure 5.1.6)



## 4.4 Internet-Connected Product Harms

- **Consumers don't recognize the potential for physical, emotional, reputational, and other kinds of personal and societal harms (Figure 5.3.7). This is a massive disconnect and warrants a significant educational effort to bring harms/risks home to people.**
  - *"You can't get killed by the internet."*
  - *"[N]ot sure exactly what is meant by safety but physically there is almost no risk."*
- The most frequently selected risks in Internet-Connected Products were:
  - Automated Decision-Making,
  - Technology Addiction, and
  - Sharing/Selling Personal Data by 3rd
  - At the time of the survey, only 25.3% of respondents identified Misinformation/Disinformation as a safety risk. That may have changed with the availability and use of Generative AI tools.(Figure 5.3.8)

## 4.5 Evaluation of Risk

- Overwhelmingly, people are assessing product safety/risk for both Consumer and Internet-Connected Products (Figure 5.4.3).
  - Somewhat fewer people evaluate risk for Internet-Connected Products than Consumer Products.
- Consumers use similar resources to evaluate risk of Consumer and Internet-Connected Products (sections 5.4.1 and 5.4.2):
  - Reviews,
  - Consumer Reports,
  - Friends.

## 4.6 Responsibility for Product Safety

- People believe that they shoulder the burden for safety while using Internet Connected Products. 68.7% of respondents answered that either "Me, the Consumer" or "Both" [Me, the Consumer and The Product Maker] were responsible for Internet-Connected product safety. People were somewhat more likely (by about three points) to say the product maker was responsible for product safety for Consumer Products than for Internet-Connected Products.

- While the numbers are similar across Consumer Products and Internet-Connected Products, ISL is surprised that consumers are willing to accept responsibility for complex and often unknowable technology. ISL finds this interesting since people have fewer resources to help them understand product safety risks of Internet-Connected Products. ***Overall, ISL believes that consumers hold a mistaken— and unattainable—sense of responsibility for safety while using Internet-Connected Products. Consumers can't possibly assess the risks in Internet-Connected Products when product makers don't expose them, and in some cases don't even understand them themselves.***
- For respondents who provided different answers for the responsibility question, most "flipped" towards assigning more responsibility to "Me, the Consumer" than "the Product Maker" for Internet-Connected Products, reinforcing the theme that consumers believe they should somehow be responsible for product safety for a massive class of opaque and complex products (Figure 5.5.5).

#### 4.7 Product Testing of Internet-Connected Products

- Most respondents (40.6%) don't know if product makers of Internet-Connected Products perform product safety testing (Figure 5.6.1). 39.9% believe they do, and 19.5% believe they do not. ISL believes that most website and app developers do not perform product testing of any sort.
  - The cluster analysis of written responses (section 5.6.1) suggests that consumers have an innate belief that product safety testing is being done, and that technology makers have a legal or other obligation to conduct product safety testing. Such a legal obligation may be true of some product categories but is notably absent in Website and Mobile Apps, to name two of high concern to consumers.

#### 4.8 Need for Product Safety Testing of Internet-Connected Products

- A large majority (85.7%) of people surveyed believed that companies should perform product safety testing on Internet-Connected Products (Figure 5.6.5). 6.1% believed they should NOT.

#### 4.9 Impact of Survey on Product Safety Thinking

- 33.4% of participants said they thought differently about product safety for Internet-Connected Products after completing the survey (Figure 5.7.1).

## 4.10 Demographic Analysis

- The youngest age segment in the research (18–29 year olds) seems most inured to safety risks in Internet-Connected Products. Is this a trend based on the comfort of growing up with technology? Do even younger children share this belief?
- Minority and lower-income respondents expressed lower concern for Internet-Connected product safety than white, higher-income respondents. ISL hypothesizes that minority and lower-income groups may have less access to educational resources about technology risk, but this needs further research.
- Younger participants were also less likely to take personal responsibility for safety for Internet-Connected Products.

## 5 Detailed Findings

882 participants responded to the ISL survey exploring consumer perceptions of product safety and safety testing. The survey was divided into three sets of questions. The first set of questions were presented to get a baseline understanding of how people feel about or evaluate the safety of different categories of general consumer products. The second set of questions were related to "Internet-Connected Products" like websites, apps and smart TVs. These questions used similar wording as general "Consumer Product" safety questions, edited to specify "Internet-Connected Products".

A final set of questions related to how people evaluate the safety of these different product categories and whether they believe product makers do or should do safety testing (Internet-Connected Products only).

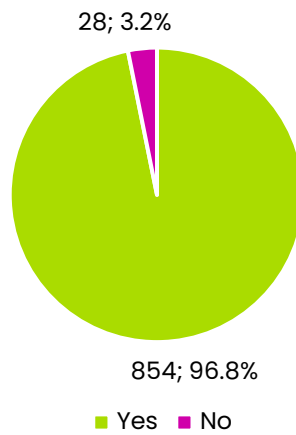
### 5.1 Importance of Product Safety

#### 5.1.1 Consumer Products – Importance of Product Safety

The first part of the survey presented questions regarding product safety of typical Consumer Products used by households. These included hard and soft goods, including household cleaning products, beauty and personal care products, pet care products, food, electronics, clothing, automobiles and other physical products that people use on a daily basis. The first question asked consumers if product safety for consumer products was important to them.

**Q1:** IS PRODUCT SAFETY IMPORTANT TO YOU?  
(All Participants)

Is product safety important to you?  
(Consumer Products)



**Figure 5.1.1**

Product Safety for consumer goods is overwhelmingly important survey participants. Nearly all participants (96.8%) selected Yes and only 3.2% selected No.

#### **5.1.1.1 Written Comments - Consumer Products**

**Q1:** PLEASE TELL US WHY YOU FEEL THIS WAY.  
(All Participants)

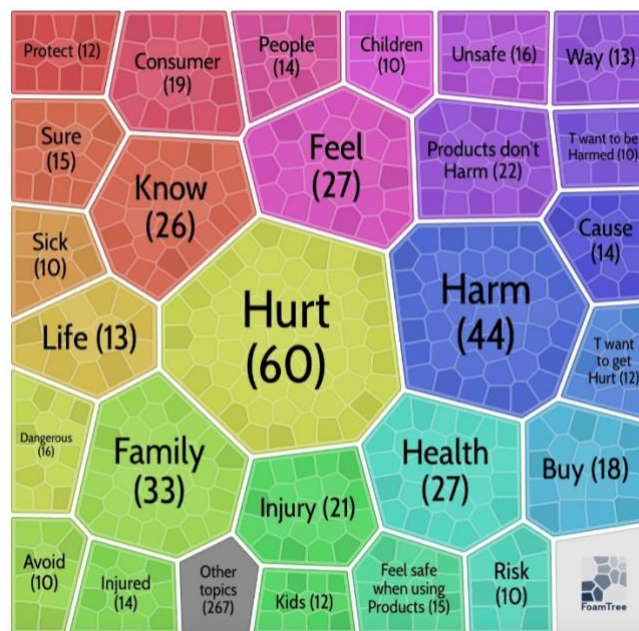
Of the 614 people that entered a comment, Carrot2 Workbench extracted 607 natural language responses. Of these, 589 respondents selected "Yes" and 17 selected "No".

#### 5.1.1.1.1 "Yes, Important" Comments - Consumer Products



**Figure 5.1.2a "Yes, Important" Responses, N=589; minimum clusters = 10 responses**

Excluding "Safe" and "Safety" and other expected terms from the cluster analysis sheds more light on consumers' concerns (Figure 5.1.2.b).



**Figure 5.1.2b "Yes, Important" Responses, N=589; minimum clusters = 10 responses; Excluding "Safe", "Safety", "Don't/Don", "Product Safety", and "Important"**

Clearly, a key reason for people rating product safety for Consumer Products as important related to concerns over personal injury or harm with 136 participants (23.1%) of "Yes" responders indicating "injury", "harm", or "hurt". Of the "Yes" responders, 16 (2.7%) indicated a concern over dying due to product use.

57 (9.7%) "Yes" responders mentioned kids/children or family.

The following are representative written comments from "Yes" responders.

---

*"Because I don't want an accident or injury to occur."*

*"[T]o prevent an accident or death."*

*"I don't want my children or anyone else to get hurt."*

---

Other "Yes" responders commented on the importance of company, maker or distributor taking responsibility for product safety.

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*"If a product is on the market, I want the maker to be accountable to the public."*

*"It's important that safety is a number one priority for consumers when purchasing new products as well as to avoid liabilities and lawsuits for the company"*

*"I don't want to spend money on a dangerous product. I would prefer to support companies who care as much about my safety as I do."*

*"It's important that safety is a number one priority for consumers when purchasing new products as well as to avoid liabilities and lawsuits for the company."*

---

#### 5.1.1.1.2 "No, Not Important" Comments - Consumer Products



**Figure 5.1.2c "No, Not Important" Responses, N=17; no minimum cluster size**

Figure 5.1.2c displays the word cluster for the participants responding "No".

Concerns expressed in comments related to injury, harm, getting sick or dying, and concern for the safety of their children, family, and loved ones.

---

*"Because I don't want an accident or injury to occur."*

*"[T]o prevent an accident or death."*

*"I don't want my children or anyone else to get hurt."*

---

Others commented on the importance of company, maker or distributor taking responsibility for product safety.

---

*"If a product is on the market, I want the maker to be accountable to the public."*

*"It's important that safety is a number one priority for consumers when purchasing new products as well as to avoid liabilities and lawsuits for the company"*



*"I don't want to spend money on a dangerous product. I would prefer to support companies who care as much about my safety as I do."*

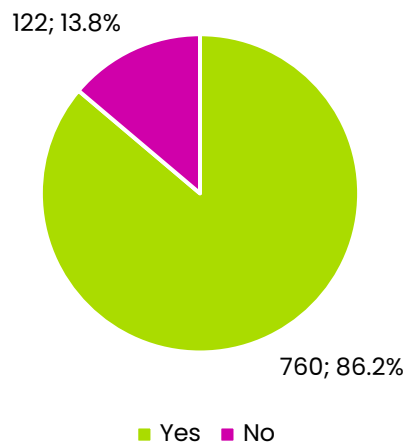
*"It's important that safety is a number one priority for consumers when purchasing new products as well as to avoid liabilities and lawsuits for the company."*

---

## 5.1.2 Internet-Connected Products – Importance of Product Safety

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(All Participants)

Is product safety important to you?  
(Internet-Connected Products)



**Figure 5.1.3**

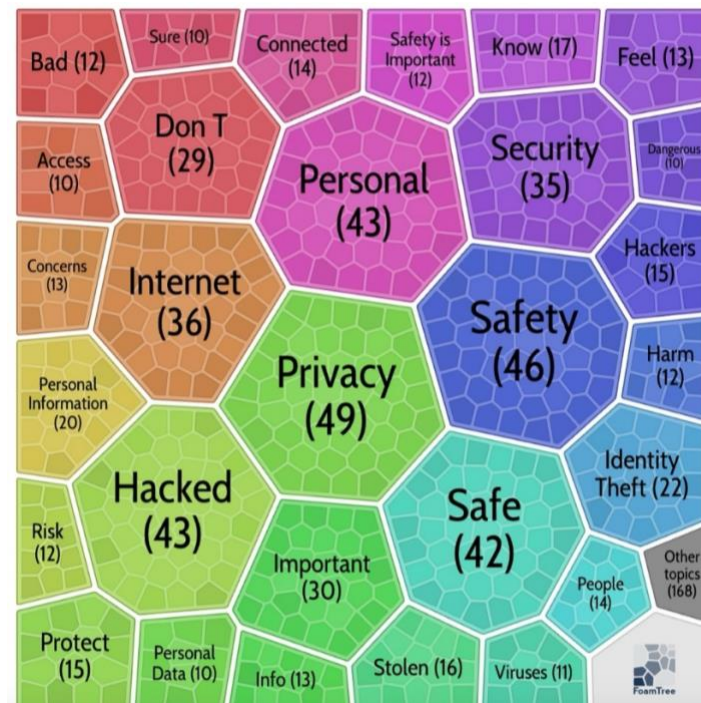
All 882 participants responded to this question. Like Consumer Products, product safety was important to a large majority of participants (86.2% out of 882).

### 5.1.2.1 Written Comments – Internet-Connected Products

**Q7:** PLEASE TELL US WHY YOU FEEL THIS WAY.  
(All Participants)

Of those that entered a comment, Carrot2 Workbench extracted 613 natural language responses, with 533 from those who responded “Yes” for the importance of Internet-Connected product safety, and 81 from those who responded “No”.

#### 5.1.2.1.1 “Yes, Important” Comments – Internet-Connected Products



**Figure 5.1.4a “Yes, Important” Responses, N=533, minimum cluster = 10**

Most of the “Yes” responses mentioned concerns about privacy (10.5%), hacking (10.9%) or identity theft (4.1%). 18 participants (3.6%) mentioned “injury”, “harm”, or “hurt”. None of the “Yes”-responding participants mentioned concern about dying.

23 respondents (4.3%) who indicated that product safety was important for Internet-Connected products mentioned children, kids or family as a concern.

The following are select written responses from “Yes” responders:

---

*“There’s a lot of bad stuff on the Internet.”*

*“I’m assuming that we’re now talking about a different set of risks, related to privacy and in some cases damage [sic] to one’s data.”*

---

Also prominent with "Yes" responders was fear of Identity Theft (22 comments), being Hacked (43 comments) or Hackers (15 comments) and is related to privacy and safety. Comments that mentioned Personal (43 comments) included concerns about protecting "personal information" or "personal data".

---

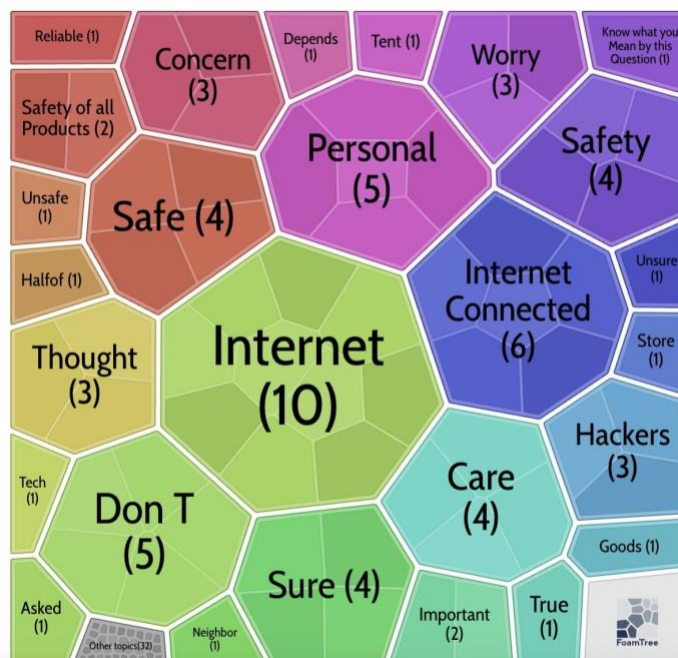
*"Hackers can take all your information."*

*"I think safety means security in this case."*

---

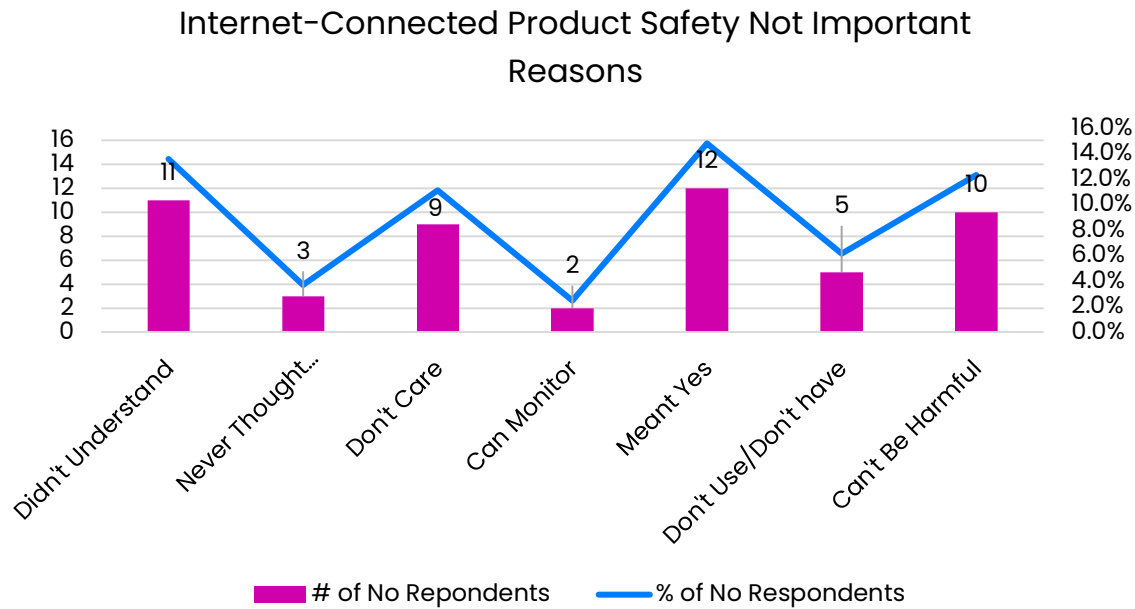
Thirty (5.6%) "Yes" responders mentioned "security" in their written response, affirming the conflation between security and safety with some consumers. ISL was surprised the number was not higher and believes that if the survey were run with internet-connected product *makers*, the number would be much higher (approaching 100%), but that requires future testing.

#### 5.1.2.1.2 "No, Not Important" Comments - Internet-Connected Products



**Figure 5.1.4b "No, Not Important" Responses, N=81, no minimum cluster size**

Given the data from the cluster analysis, the written comments were further assessed to determine the semantics of the comments and clustered into categories shown below (Figure 5.1.4.c).



#### **5.1.4.c Reasons Respondents Indicated Internet Product Safety Wasn't Important**

As can be seen in 5.1.4c, review of the written comments revealed that 12 (or 14.8%) of the "No" respondents seemed to indicate that product safety *was* important to them. Nine indicated that they just don't care or think about it, and 10 (12.3%) of the "No" respondents indicated that Internet Connected Products can't be harmful.

Interestingly, five of the "No" respondents indicated that they don't have or use Internet-Connected Products, which clearly indicates participant confusion over the survey terminology, as all respondents were using some kind of internet-connected device to complete the survey.

The following are select comments from "No" responders:

---

*"I'm not sure what an internet connected product is."*

*"I don't use any connected devices for anything more than convenience."*

*"You can't get killed by the internet."*

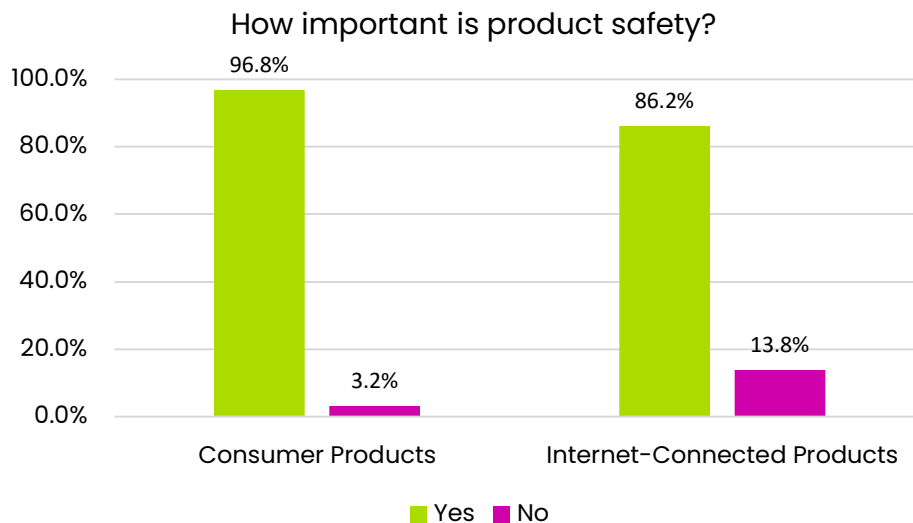
*"[N]ot sure exactly what is meant by safety but physically there is almost no risk"*

“[I] never thought about it really, but now I will.”

---

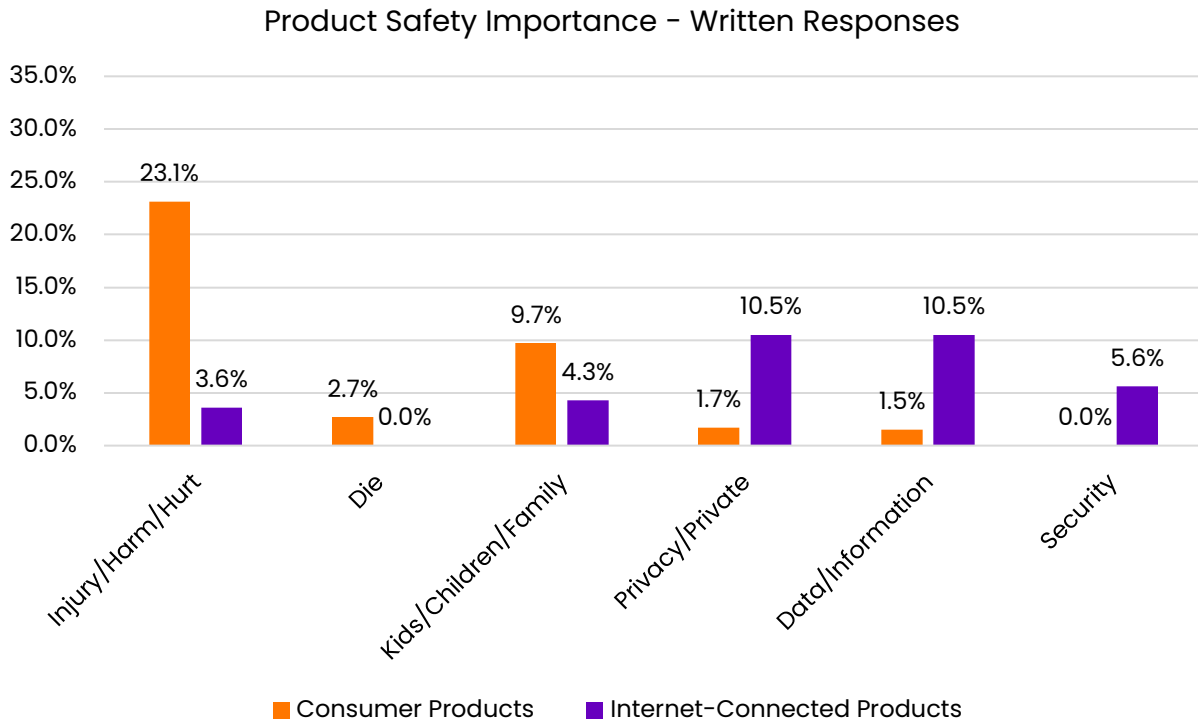
### 5.1.3 Comparing Importance of Product Safety

Figure 5.1.5 shows the yes/no responses for the two types of products side by side. As can be seen, a significantly higher percentage of participants responded "No" to product safety importance for Internet-Connected products. Based on the written responses from "No" respondents reviewed in the previous section, there were several contributing factors to this increase in "No" responses, including the perception that Internet-Connected Products can't be harmful. The researchers recommend a revised version of this question with clearer definitions.



**Figure 5.1.5**

The written comments paint a stark difference between how injurious people perceive the two classes of products (Figure 5.1.6). The chart illustrates the start of a pattern where respondents see Consumer Products as more likely to have risk of personal injury or death, and Internet-Connected Products as having mainly a risk of privacy violation. This is a troubling finding of which more will be said in later sections of the report.



**Figure 5.1.6**

## 5.2 Perceived Safety of Product Categories

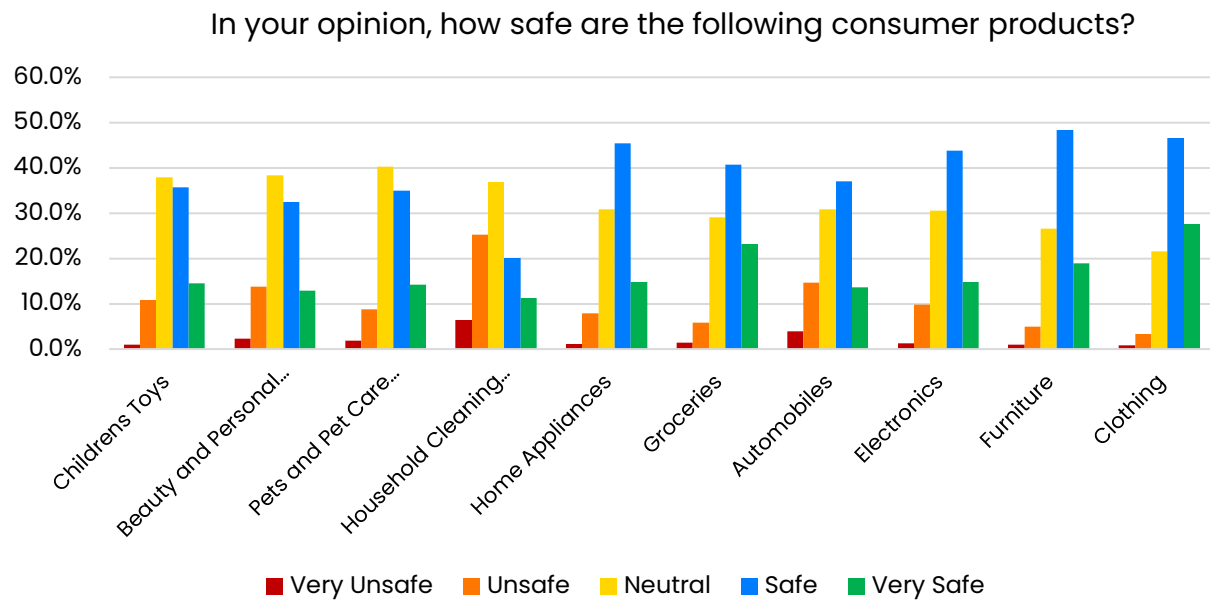
### 5.2.1 Consumer Products – Perceived Safety

Next, participants were asked to rate the Consumer Product categories from Very Unsafe to Very Safe.

**Q2:** IN YOUR OPINION, HOW SAFE ARE THE FOLLOWING CONSUMER PRODUCTS?  
(By Product Category)

**Table 5.2.1**

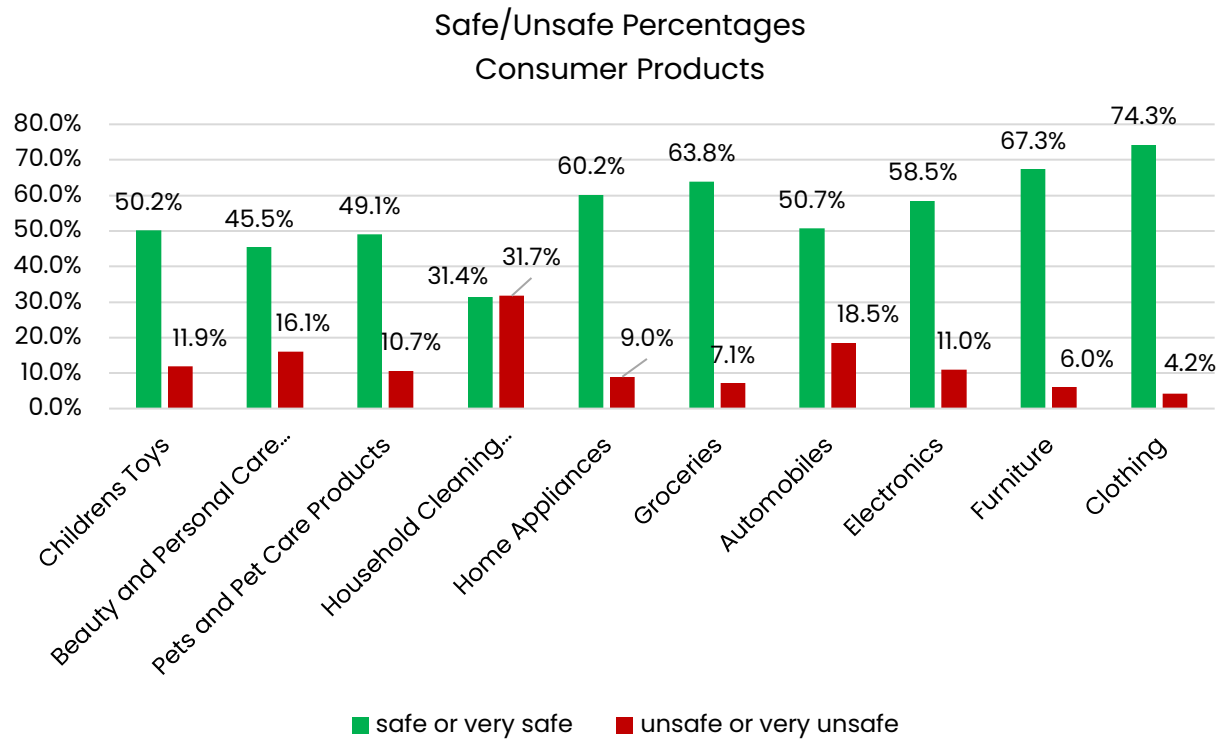
	Childrens Toys	Beauty and Personal Care Products	Pets and Pet Care Products	Household Cleaning Products	Home Appliances	Groceries	Automobiles	Electronics	Furniture	Clothing
<b>Very Unsafe</b>	1.0%	2.3%	1.8%	6.5%	1.1%	1.4%	3.9%	1.2%	1.0%	0.8%
<b>Unsafe</b>	10.9%	13.8%	8.8%	25.3%	7.8%	5.8%	14.6%	9.8%	5.0%	3.4%
<b>Neutral</b>	37.9%	38.4%	40.2%	36.8%	30.8%	29.0%	30.8%	30.5%	26.6%	21.5%
<b>Safe</b>	35.7%	32.5%	34.9%	20.2%	45.5%	40.7%	37.1%	43.8%	48.4%	46.6%
<b>Very Safe</b>	14.5%	12.9%	14.2%	11.2%	14.7%	23.1%	13.6%	14.7%	18.9%	27.7%



**Figure 5.2.1**

Of these product categories, Clothing was rated the safest category with 74.3% rating it Safe or Very Safe, followed by Furniture (67.3%), Groceries (63.8%) and Home Appliances (60.2%) (Figure 5.2.2)

Product categories rated the least safe were Household Cleaning Products with 31.7% rating them Unsafe or Very Unsafe, followed by Automobiles (18.5%) and Personal Care Products (16.1%) (Figure 5.2.2). 20-40% of participants were neutral on the safety of these categories.



**Figure 5.2.2**

### 5.2.2 Internet-Connected Products – Perceived Safety

Similarly, we asked participants how they viewed the safety of Internet-Connected Products.

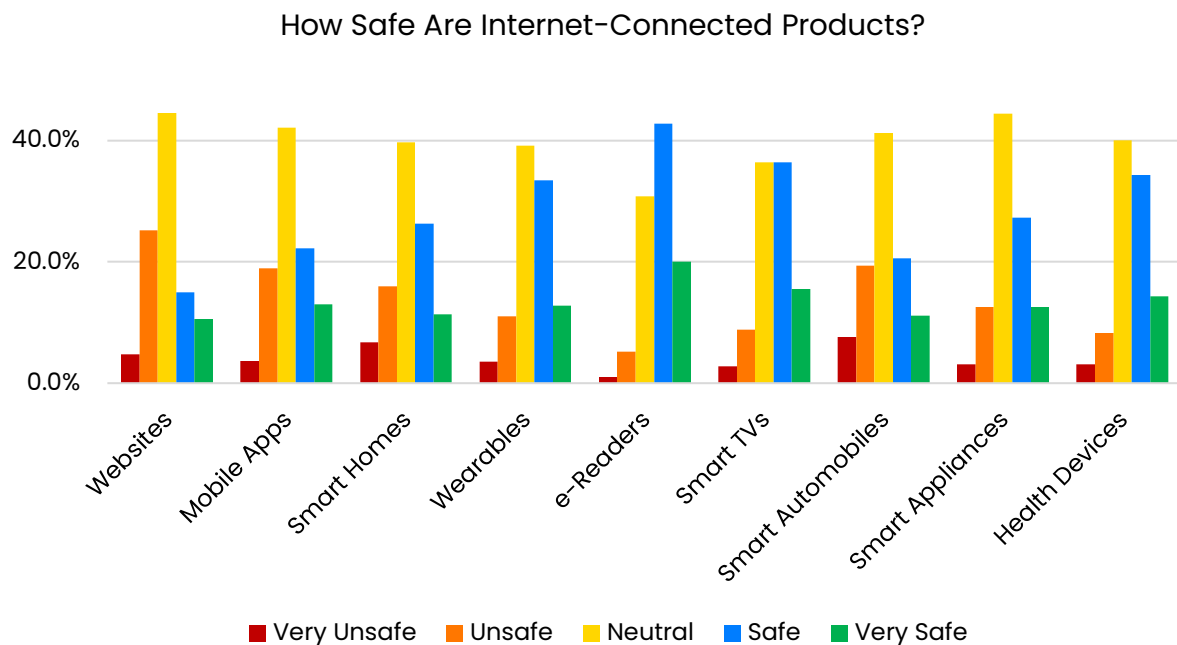
When asked how safe they thought Internet-Connected Products are, participants indicated e-Readers, Smart TVs, and Health Devices were the safest. Websites, Smart Automobiles, and Smart Home devices were the least safe, with Mobile Apps the fourth least safe.



**Q8: IN YOUR OPINION, HOW SAFE ARE THE FOLLOWING INTERNET-CONNECTED PRODUCTS?**  
(By Product Category)

**Table 5.2.2**

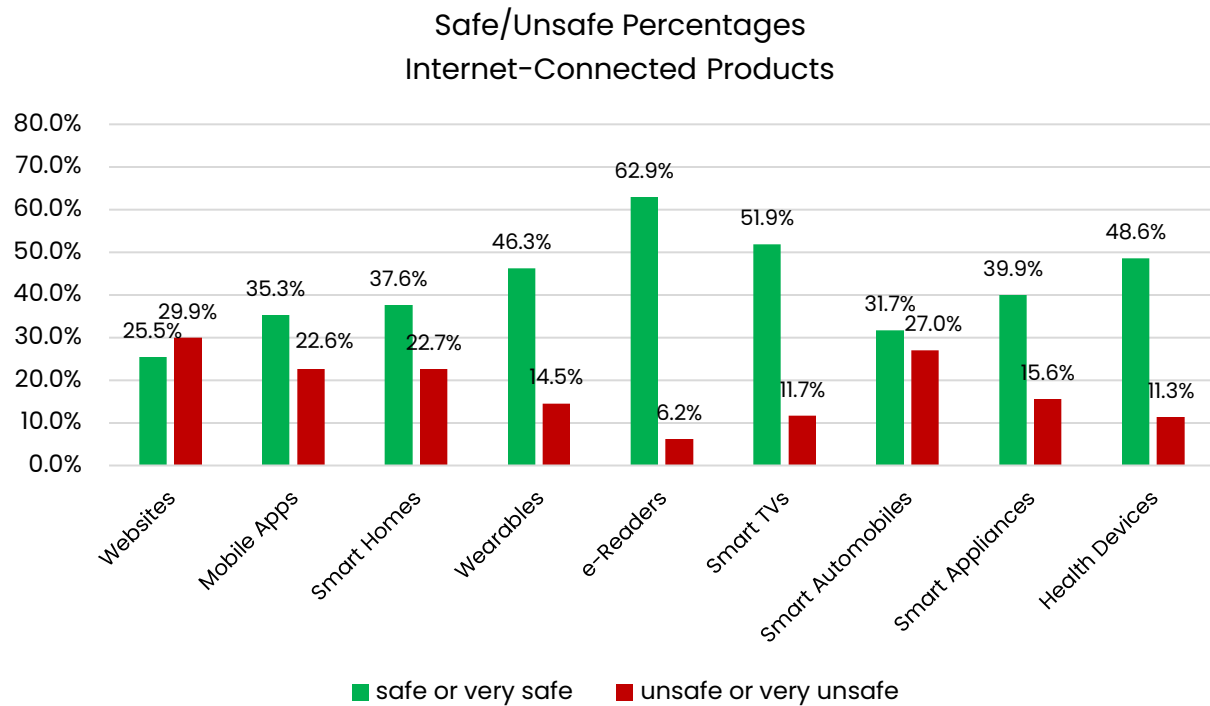
	Websites	Mobile Apps	Smart Homes	Wearables	e-Readers	Smart TVs	Smart Automobiles	Smart Appliances	Health Devices
<b>Very Unsafe</b>	4.8%	3.6%	6.7%	3.5%	1.0%	2.8%	7.6%	3.1%	3.1%
<b>Unsafe</b>	25.2%	18.9%	16.0%	11.0%	5.2%	8.8%	19.4%	12.6%	8.3%
<b>Neutral</b>	44.6%	42.2%	39.7%	39.2%	30.8%	36.4%	41.3%	44.4%	40.0%
<b>Safe</b>	15.0%	22.2%	26.3%	33.4%	42.9%	36.4%	20.6%	27.3%	34.4%
<b>Very Safe</b>	10.5%	13.0%	11.3%	12.8%	20.1%	15.5%	11.1%	12.6%	14.3%



**Figure 5.2.3**

Ratings by category ranged from 6.2% to 29.9% for Very Unsafe or Unsafe and from 25.5% to 62.9% by category for Safe to Very Safe. Category ratings ranged from 30.8% to 44.6% of participants who were Neutral in their opinion of the safety of these categories.

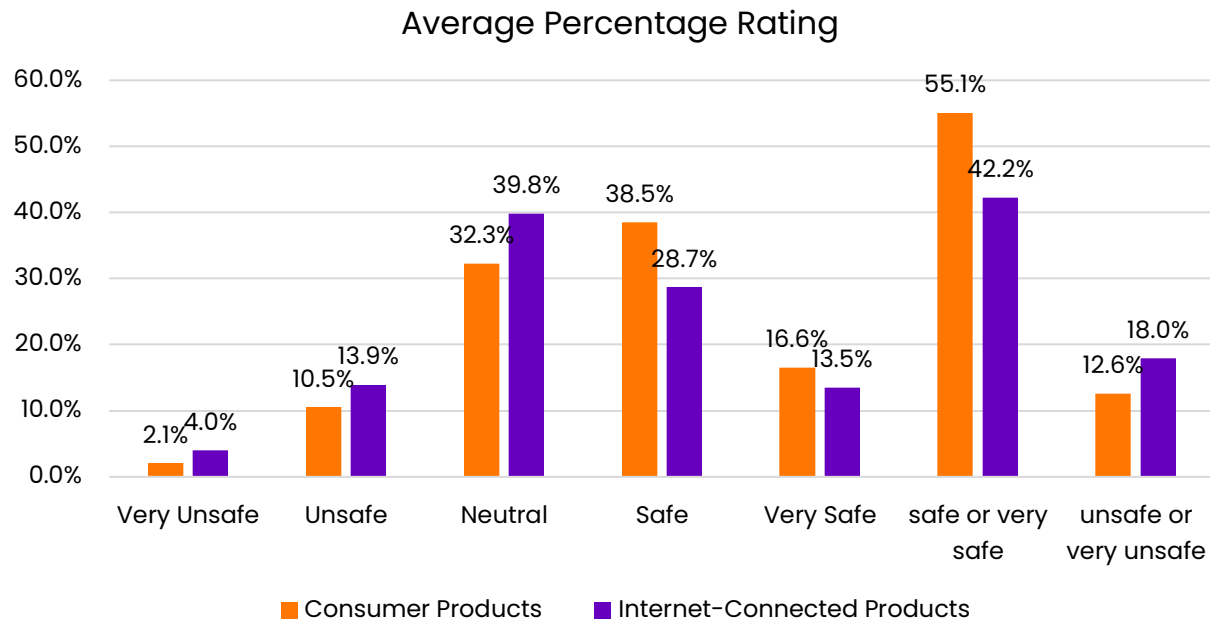
The Internet-Connected Product categories that were rated the least safe were Websites with less than one-third or 29.9% rating them Unsafe or Very Unsafe, followed by Smart Automobiles (27.0%), Smart Home devices (22.7%) and Mobile Apps (22.6%) (Figure 5.2.4).



**Figure 5.2.4**

### 5.2.3 Comparing Perceived Safety

Comparing the perceived safety of Consumer versus Internet-Connected Products, consumers **are more neutral (possibly less confident) about the product safety of Internet-Connected Products** (Figure 5.2.5). Consumer Products have higher (30.6%) safe and very safe scores, and significantly lower (30.0%) unsafe or very unsafe scores than Internet-Connected Products. Correspondingly, Internet-Connected Products have a higher (18.8%) rate of Neutral ratings.



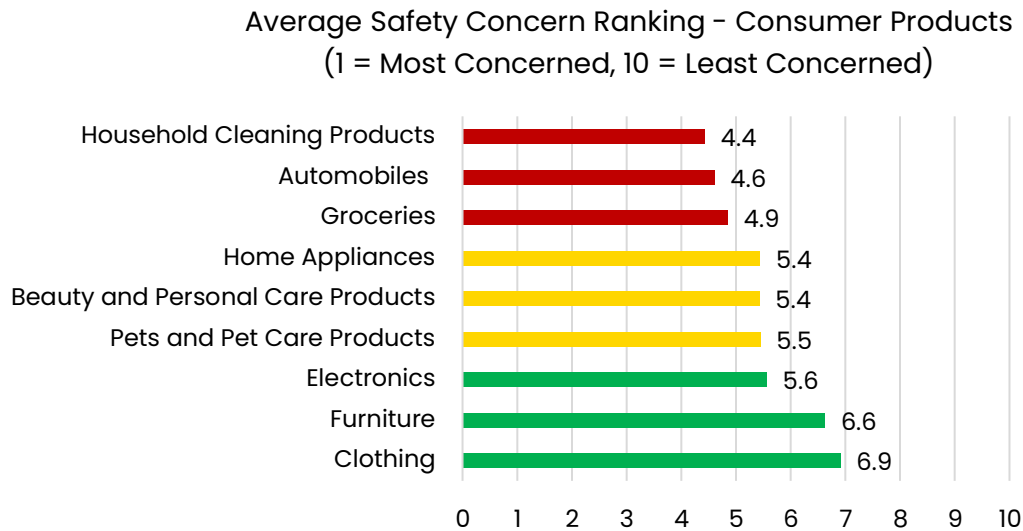
**Figure 5.2.5**

### 5.3 Concern About Safety

Next, participants were asked to rank order each product category according to how concerned they were about that category's product safety.

#### 5.3.1 Consumer Products - Safety Concern

**Q3:** PLEASE RANK THE FOLLOWING PRODUCT CATEGORIES FROM 1 TO 10, ACCORDING TO HOW CONCERNED YOU ARE ABOUT PRODUCT SAFETY (By Product Category)



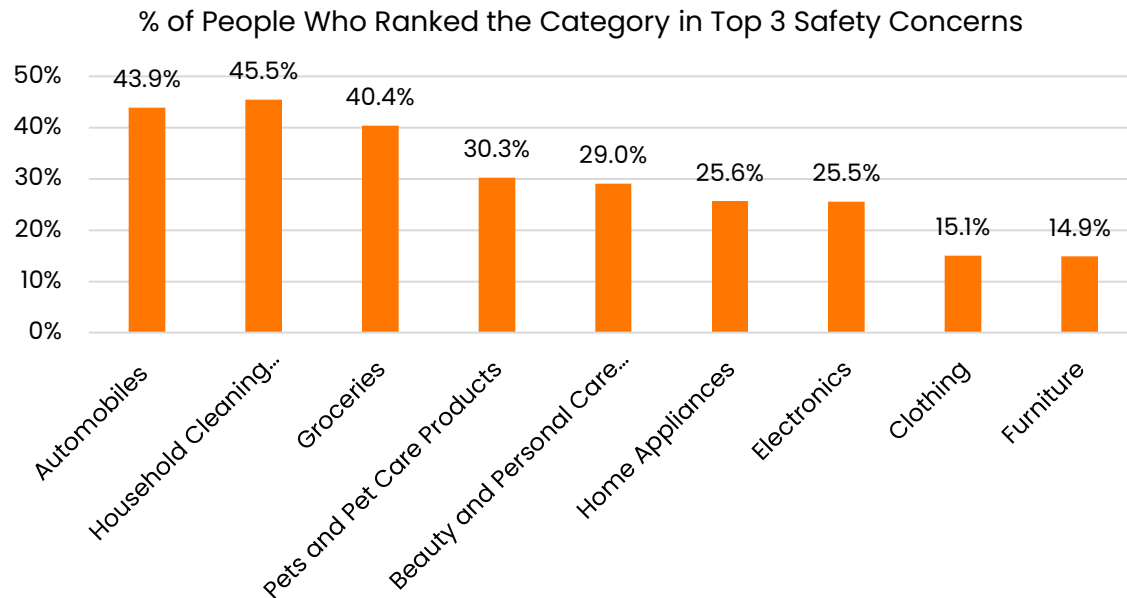
**Figure 5.3.1**

The lowest rankings, indicating greater safety concern, were Household Cleaning Products at 4.4, Automobiles at 4.6 and Groceries at 4.9. Four Consumer Product categories were very close to the middle with Electronics at 5.6. Pets and Pet Care Products ranked at 5.5, and Beauty and Personal Care Products and Home Appliances tied at 5.4. Clothing had the highest average product safety ranking at 6.9, followed by Furniture at 6.6.

It's interesting that consumers rate safety of Groceries among the top three concerns, and also rated Groceries as one of the safest Consumer Product categories.

Open ended comments indicated that Household Cleaning Products received a low ranking (indicating high safety concern) because of the chemicals in them. Many discussed concerns about their family getting sick or killed from ingesting household cleaners but indicated that if they are responsibly used and stored the harm is minimized.

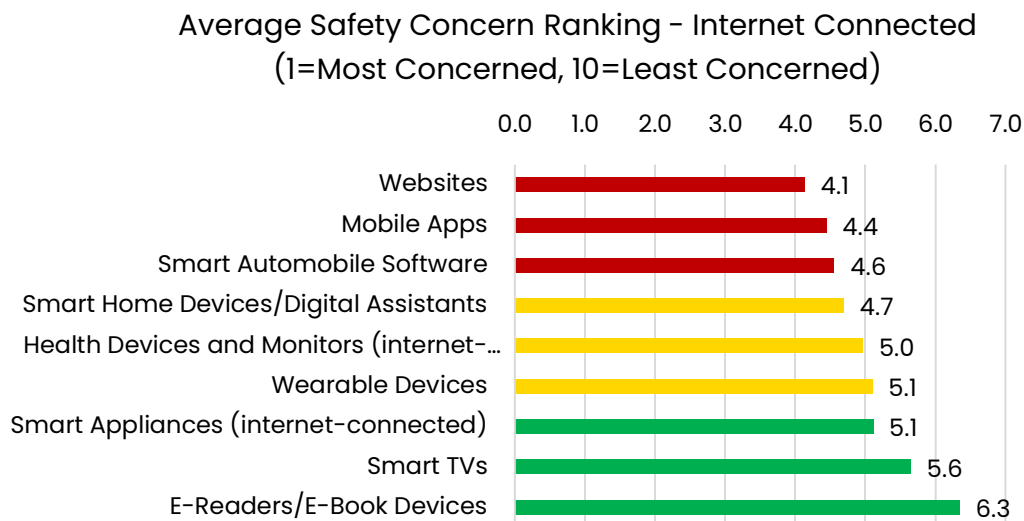
Figure 5.3.2 presents the data by the percentage of people who ranked the category in their top three safety concerns. The top three Consumer Products with the greatest safety concerns were Cleaning Products, Automobiles, and Groceries.



**Figure 5.3.2**

### 5.3.2 Internet-Connected Products – Safety Concern

**Q9:** PLEASE RANK THE FOLLOWING INTERNET-CONNECTED PRODUCT CATEGORIES FROM 1 TO 10, ACCORDING TO HOW CONCERNED YOU ARE ABOUT PRODUCT SAFETY (1 = Most Concerned, 10 = Least Concerned)



**Figure 5.3.3**

Websites had the lowest average safety rating at 4.1, followed by Mobile Apps at 4.4, then Smart Automobile Software at 4.6 and Smart Home Devices at 4.7. Health

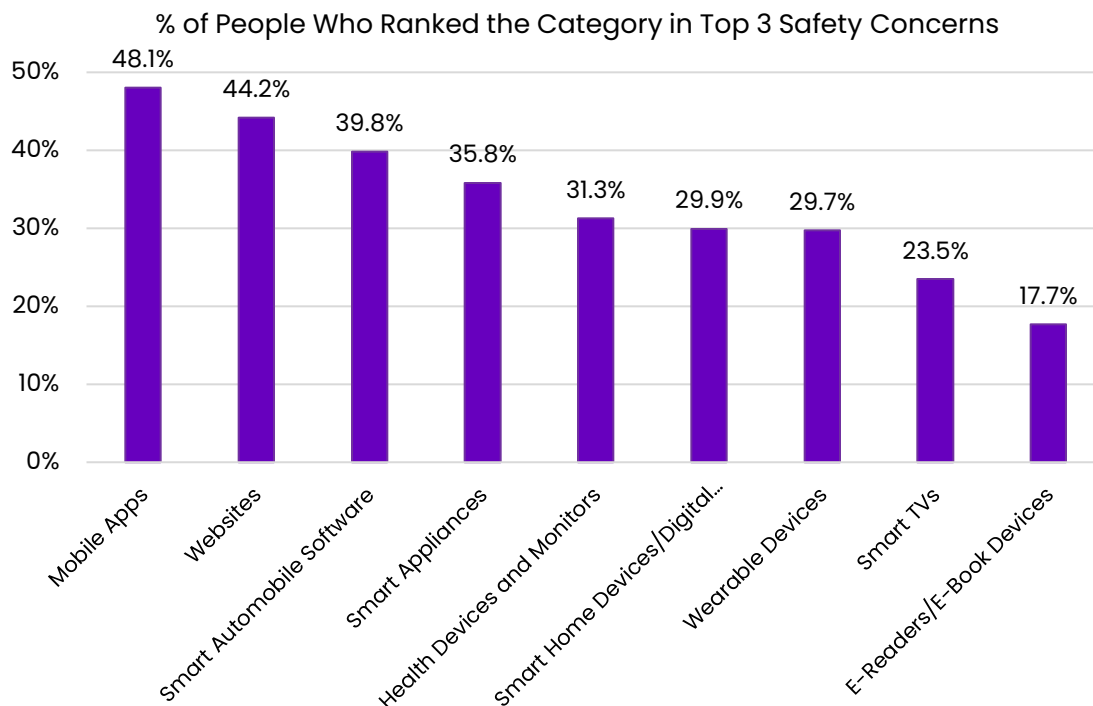
Devices and Monitors (internet-connected) ranked at 5.0, and both Wearable Devices and Smart Appliances (internet-connected) ranked at 5.4. Participants were least concerned about E-Readers/E-Book Devices which ranked 5.6 and E-Readers/E-Book Devices at 6.3.

ISL finds it interesting that consumers appear to have innate trust in Health Devices, appearing to be generally neutral with respect to concern for safety, and scoring high in perceived safety. **ISL wonders where this trust comes from and suggests that validation of this trust is an important research priority.**

Figure 5.3.4 displays which categories were listed in the “Top 3 Concerns” by percentage. In general, these were the same categories as those marked least safe with a difference that the Mobile apps category was selected in the top three more often than Websites.

Mobile Apps was most frequently selected as one of the “Top 3 Concerns” by 48.1% of participants, followed by Websites at 44.2% and Smart Automobiles by 39.8%. E-Readers/E-Book Devices had the lowest number, with only 17.7% putting it into their “Top 3 Concerns”, followed by Smart TVs at 23.5%. The other categories had between 30 and 35% of the share of the “Top 3 Concerns”.

Note that since Mobile Apps were more in the middle for perceived safety, it appears that consumers recognize the risks in mobile apps but view them as safer than Smart Home devices and Smart Automobiles. **ISL wonders why consumers sense that mobile apps are somehow safer than websites, and other devices.**



**Figure 5.3.4**

### 5.3.3 Comparing Safety Concern

The average safety concern rating for Consumer Products was 5.5 (out of 10), and the average safety concern rating for Internet-Connected Products was 5.0, indicating that consumers have somewhat more safety concerns over Internet-Connected Products. This could be due to the opacity of highly technical products, or the relative newness of these products--i.e. fear of the unknown. It's a mean, and the difference isn't terribly high (5%). It warrants additional investigation.

Similarly, looking at the average percentage of respondents who put a category in their top three, Consumer Products averaged 30.0% and Internet-Connected Products averaged somewhat higher at 33.3%.

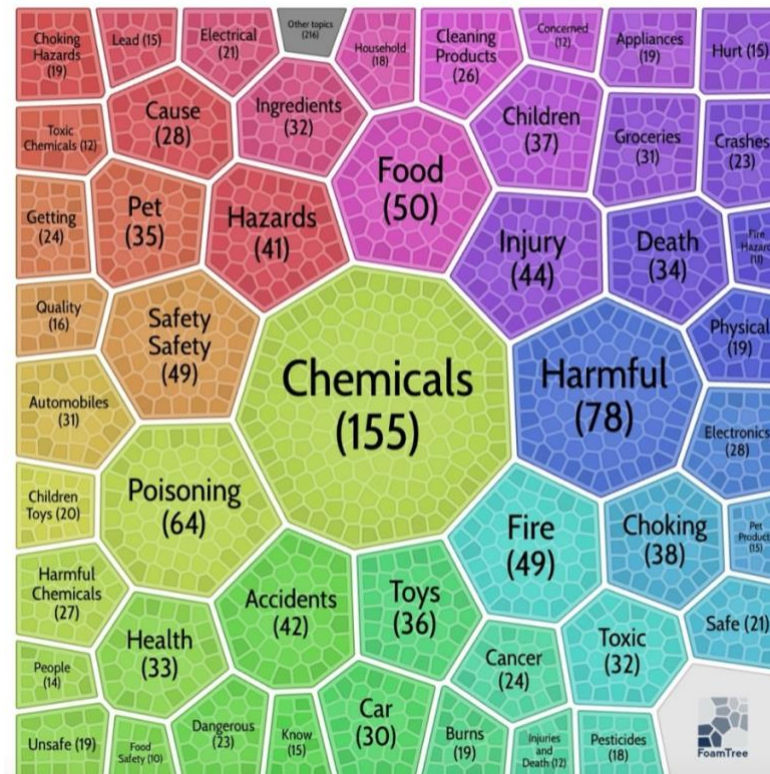
### 5.3.4 Written Comments, Types of Harms - Consumer Products

**Q4:** What type of harms are you most concerned about in the Top 3 Consumer Product categories you selected [in the previous question]?  
(All Participants)

This question was an open-ended response that participants wrote in. Carrot2 Workbench extracted 882 natural language responses. For consumer products,

chemicals and poisoning were recurring themes. Most of the concerns appear to be for physical injury and death (Figure 5.3.5).

6.88% of responses indicated concern for kids or family.



**Figure 5.3.5 N=882, minimum cluster size = 10 responses**

### 5.3.5 Written Comments, Types of Harms – Internet-Connected Products

**Q10:** What type of harms are you most concerned about in the Top 3 Internet-Connected Product categories you selected [in the previous question]?  
(All Participants)

Of those that entered a comment, Carrot2 Workbench extracted 882 natural language responses. Respondents were most concerned about hacking and privacy breaches (Figure 5.3.6). Only 17 (1.9%) of respondents expressed concern related to kids or family, noticeably fewer than the 6.9% who mentioned kids or family in the consumer product category. ISL surmises that this is likely related to the perception that internet-connected products are more likely viewed as not capable of being



harmful. ISL further wonders if the 42 state Attorneys General cases<sup>9</sup> against Meta over product harms to children late in 2023 and the 2024 US senate hearing on child online safety<sup>10</sup> have changed consumers' perceptions.

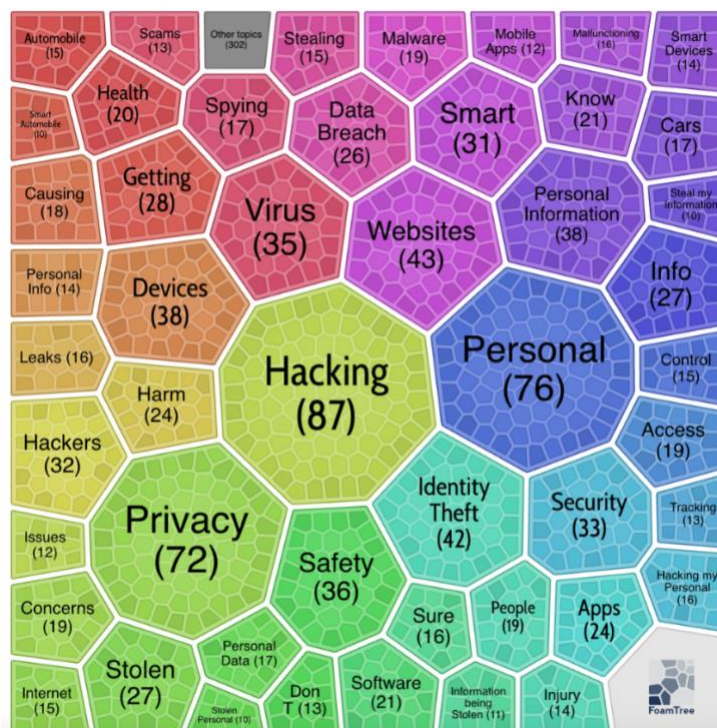


Figure 5.3.6 N=882, Minimum cluster size = 10 responses

### 5.3.5.1 Select Written Reasons

Some of the reasons for rating these Internet-Connected Product categories as Unsafe or Very Unsafe included the following:

Table 5.3.1

<p><b>Websites</b></p>	<p>“Stealing personal information and tracking”</p> <p>“My kids finding something they shouldn’t be seeing”</p>
------------------------	---

<sup>9</sup> <https://techcrunch.com/2023/10/25/meta-attorneys-general-state-joint-lawsuit-children/>

<sup>10</sup> <https://www.nytimes.com/live/2024/01/31/technology/child-safety-senate-hearing>

<b>Mobile Phones</b>	<hr/> <p><i>"Someone bad knowing my whereabouts."</i></p> <p><i>"People hacking in and listening or using the information"</i></p> <hr/>
<b>Smart Home Devices</b>	<hr/> <p><i>"spying and security of personal info."</i></p> <p><i>"Bad actors infiltrating your home and controlling your home or appliances...."</i></p> <hr/>
<b>Smart Automobiles</b>	<hr/> <p><i>"Smart automobile can be hacked or not respond correctly"</i></p> <p><i>"....car software doing the wrong thing while driving and causing a crash."</i></p> <hr/>

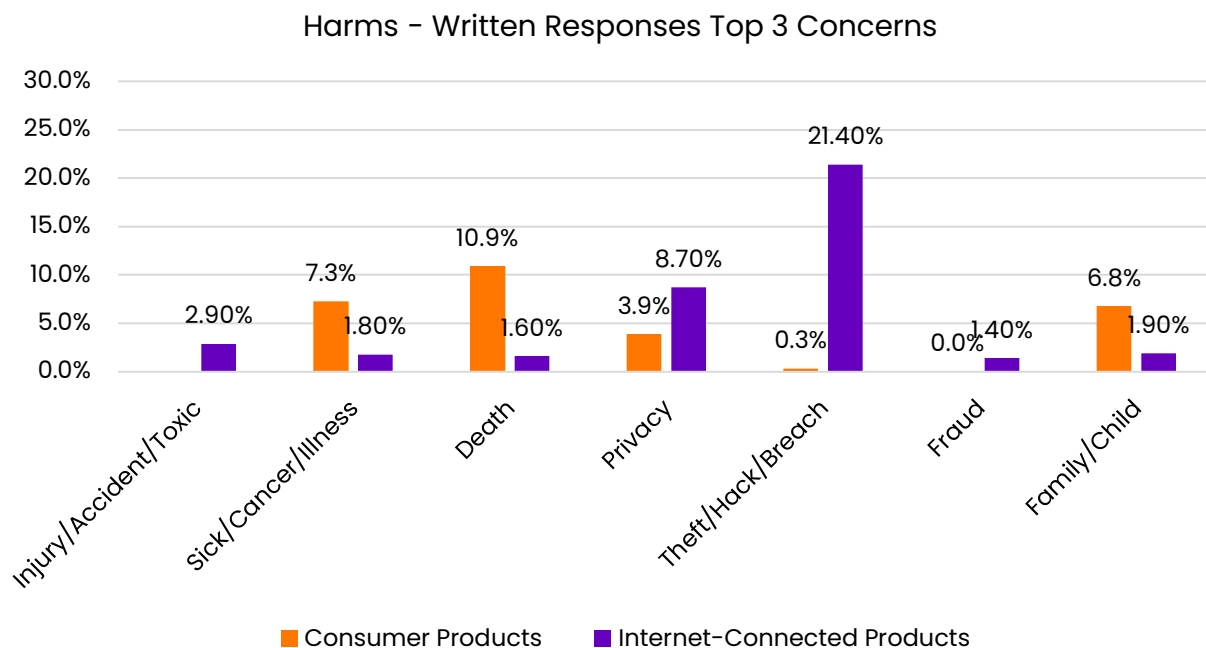
### 5.3.6 Comparing Types of Harms

The responses to this question point to an important difference in the minds of consumers between Consumer Products and Internet-Connected Products: they more frequently associate threat to their physical well-being with Consumer Products, and they more frequently associate threat to their privacy or property with Internet-Connected Products. They recognize bodily injury risk when it comes to connected cars, but primary concerns in Internet-Connected Products are over loss of personal information as a personal asset. Interestingly, financial risk is mentioned only four times by respondents, though it could be that they understand identity theft as tantamount to financial risk/loss.

In short, consumers aren't connecting the dots between loss of privacy and second/third order harms relating to physical safety and well-being. This may be related to the over 10% drop in Yes responses to the importance of Internet-connected Product safety.

**Consumers don't recognize the potential for physical, emotional, reputational, and other kinds of personal and societal harms. This is a massive disconnect and warrants a significant educational effort to bring harms/risks home to people. Their understanding is superficial at best.**

Findings in section 5.1 reinforce this finding.



**Figure 5.3.7**

### 5.3.7 Internet-Connected Products – Safety Risks

Participants were asked to further identify safety risks from a list of possibilities for Internet-Connected Products.

Automated Decision-Making was the most frequently chosen (by 75.7% of participants), followed by Technology Addiction (62.7%), and Sharing/Selling Personal Data by Third Parties (58.2%). This indicates good instincts by consumers, but ISL posits that they don't fully understand the potential adverse outcomes of these risks, by the open-ended responses in the previous section.

**Q14:** WHICH OF THE FOLLOWING DO YOU THINK ARE SAFETY RISKS OF INTERNET-CONNECTED PRODUCTS?

(All Participants)

Which of the following do you think are safety risks of Internet-Connected products?

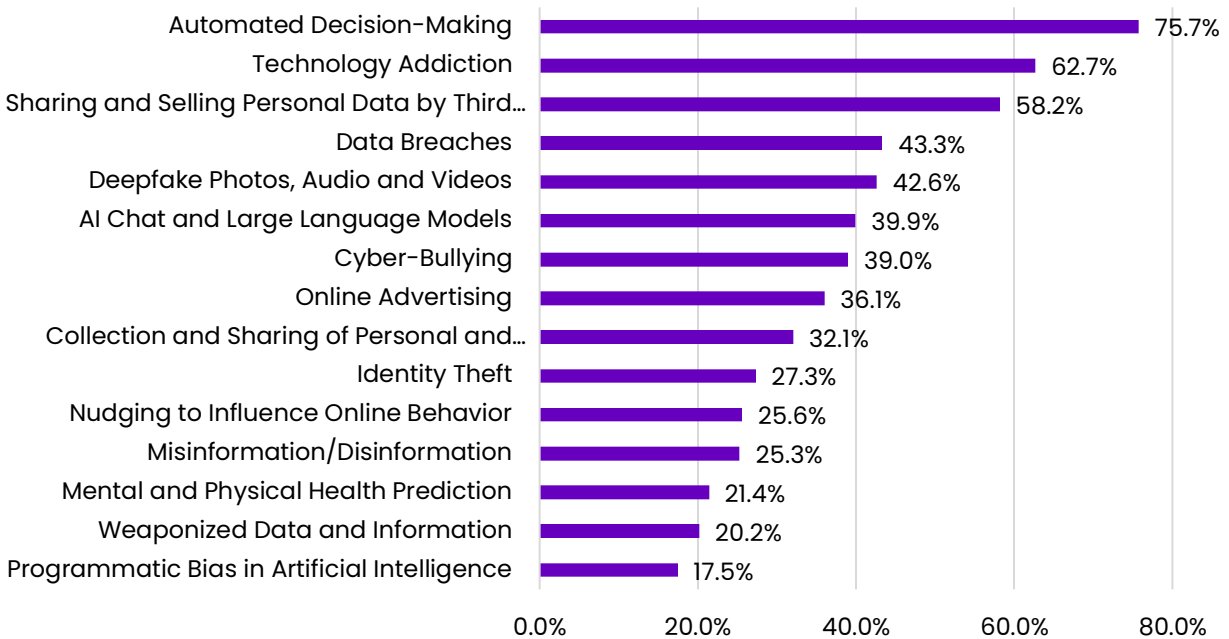


Figure 5.3.8

## 5.4 Evaluation of Risk

### 5.4.1 Consumer Products – Evaluation of Risk

**Q16:** HOW DO YOU EVALUATE THE RISK OF HARM FOR THE TOP 3 CONSUMER PRODUCT CATEGORIES YOU SELECTED? (Please include any tools, references, people or other resources, including online resources)  
(All Participants)

Of those that entered a comment, Carrot2 Workbench extracted 882 natural language responses to this question.

Consumers provided a number of ways that they actively evaluate Consumer Products and Internet-Connected Products for safety, but many are unsure how to do so. When asked about Consumer Product safety in general in open-ended comments, people tend to cite a wide variety of evaluation methods. They read reviews and do online or other research: 15.2% of the survey population, or 134 participants, indicated that they read reviews with 43 (5.2%) citing Consumer Reports by name. 106 participants (12.0%) research consumer products online through Google or other searches or get their information from the news (3.1%).

They also check ingredients (7.8%) and read product labels (4.3%), recall notices (2.9%) or rely on their personal experience with or opinion of a product (2.4%). 2.8% rely on government entities like the FDA or regulation and no one referenced company policies or terms of use aside from reviewing manuals.

The number of people who were unsure how to evaluate Consumer Products included 44 people or 5.0% of the survey population. 5.8% either said they don't evaluate Consumer Product safety or that it was not applicable.



**Figure 5.4.1 N=882; minimum clusters = 10 responses**

## 5.4.2 Internet-Connected Products – Evaluation of Risk

**Q12:** HOW DO YOU EVALUATE THE RISK OF HARM FOR THE TOP 3 INTERNET-CONNECTED PRODUCT CATEGORIES YOU SELECTED?

Of those that entered a comment, Carrot2 Workbench extracted 882 natural language responses. Similar to the responses for physical products, participants who use Internet-Connected products also commented that they scan through reviews (10.9%), read reports (3.1%), like Consumer Reports, read the news (4.2%), and ask people they trust for details about a product to determine if a product is safe to use. Only five people (0.6%) mentioned government resources and 5 (0.6%) people mentioned reviewing company policies or terms and conditions documents.



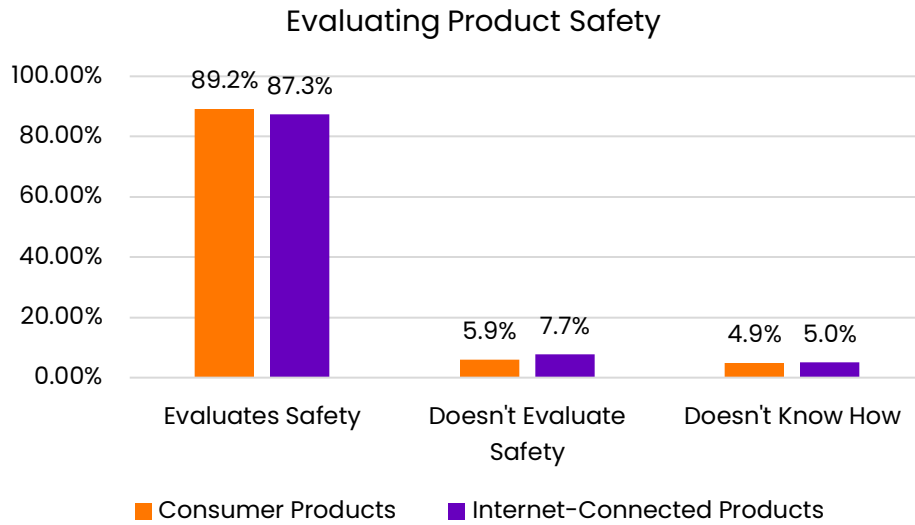
68 participants or 7.7% of the study population were unsure how to evaluate Internet-Connect Products. Those who said they don't evaluate the safety of Internet-Connected products or indicated it was not applicable to them included 65 people or 7.4% of the survey population.



**Figure 5.4.2 N=882; minimum clusters 10 responses**

### 5.4.3 Comparing Evaluation of Product Safety

Overwhelmingly, most participants indicate that they are evaluating product safety/risk for both Consumer and Internet-Connected Products. Though somewhat fewer respondents are evaluating product safety for Internet-Connected Products.



**Figure 5.4.3**

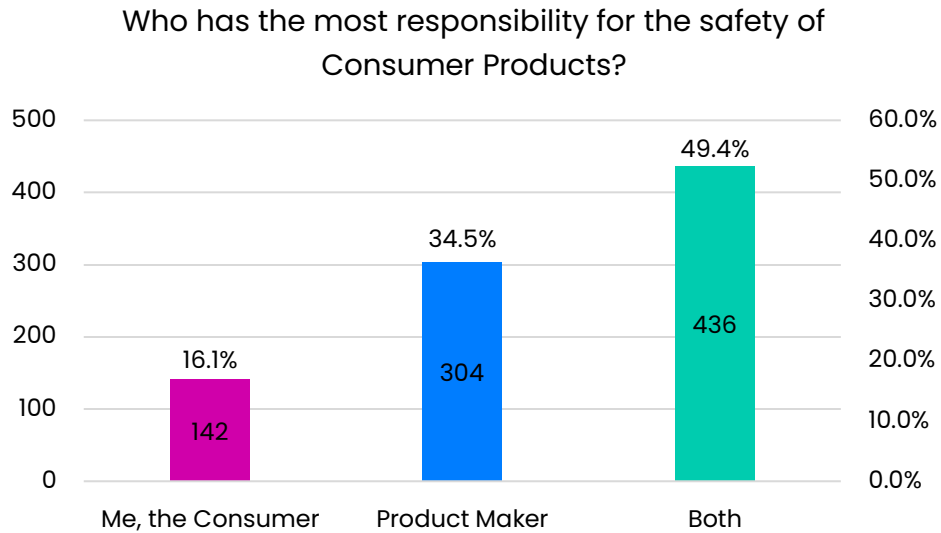
People appear to be using similar resources to assess product safety/risk, with the following prominent in both sets of product categories:

- Reviews,
- Consumer Reports,
- Friends.

## **5.5 Responsibility for Product Safety**

### **5.5.1 Consumer Products – Responsibility for Product Safety**

**Q5:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?  
(All Participants)



**Figure 5.5.1**

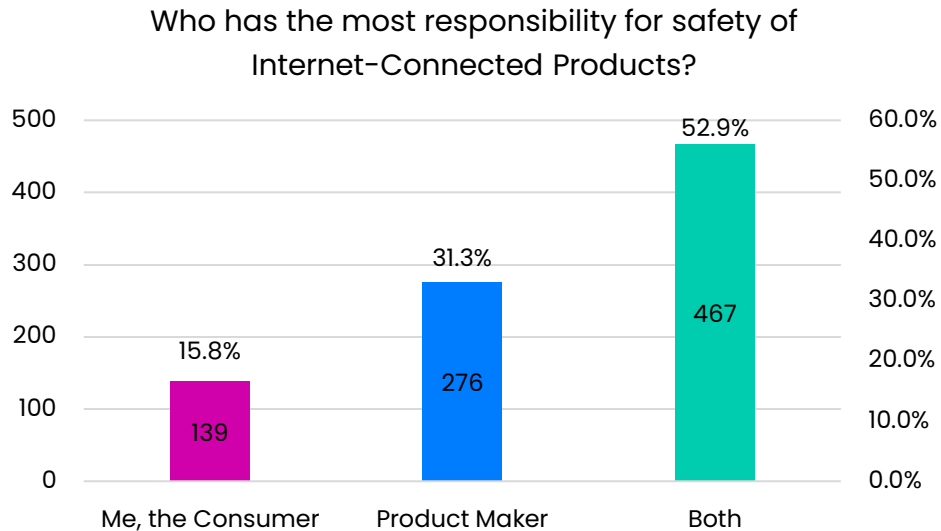
For Consumer Products, 16.1% selected "Me, The Consumer" has the most responsibility. 34.5% selected "The Product Maker" and 49.4% selected "Both" indicating that a large majority, or 83.9%, believes that either "The Product Maker" is more responsible or that it should be a shared responsibility. Many noted that consumers should use common sense, use the product responsibly and store it away from children. Some indicated that many of these product categories are subject to national and international safety regulations.

### 5.5.2 Internet-Connected Products – Responsibility for Product Safety

**Q11:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?

(All Participants)





**Figure 5.5.2**

For Internet-Connected Products, 15.8% selected "Me, The Consumer" as the party that has the most responsibility, slightly less than the 16.1% who selected "Me, The Consumer" for Consumer Products. 31.3% selected "The Product Maker" and 52.9% selected "Both", indicating that a large majority, or 84.2% believes that either "The Product Maker" is more responsible or that it should be a shared responsibility, similar to the number for Consumer Products in general (83.9% for "The Product Maker" plus "Both").

### 5.5.3 Comparison – Responsibility for Product Safety

Interestingly, respondents ascribed less responsibility for product safety to the Product Maker for Internet-Connected Products than for Consumer Products, 31.3% versus 34.5%.

At the same time, slightly fewer respondents felt that Me, the Consumer was responsible for Internet-Connected product safety (15.8% compared to 16.1%).

Thus, more consumers believe that both the consumer and the product maker share responsibility for product safety for Internet-Connected Products than for Consumer Products.

***An interesting follow-up research question would be to explore how well people think they understand safety risks in Internet-Connected Products. ISL hypothesizes that this will yield a finding the consumers largely do not understand safety risks in Internet-Connected Products. Coupled with the findings here, there is potentially a very interesting dynamic at play with software-driven technology.***

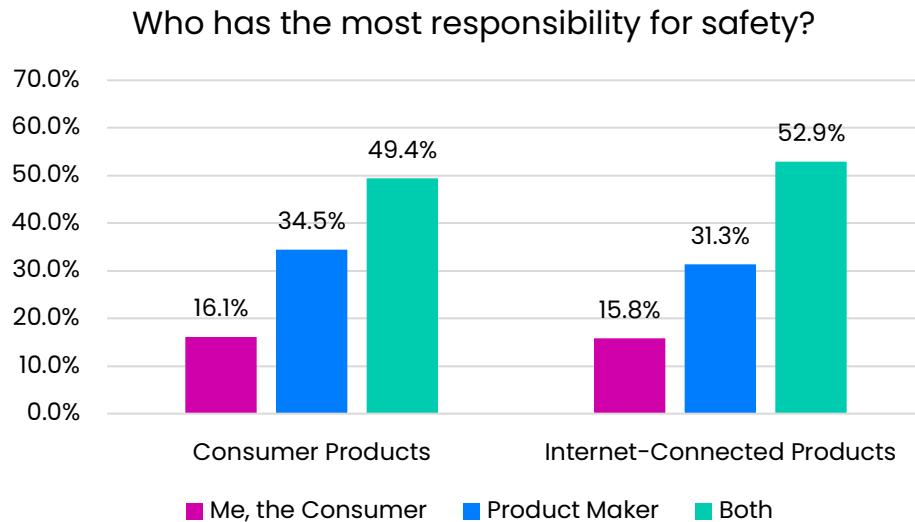


Figure 5.5.3

**Overall, ISL believes that consumers hold a mistaken – and unattainable – sense of responsibility for safety while using Internet-Connected Products. Consumers can't possibly assess the risks in Internet-Connected Products when product makers don't expose them, and in some cases don't even understand them themselves.**

#### 5.5.4 Different Responses Between Consumer and Internet-Connected Products

**Q13:** FOR THE QUESTION OF WHO HAS RESPONSIBILITY FOR THE SAFETY OF GENERAL CONSUMER PRODUCTS VERSUS INTERNET-CONNECTED PRODUCTS, IF YOU ANSWERED THESE QUESTIONS DIFFERENTLY, PLEASE EXPLAIN WHY.

(All Participants)

Most participants seemed to either not understand the question or not remember what they answered for Consumer Products. In retrospect, ISL researchers could have displayed the participant's earlier answer for them to recall.

One of the more illuminating responses to the question was:

*The risk of data damage or privacy invasion from the general consumer products listed is pretty much nonexistent. The risk of physical damage from internet-connected products is pretty much nonexistent except where they control items capable of physical damage, such as cars and appliances.*

This comment summarizes nicely a seemingly universal sentiment regarding Internet-Connected Products, as first mentioned in section 5.1.3.

Examining the differing answers paints an interesting picture.

Same/Different Answer for "Who's Responsible?"

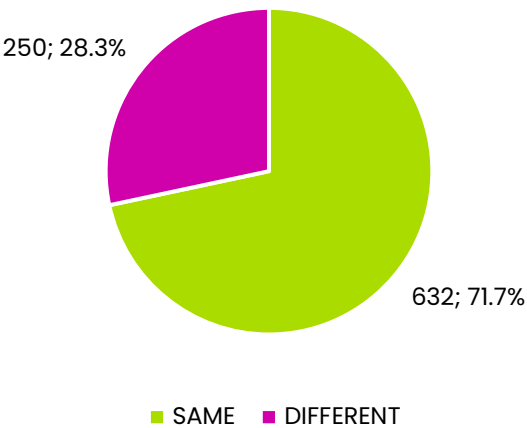


Figure 5.5.4

28.3% of participants answered the "who's responsible for product safety" differently for Consumer Products and Internet-Connected Products.

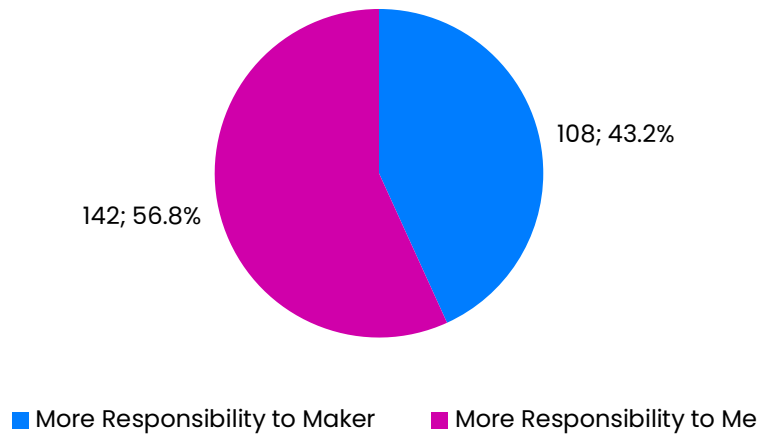
The differences in the two responses were categorized per Table 5.5.1.

Table 5.5.1

More Responsibility to Maker	More Responsibility to Me
Flipped from Both to Maker	Flipped from Both to Me
Flipped from Me to Maker	Flipped from Maker to Both
Flipped from Me to Both	Flipped from Maker to Me

For the participants who answered differently, the majority "flipped" towards holding the consumer *more* responsible for product safety for Internet-Connected Products than for Consumer Products. This was a key hypothesis ISL was testing with this survey. ISL suspected that consumers hold a double standard when it comes to responsibility for product safety for Internet-Connected Products. The findings in this section corroborate the reality of this disturbing double standard. People can't possibly adequately understand the risks of Internet-Connected Products, and yet they are more willing to accept responsibility for product safety. It's remarkable.

### Responsibility Flips From Consumer to Internet-Connected Products



**Figure 5.5.5**

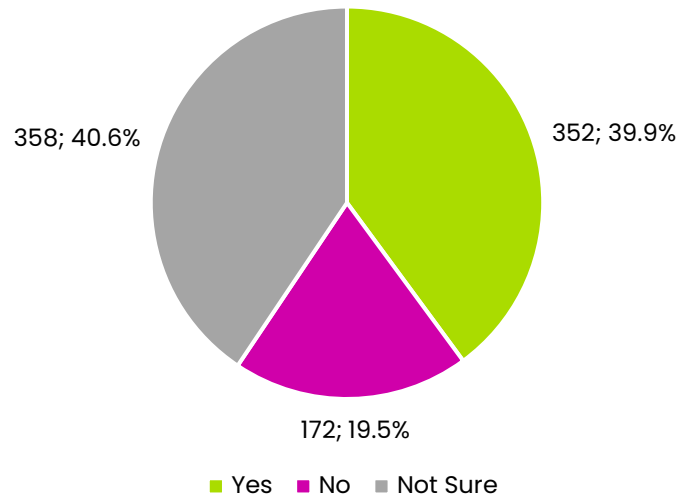
## 5.6 Product Safety Testing (Internet-Connected Products Only)

### 5.6.1 Customer Perception of Prevalence of Product Safety Testing

**Q15:** DO YOU THINK COMPANIES DO PRODUCT SAFETY TESTING ON THE INTERNET-CONNECTED PRODUCTS THAT THEY MAKE?

(All Participants)

Do you think companies do product safety testing on  
Internet-Connected Products?



**Figure 5.6.1**

Most people don't know if makers of Internet-Connected products are performing product safety testing. 39.9% of participants believe makers *are* performing product safety testing, and 19.5% believe makers are *not* performing product safety testing.

#### 5.6.1.1 Written Responses

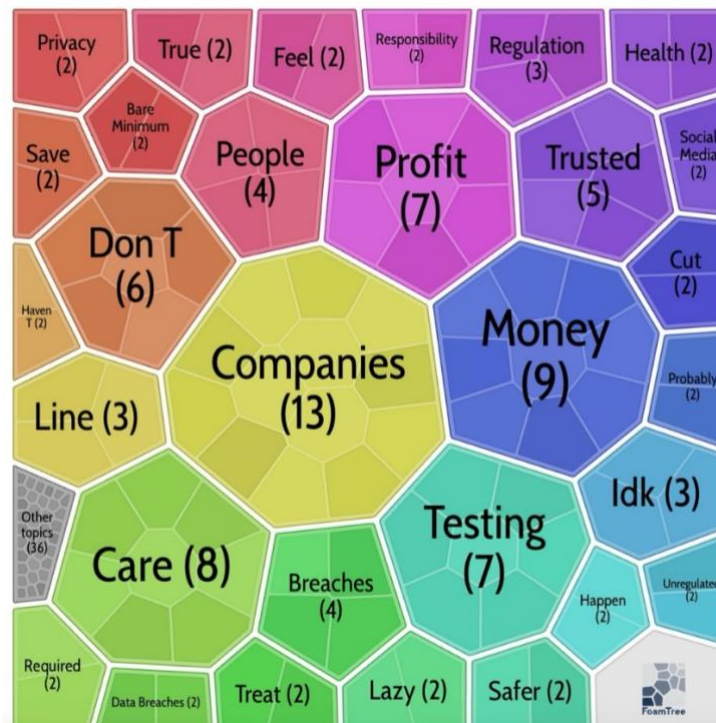
Participants were next asked to explain why they responded the way they did. From the responses, consumers seem to assume it was a requirement, and that it had to be happening, with language such as "Believe/Feel/Hope", "Required", "Law/Lawsuits", and "Assume".

Participants who responded "No", seemed to express cynicism over the corporate profit motive overriding concern for safety.

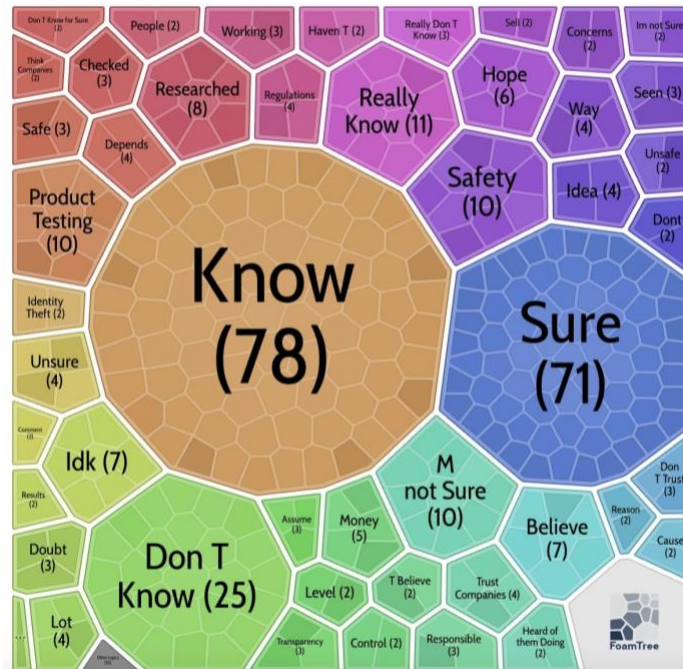
**Q15:** PLEASE TELL US WHY YOU ANSWERED THIS WAY?  
(All Participants)



**Figure 5.6.2 "Yes" Responses, n=213, minimum cluster = 1 response**



**Figure 5.6.3 "No" Responses, n=106, minimum cluster = 1 response**



**Figure 5.6.4 "Not Sure" Responses, n=266, minimum cluster = 1 response**

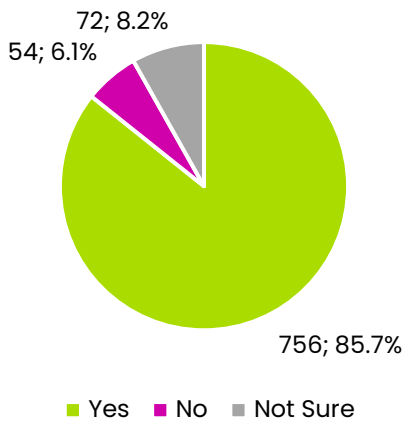
### 5.6.2 Customer Opinion if Vendors *Should* Perform Product Safety Testing

Participants were then asked whether the makers of Internet-Connected Products *should* perform product safety testing on their products. Respondents overwhelmingly (85.7% of respondents) thought that technology makers should perform product safety testing on their products.

**Q16:** SHOULD PRODUCT MAKERS TEST THE INTERNET-CONNECTED PRODUCTS THAT THEY MAKE?  
(All Participants)



Should companies perform product safety testing  
on Internet-Connected Products?



**Figure 5.6.5**

### 5.6.2.1 Written Responses

Participants were asked to elaborate on why they responded the way they did to the previous question.

**Q16:** PLEASE TELL US WHY YOU ANSWERED THIS WAY.



**Figure 5.6.6 "Yes" Responses, n=488, minimum cluster = 10 responses**





Figure 5.6.7 "No" Responses, n=24, minimum cluster = 1 response

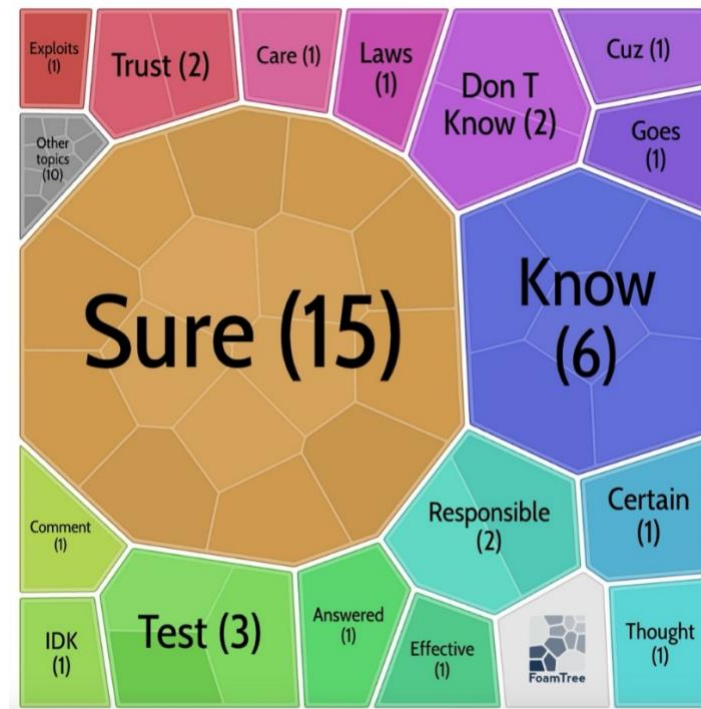


Figure 5.6.8 "Not Sure" Responses, n=42 minimum cluster = 1 response

## 5.7 Impact of Survey on Participants

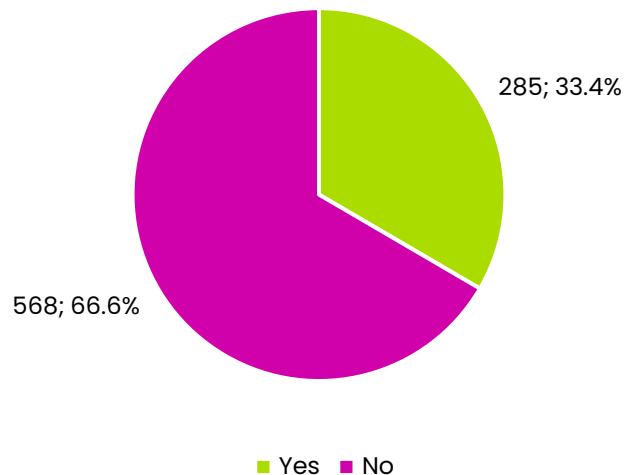
### 5.7.1 Survey Impact on Participants' Ideas About Product Safety

Finally, participants were asked if their participation in the survey changed their thinking at all about product safety. The researchers wondered if the survey itself might get people thinking differently about product safety for Internet-connected products.

About a third of participants indicated that participation in the survey alone impacted their perceptions and understanding of product safety testing. In retrospect, the question should have pin-pointed "product safety testing for Internet-Connected Products".

**Q17:** HAS THIS SURVEY CHANGED ANYTHING ABOUT YOUR PERCEPTION AND UNDERSTANDING OF PRODUCT SAFETY TESTING?  
(All Participants)

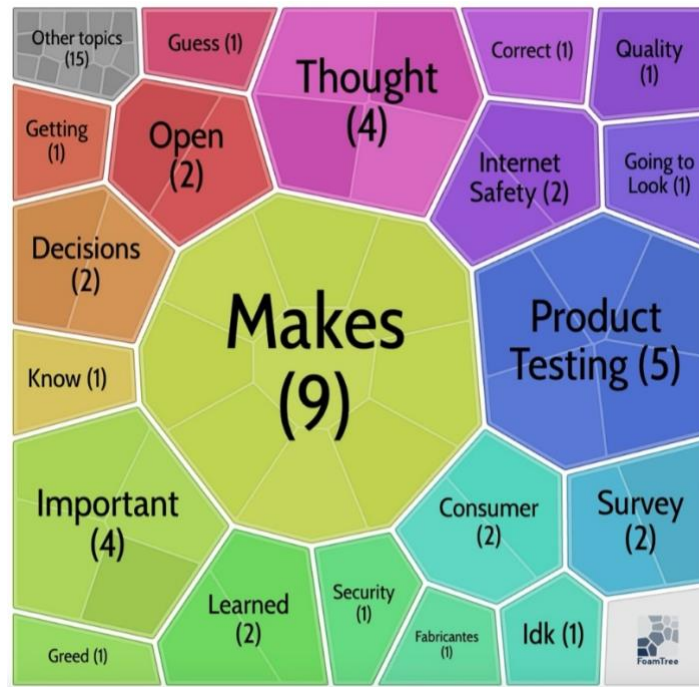
Has this survey changed anything about your perception  
and understanding of product safety testing?



**Figure 5.7.1**

#### 5.7.1.1 Written Responses

**Q17:** If Your Opinion Changed, Can You Explain Why?  
(Participants who responded "Yes" to previous question)



**Figure 5.7.2 "Yes" Responses, n=48, minimum cluster = 1 response**



**Figure 5.7.3 "No" Responses, n=40, minimum cluster = 1**

## 6 Demographic Analysis

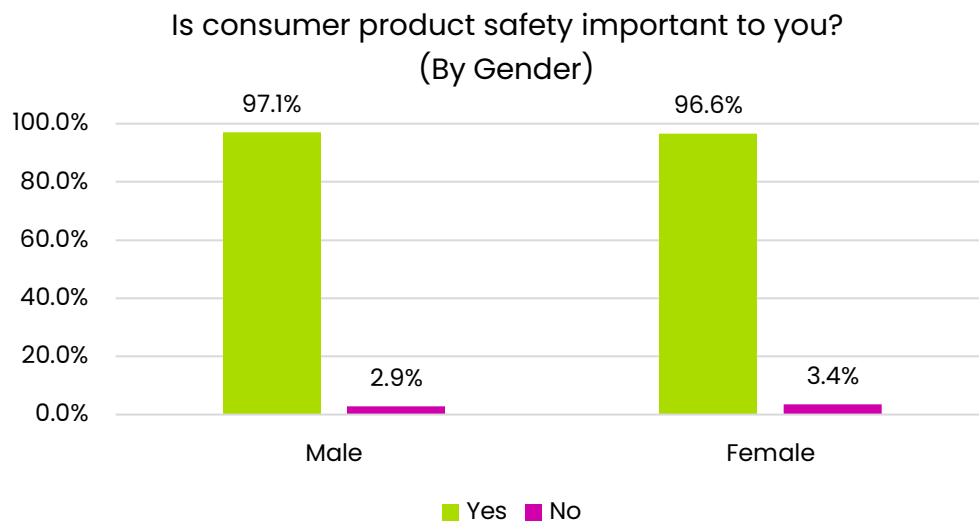
This section analyzes select survey questions along demographic groups including gender, income, age, race and geographic region. Responses are also analyzed by type of device used, keeping in mind that this is the device used to complete the survey, and may or may not be the same device the participant uses for other uses.

### 6.1 Importance of Product Safety by Demographic

#### 6.1.1 By Gender

##### 6.1.1.1 Consumer Product Safety Importance

**Q1:** IS CONSUMER PRODUCT SAFETY IMPORTANT TO YOU?  
(By Gender)

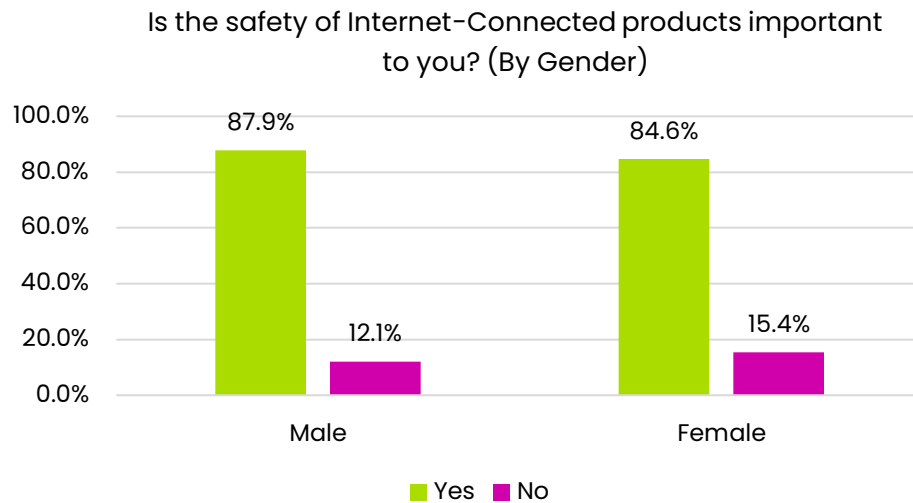


**Figure 6.1.1**

Male participants were slightly more likely to select "Yes" to the question of whether product safety is important than Female participants. SurveyMonkey also has the categories "Nonbinary" and "A gender not listed" but no survey responses were received from anyone identifying this way.

##### 6.1.1.2 Internet-Connected Product Safety Importance

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(By Gender)



**Figure 6.1.2**

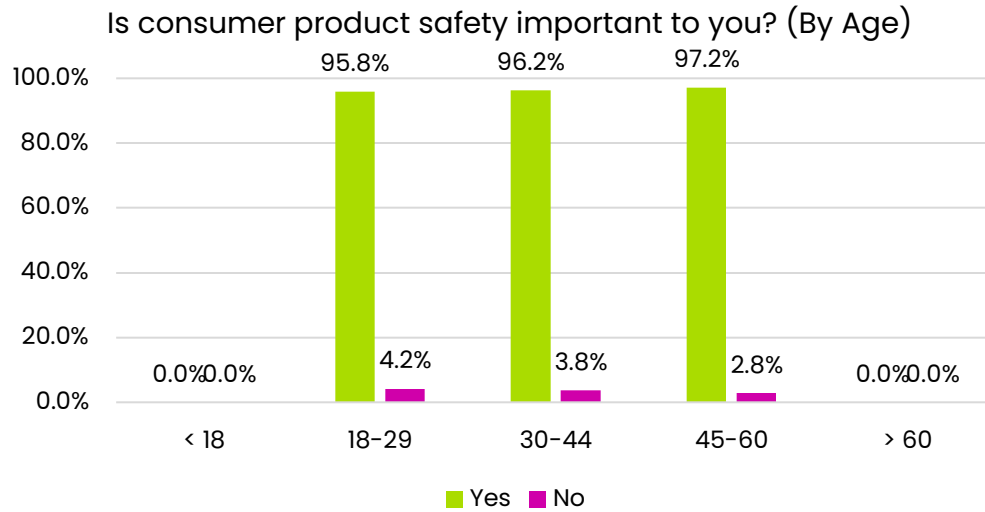
Both Male and Female participants were less likely to say the safety of Internet-Connected Products is important, versus physical Consumer Products. 87.9% of Male participants entered “Yes” for Internet-Connected Products versus 97.1% for physical products. Meanwhile, 84.6% of Female participants entered “Yes” for Internet-Connected Products versus 96.6% for physical products.

Male participants were slightly more likely to find Internet-Connected Product Safety to be important than Female participants. However, the drop in concern versus physical products is greater for Female participants. Interestingly, none of the comments specifically mentioned gender as a reason for their concern.

## 6.1.2 By Age

### 6.1.2.1 Consumer Product Safety Importance

**Q1:** IS CONSUMER PRODUCT SAFETY IMPORTANT TO YOU?  
(By Age)

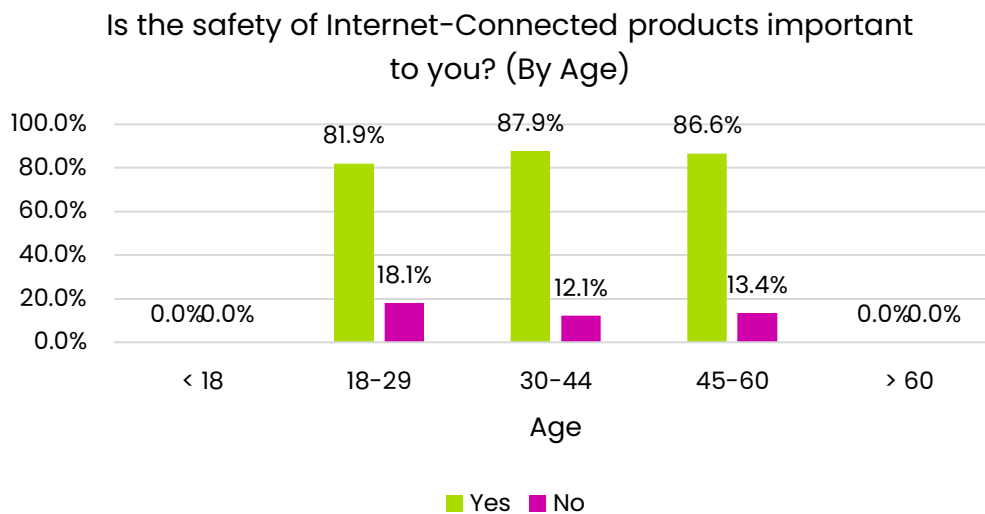


**Figure 6.1.3**

Older participants were slightly more likely to enter “Yes” with the 18–29 age group at 95%, 20–44 age group at 96.2% and 45–60 age group at 97.2%. There were no participants in the under 18 or over 60 age groups.

### 6.1.2.2 Internet-Connected Product Safety Importance

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(By Age)



**Figure 6.1.4**

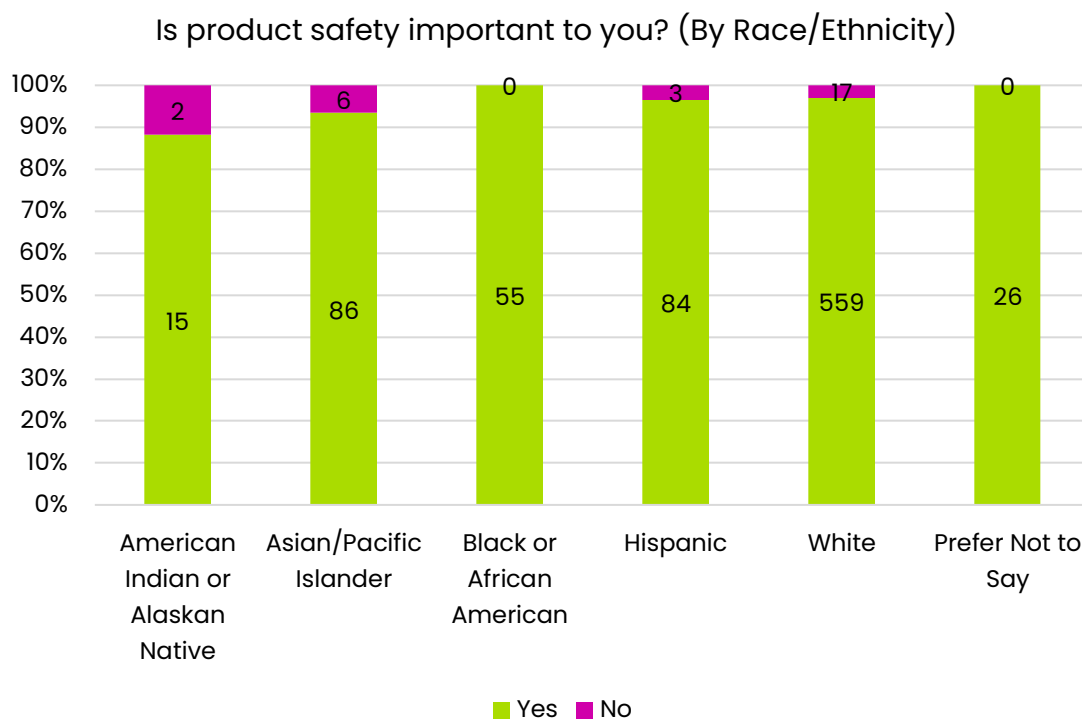
18-29 year-olds were the most likely to say that product safety of Internet-Connected Products was *not* important at 18.1% of respondents in that segment, nearly 14 points higher than for Consumer Products. Like gender, there were no comments that specifically mentioned age or aging, although 18 comments by 9 female and 9 male participants did contain concerns about children being exposed.

**Thus, the youngest age segment in the research (18-29yo) seems most inured to safety risks in Internet-Connected Products. Is this a trend based on the comfort of growing up with technology?**

### 6.1.3 By Race/Ethnicity<sup>11</sup>

#### 6.1.3.1 Consumer Product Safety Importance

**Q1:** IS CONSUMER PRODUCT SAFETY IMPORTANT TO YOU?  
(By Race/Ethnicity)



**Figure 6.1.5**

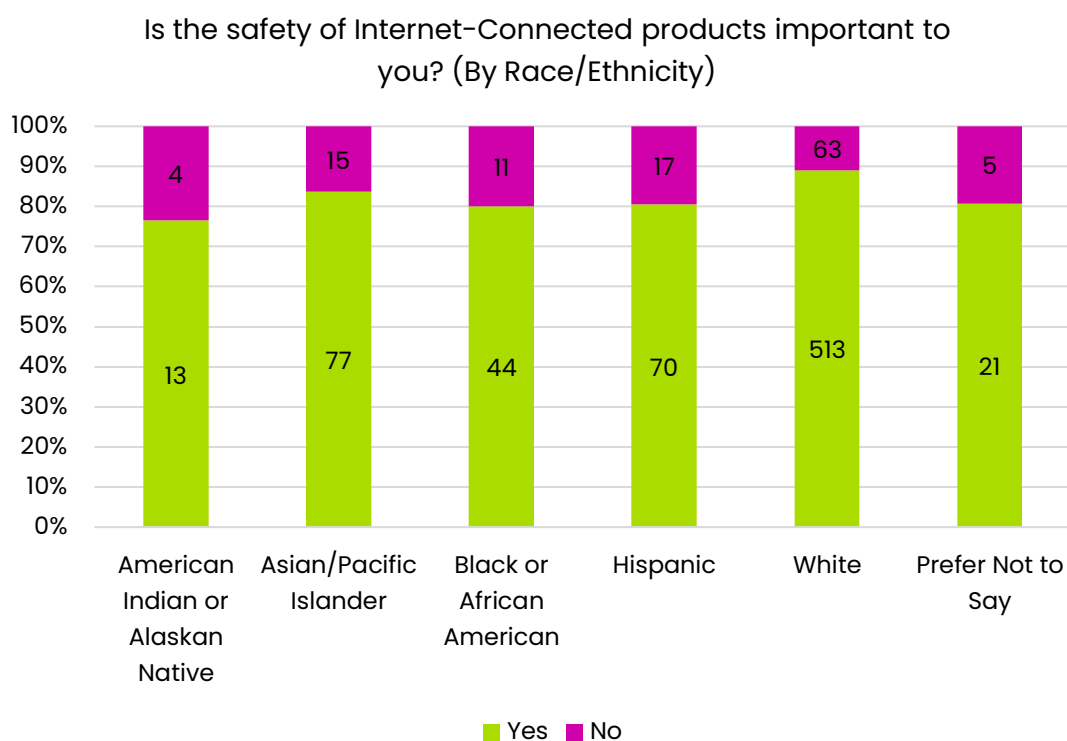
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<sup>11</sup> Note that this is the language SurveyMonkey uses with participants.

The survey composition was just under two thirds (65.3%) white participants with the remaining race/ethnicity categories making up 34.7% of responses. Still, all race/ethnicity categories answered "Yes" at a rate well over 90%, except the American Indian category (88%). This represents 1.9% of the total sample, or 17 participants, which is not large enough to make a generalization about this group. Every Black participant (55 people or 6.2% of the total) entered Yes. (Figure 6.1.5).

### 6.1.3.2 Internet-Connected Product Safety Importance

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(By Ethnicity)



**Figure 6.1.6**

All Race/Ethnicity categories answered "Yes" to the importance of Internet-Connected Product Safety at a rate above 80.0%, except the American Indian category (76.5%). Again, this group was comprised of only 17 participants, which is not enough people to make a generalization, but it is striking. White participants had the highest "Yes" response rate at 89.1%, followed by 83.7% of Asian/Pacific Islanders. In contrast to the 100% of Black or African American participants who entered "Yes" to the importance of Consumer Product safety, only 80% entered "Yes" to the importance of Internet-Connected Product safety. The number of "Yes" responses



among Hispanic participants, 80.5%, was similar to Black or African Americans’ and represented a noticeable difference from the Hispanic “Yes” rate of 96.6% who indicated that Consumer Product safety was important. All demographic categories of participants answered "Yes" at a significantly lower rate for Internet-Connected Products than for Consumer Products.

6.1.4 By Region

6.1.4.1 Consumer Product Safety Importance

**Q1:** IS CONSUMER PRODUCT SAFETY IMPORTANT TO YOU?  
(By Region)

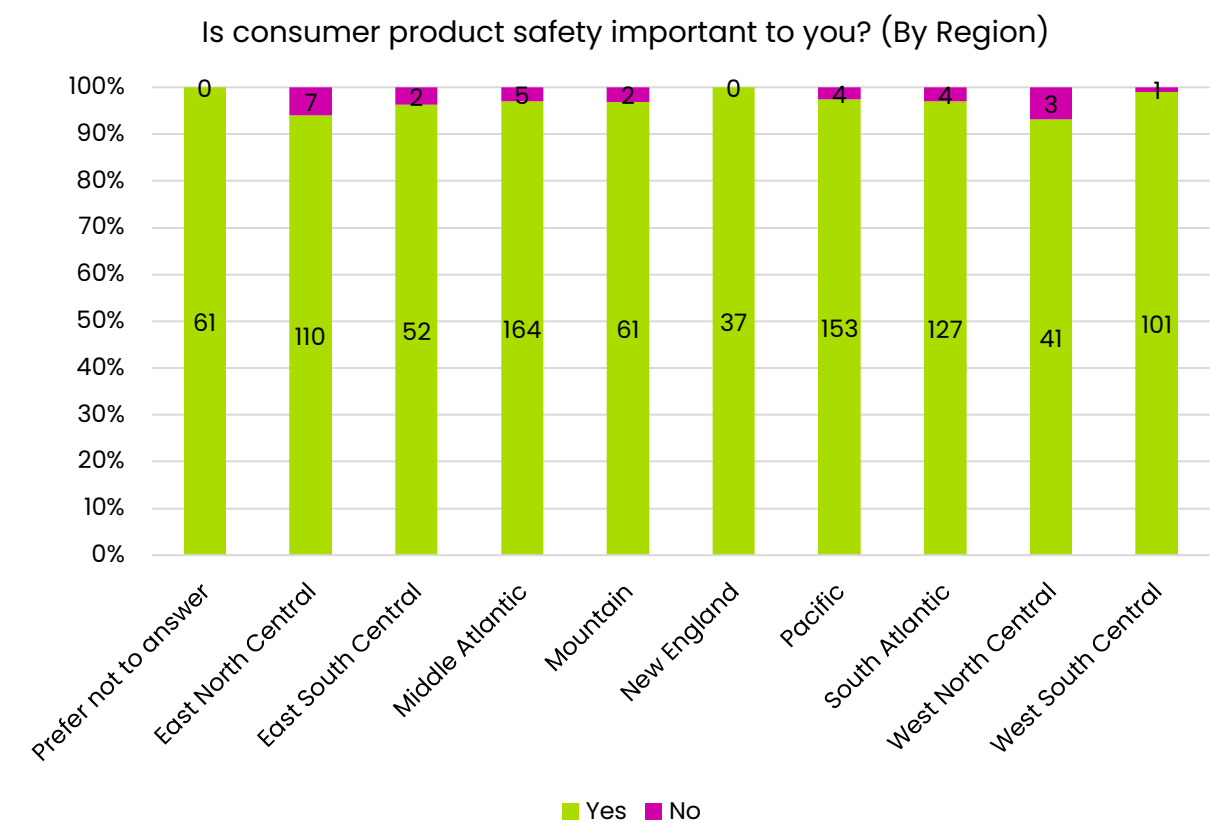
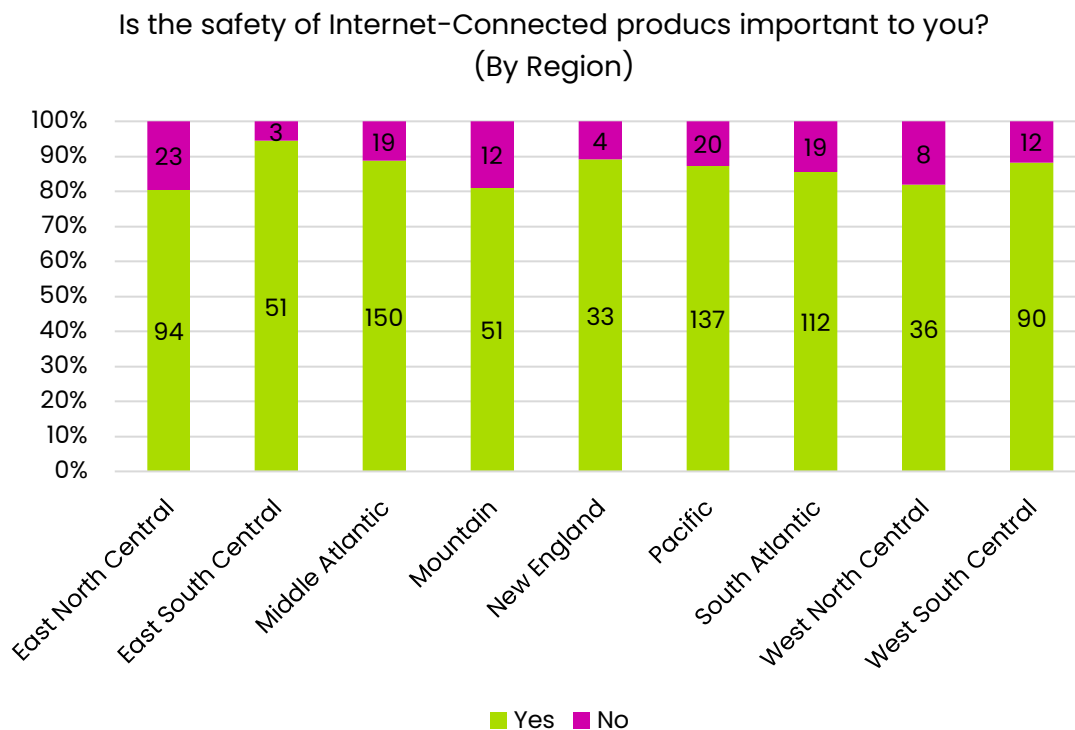


Figure 6.1.7

All categories of participants answered Yes at a rate of over 90%. For U.S. regions, the highest response rate for “Yes” (Consumer Product Safety is important) was the Northeast with 100%, West North Central region had 93.2% “Yes” and East North Central had 94.0% “Yes”. In the New England Group, 100% entered “Yes”.

### 6.1.4.2 Internet-Connected Product Safety Importance

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(By Region)



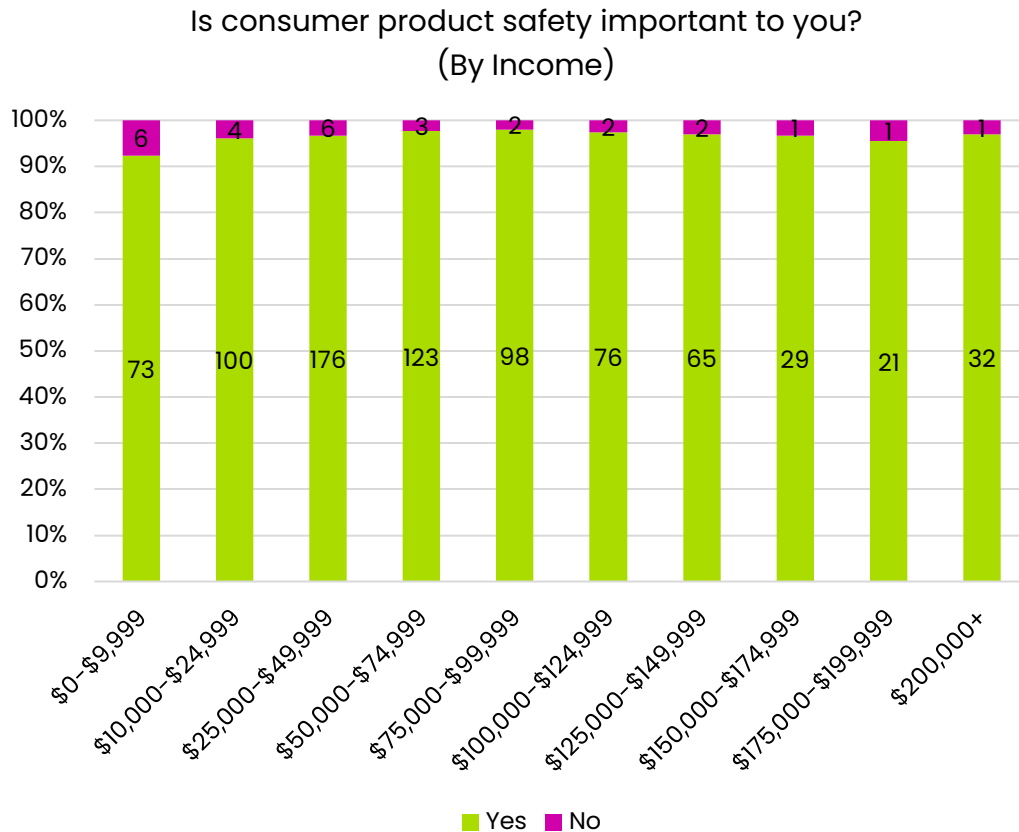
**Figure 6.1.8**

By region, the highest response rate for “Yes” (Internet-Connected product safety is important) was the East South Central with 94.4% answering “Yes”, followed by the Mid Atlantic with 88.8% answering “Yes”. The lowest rate was 81.0% “Yes” for the Mountain region.

### 6.1.5 By Income

#### 6.1.5.1 Consumer Product Safety Importance

**Q1:** IS CONSUMER PRODUCT SAFETY IMPORTANT TO YOU?  
(By Income)

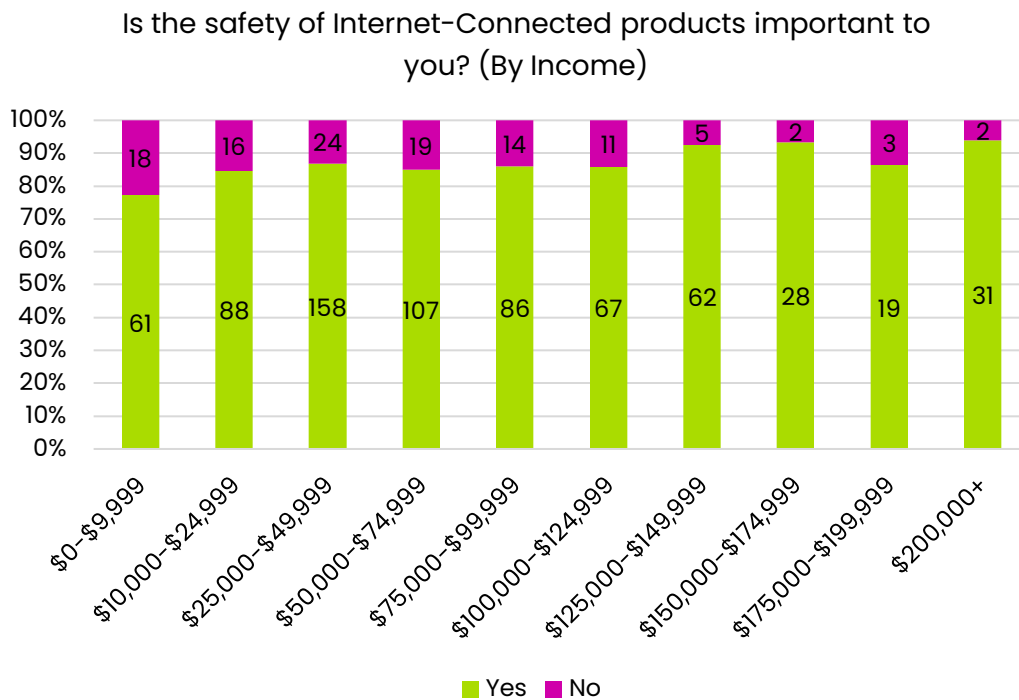


**Figure 6.1.9**

The response rate for "Yes" ranged from 92.4% for the lowest income group, \$0-\$9,999 per year to 100% of the "Prefer Not to Answer" category. All other income ranges answered "Yes" at a rate between 93% and 98%.

### 6.1.5.2 Internet-Connected Product Safety Importance

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(By Income)



**Figure 6.1.10**

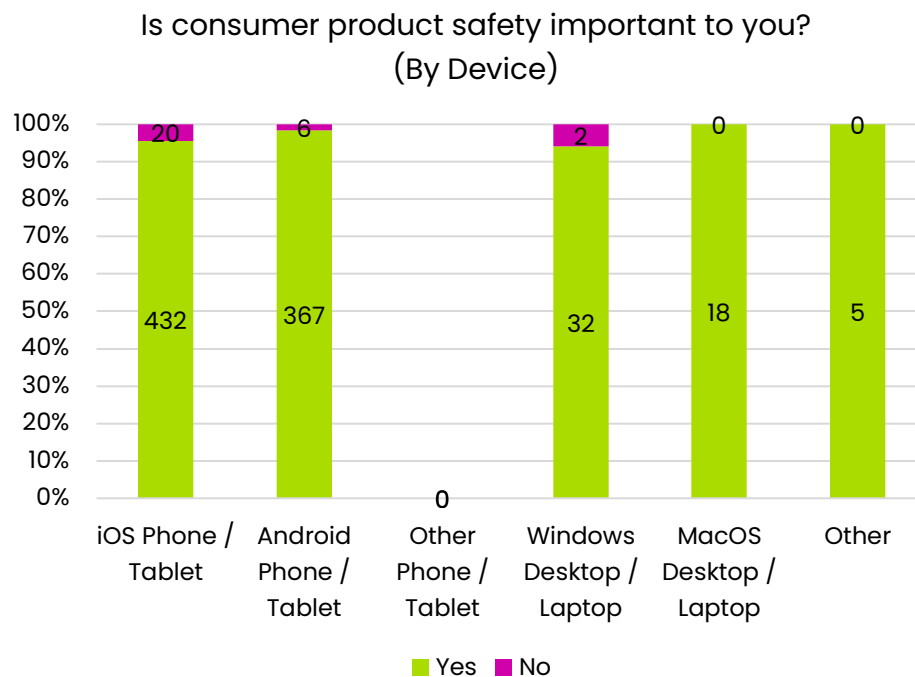
In contrast to the earlier question, “Is the Safety of Consumer Products important to you?” where lower and higher income groups had nearly the same rate of “Yes” responses (between 95.5% and 98.0%), the response rate is notably different for Internet-Connected Products, particularly for lower income groups. In income groups below \$125,000 84.6% to 86.8% answered “Yes”, while income groups above \$125,000, between 86.4 % and 93.9% responded “Yes”, with only one group, \$175,000-199,000 having a “Yes” response rate (86.4%) below 90%, but still higher than the lower income groups. The rate was 9.9% to 15.2% lower for Internet-Connected Product safety in income groups under \$125,000 than for Consumer Products generally, and 3.0% to 9.1% less in the over \$125,000 groups.

**Minority and lower-income respondents expressed lower concern for Internet-Connected product safety than white, higher-income respondents. ISL hypothesizes that minority and lower-income groups may have less access to educational resources about technology risk, but this needs further research.**

## 6.1.6 By Technology/Device Used

### 6.1.6.1 Consumer Product Safety Importance

**Q1:** IS CONSUMER PRODUCT SAFETY IMPORTANT TO YOU?  
(By Technology/Device Used)

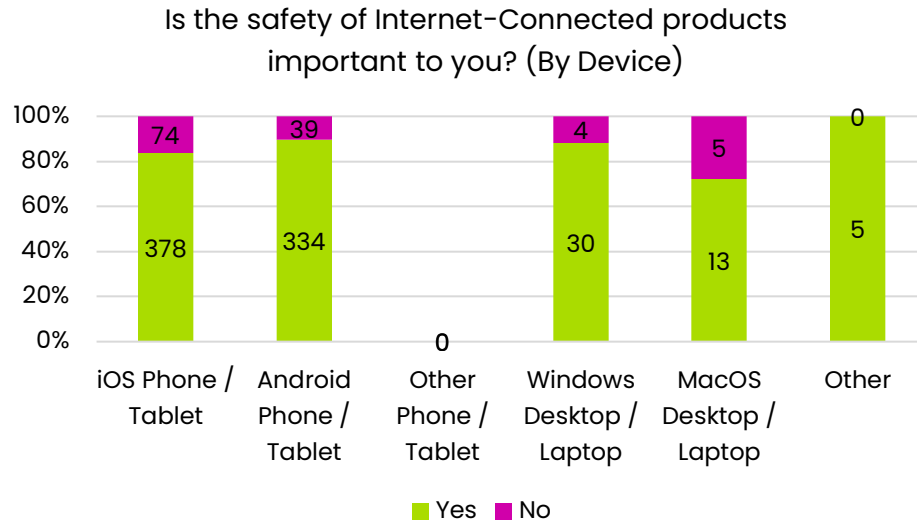


**Figure 6.1.11**

By device, 90.6% of respondents used either an iOS Phone/Tablet (95.6%) or an Android Phone/Tablet (98.4%). Of these 95.6% iOS Phone/Tablet users and 98.4% Android Phone/Tablet indicated that Consumer Product Safety is important. 94.1% of those using a Windows desktop indicated Yes as did 100% of those using MacOS desktop.

### 6.1.6.2 Internet-Connected Product Safety Importance

**Q7:** IS THE SAFETY OF INTERNET-CONNECTED PRODUCTS IMPORTANT TO YOU?  
(By Device)



**Figure 6.1.12**

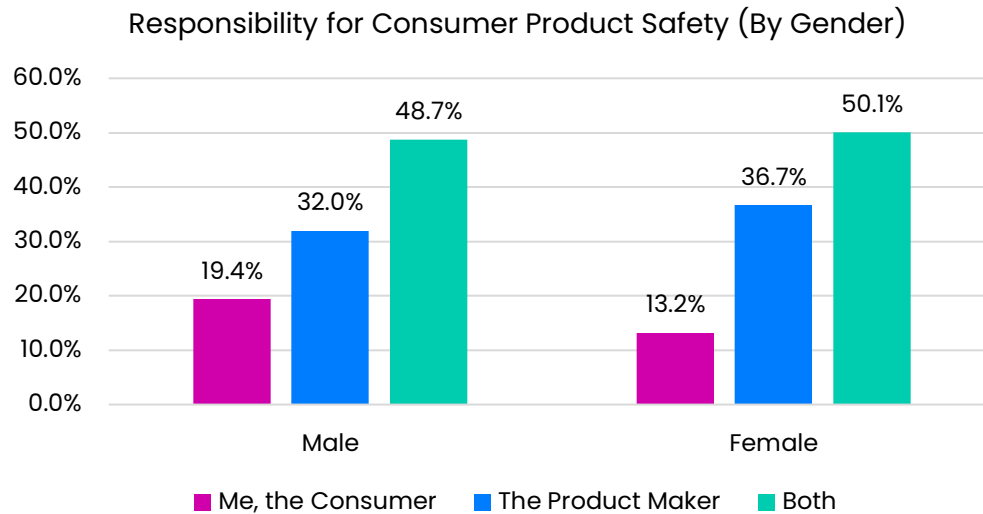
By device, Android and Windows Desktop users responded “Yes” at higher rates when asked if Internet-Connected product safety is important, with 89,5% of those who used an Android Phone/Tablet and 88.2% of those who used a Windows machine. A smaller number, 83.6%, of iOS Phone/Tablet users indicated that Internet-Connected Product Safety is important. as did only 72.2% of those using MacOS desktop, the lowest for devices. *This is interesting since Apple products heavily promote their privacy and "safety" capabilities.*

## 6.2 Responsibility for Consumer Product Safety by Demographic

### 6.2.1 By Gender

#### 6.2.1.1 Responsibility for Consumer Product Safety

**Q5:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?  
(By Gender)

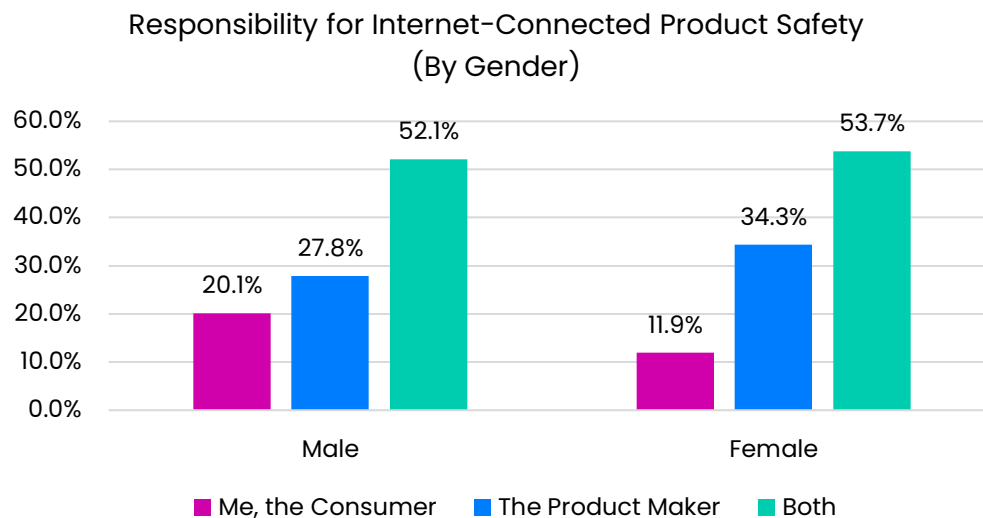


**Figure 6.2.1**

There is a slight gender difference, with Male participants more likely to accept responsibility for the safety of Consumer Products ("Me, The Consumer" - 19.4%) than female participants ("Me, The Consumer" - 13.2%).

### 6.2.1.2 Responsibility for Internet-Connected Product Safety

**Q11:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?  
(By Gender)



**Figure 6.2.2**

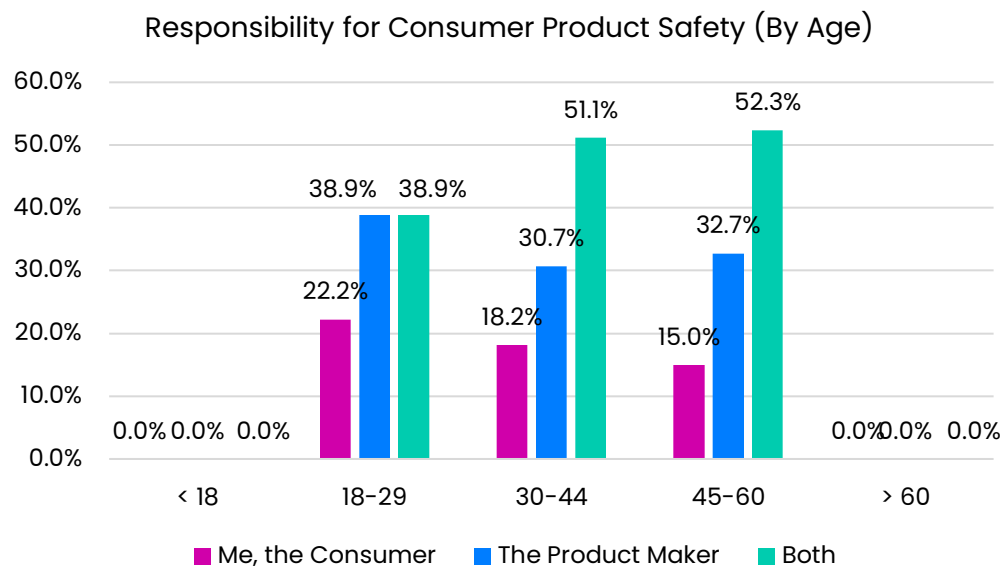
In this case there is a notable gender difference. While both groups were less likely to indicate that "The Product Maker" is responsible for Internet-Connected Product Safety versus other types of products, The difference for Male participants was greater for "The Product Maker" – 27.8% for Internet Connected Products versus 32.0% for other Consumer Products. Female responses for this item were 34.3% for Internet-Connected Products and 36.7% for Consumer Products.

Male participants more likely to accept responsibility for the safety of Internet-Connected Products ("Me, The Consumer" – 20.1% versus 19.4% for Consumer Products). Female participants were less likely to take responsibility for Internet-Connected Product Safety. Male responses for "Me, The Consumer" was 11.9% versus 13.2% for Consumer Products. In fact, the Gender difference is greater for Internet-Connected Product Safety compared to Consumer Product Safety. While both gender groups had a lower number of participants who indicated that "The Product Maker" was responsible for Internet-Connected Product Safety than for Consumer Product Safety, the difference for Male participants was noticeably greater.

## 6.2.2 By Age

### 6.2.2.1 Responsibility for Consumer Product Safety

**Q5: WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?**  
(By Age)



**Figure 6.2.3**

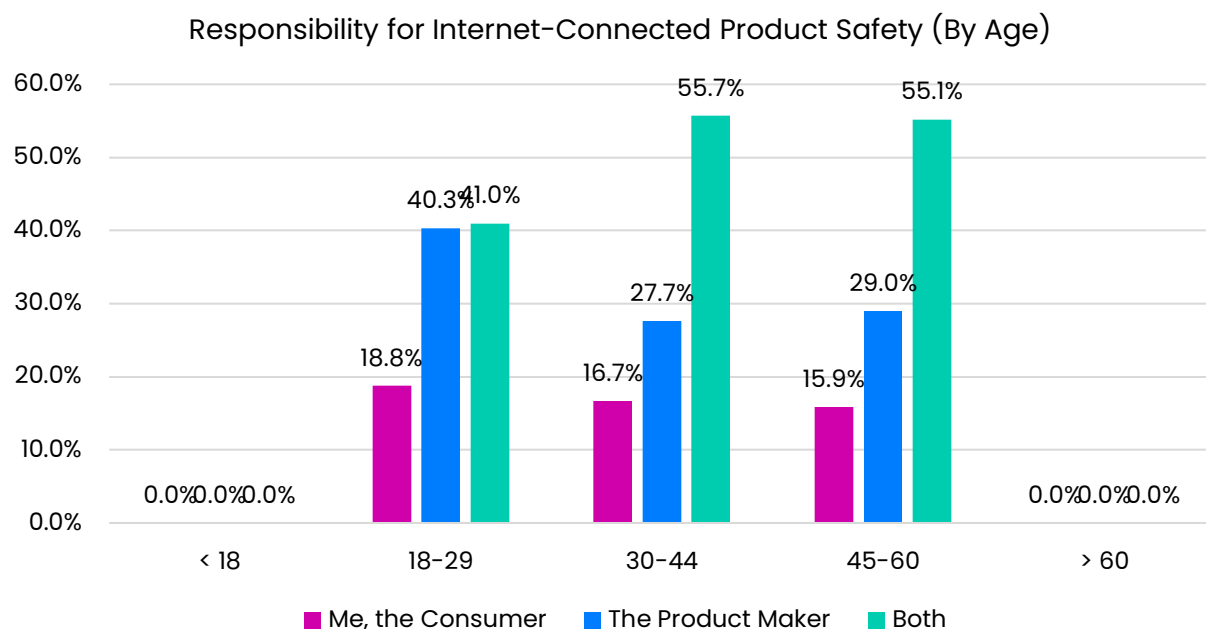


There appears to be a trend that the older the respondent, the less likely they hold either "Me, the Consumer" or "The Product Maker" responsible, and the more likely they are to believe "Both" are responsible.

While the same percentage of people in the 18-29 age group selected "The Product Maker" (38.9%) and "Both" (38.9%), over half of the 30-44 age group and the 45-60 age group selected "Both". This may indicate a realization with age and/or experience that the consumer must take some responsibility for safety rather than rely on the producers to do so.

### 6.2.2.2 Responsibility for Internet-Connected Product Safety

**Q11: WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?**  
(By Age)



**Figure 6.2.4**

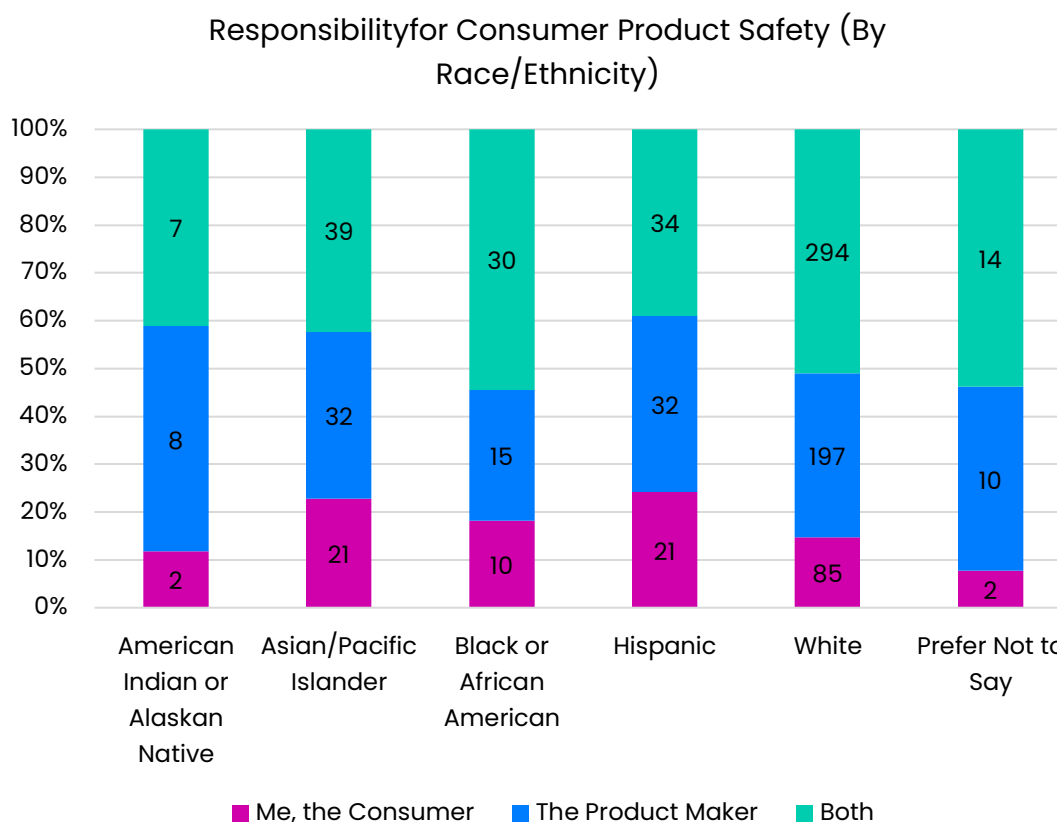
A similar pattern exists for Internet-Connected Products, with generally decreasing "Me, the Consumer" and "The Product Maker" responsibility and increasing percentage of "Both" as age increases. Participants in the 30-40 and 45-50 age groups had similar attitudes about the importance of Internet-Connected Product safety. In these groups a clear majority, 55.7% for age 30-44 and 55.1% for ages 45-60 answered that both consumers and product makers have the most responsibility. Only 16.7% of those aged 30-44 and 15.9% of 45-60 year olds selected "Me, The

Consumer". Participants in the younger group, aged 18–29 were slightly more likely to select "Me, The Consumer" (18.8%). **But the split between "The Product Maker" (40.3%) and "Both" (44.0%) was more even, suggesting that overall younger participants were less likely to take personal responsibility for safety.**

### 6.2.3 By Ethnicity

#### 6.2.3.1 Responsibility for Consumer Product Safety

**Q5: WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?**  
(By Race/Ethnicity)



**Figure 6.2.5**

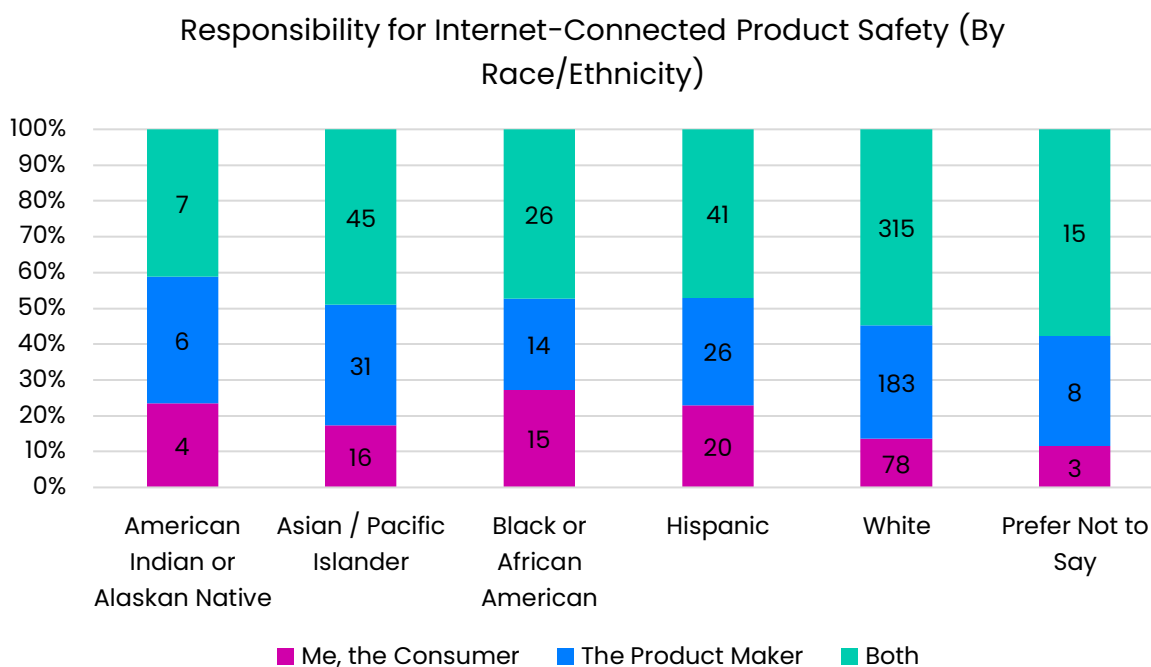
When it comes to the responsibility for Consumer Product Safety, both white participants and Black or African American participants had a majority who felt it was a shared responsibility. For white participants, 51% indicated "Both", and for Black or African Americans the number was 54.5% (similar to the 53.8% of those who selected "Prefer Not to Say" to the ethnicity profile question). For other ethnic groups, the share of those indicating "Both" dropped to 39.1% for Hispanic participants, 41.2% for American Indian or Alaskan Natives and 42.4% for Asian/Pacific Islanders.

A minority of participants were willing to accept personal responsibility for Consumer Product safety, with 11.8% of American Indian or Alaskan Natives, 14.8% of white and 18.2% of Black or African American participants selecting "Me, The Consumer". Asian/Pacific Islanders (22.8%) and Hispanic (24.1%) participants selected "Me, The Consumer" at a higher rate than the other groups, but still represented less than a quarter who accepted personal responsibility for safety, as the consumer.

If not sharing responsibility, all groups, were more likely to attribute responsibility to "The Product Maker" versus to "Me, The Consumer". American Indian or Alaskan Native group was the only ethnicity that had a higher number of responses for "The Product Maker" (47.1%) than for "Both" (41.2%).

### 6.2.3.2 Responsibility for Internet-Connected Product Safety

**Q11: WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?**  
(By Race/Ethnicity)



**Figure 6.2.6**

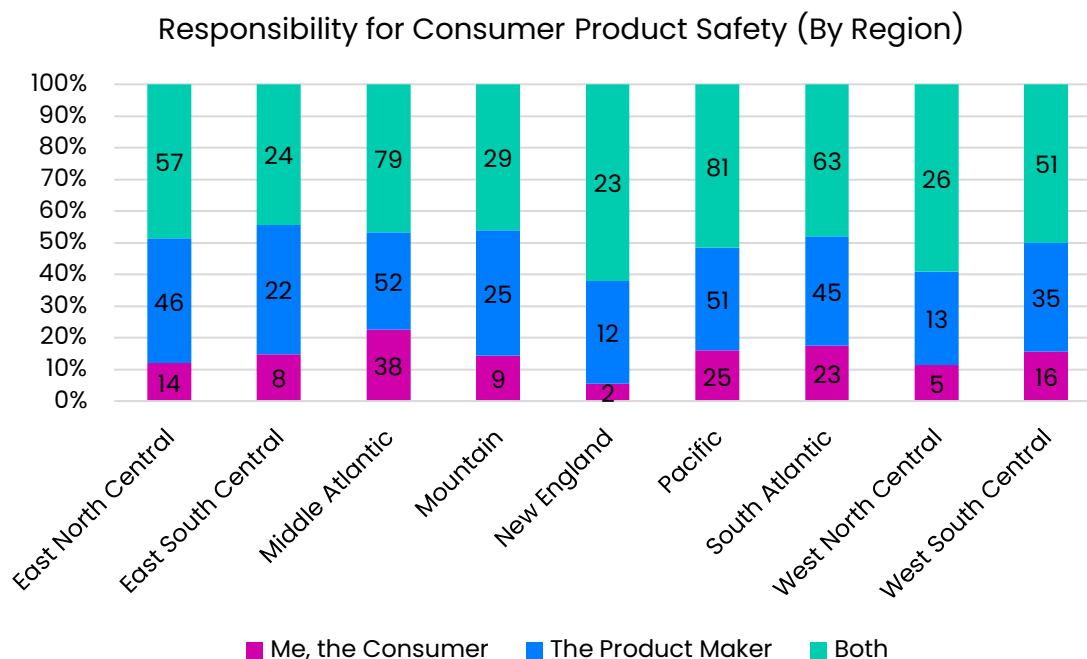
When it comes to the responsibility for Consumer Product Safety, more than half of white participants or 54.7% entered "Both", with 31.8% attributing responsibility to "The Product Maker" and only 13.5% entering "Me, The Consumer". In contrast, for all other ethnic groups, less than half considered the responsibility shared with percentages

selecting "Both" ranging from 41.2% to 48.9%. If not sharing responsibility, these groups, with the exception of Black or African American participants, were more likely to attribute responsibility to "The Product Maker" versus to "Me, The Consumer". Again, non-White/Caucasian participants represented a very small proportion of the study population, so more research would be needed to understand if the attitudes of Black or African American participants is significant.

## 6.2.4 By Region

### 6.2.4.1 Responsibility for Consumer Product Safety

**Q5:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?  
(By Region)



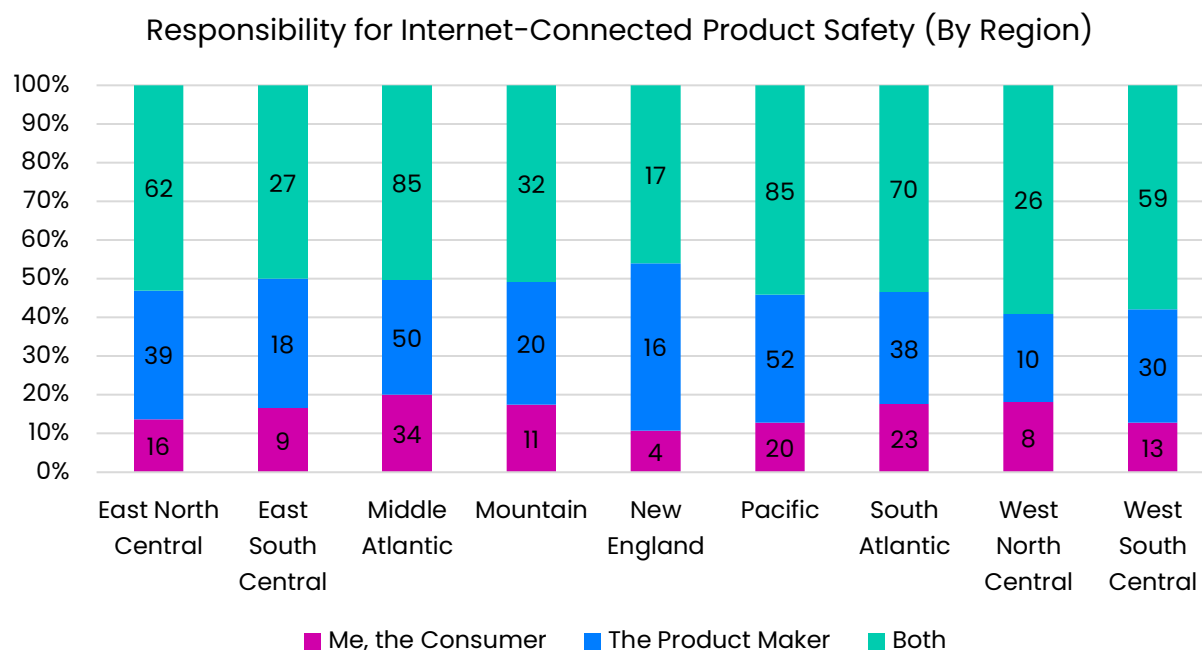
**Figure 6.2.7**

By region, the Middle Atlantic was most likely to accept that "Me, The Consumer" has the most responsibility for Internet-Connected Product Safety with 22.5% of 169 responses. Conversely, Northeast participants were least likely to accept "Me, The Consumer" has the most responsibility with only 5.4% selecting that option. West North Central was slightly less likely than average to select "Me, The Consumer" (11.4%) and East North Central was slightly more likely than average to select "Me, The Consumer" (12.0%).

### 6.2.4.2 Responsibility for Internet-Connected Product Safety

**Q11:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?

(By Region)



**Figure 6.2.8**

In the breakdown by Region, a similar pattern emerged for assigning responsibility for Internet-Connected Product Safety. All groups had the lowest number of responses for "Me, The Consumer" going up by an average of 16.2% to "The Product Maker" and then another jump to "Both" by an average rate of 21.0%.

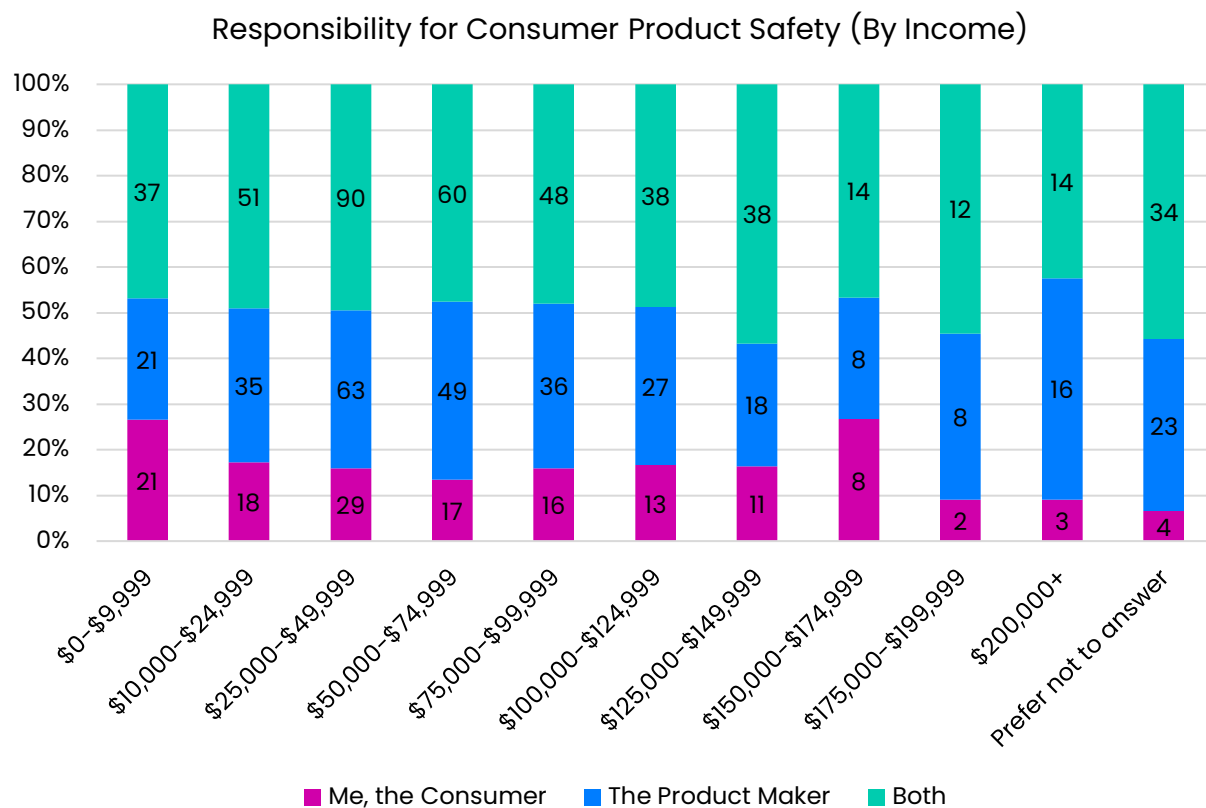
"Me, The Consumer" responses ranged from 10.8% (New England) to 20.1% (Middle Atlantic). The response rate for "The Product Maker" ranged from 22.7% (West North Central) to 43.2% (New England), with all regions except New England selecting "The Product Maker" less than 33.3% of the time.

The responses for "Both" ranged from 45.9% in the New England region to 57.8% in West South Central. New England only had a 2.7% difference in responses for "The Product Maker" (43.2%) and "Both" (45.9%). All other regions had "Both" responses that were above 50%. "The Product Maker" and "Both" ranged from 16.7% to 36.4% with the highest of 59.1% in the West North Central region.

## 6.2.5 By Income

### 6.2.5.1 Responsibility for Consumer Product Safety

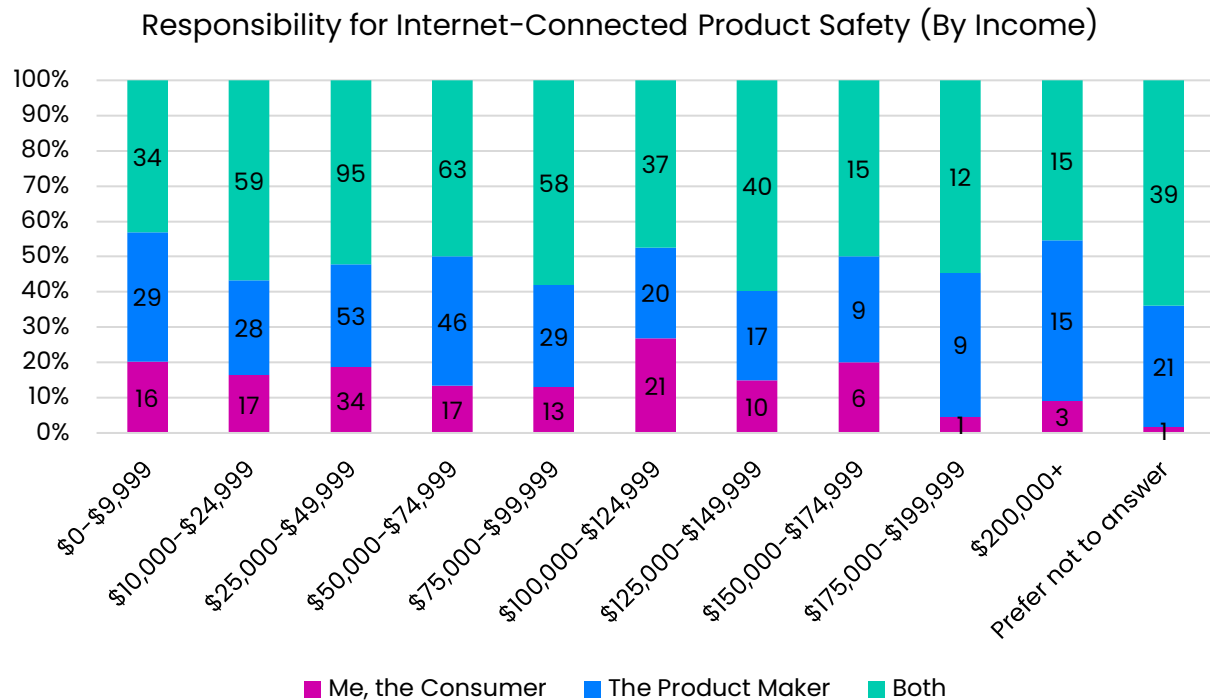
**Q5:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?  
(By Income)



**Figure 6.2.9**

### 6.2.5.2 Responsibility for Internet-Connected Product Safety

**Q11:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?  
(By Annual Income)



**Figure 6.2.10**

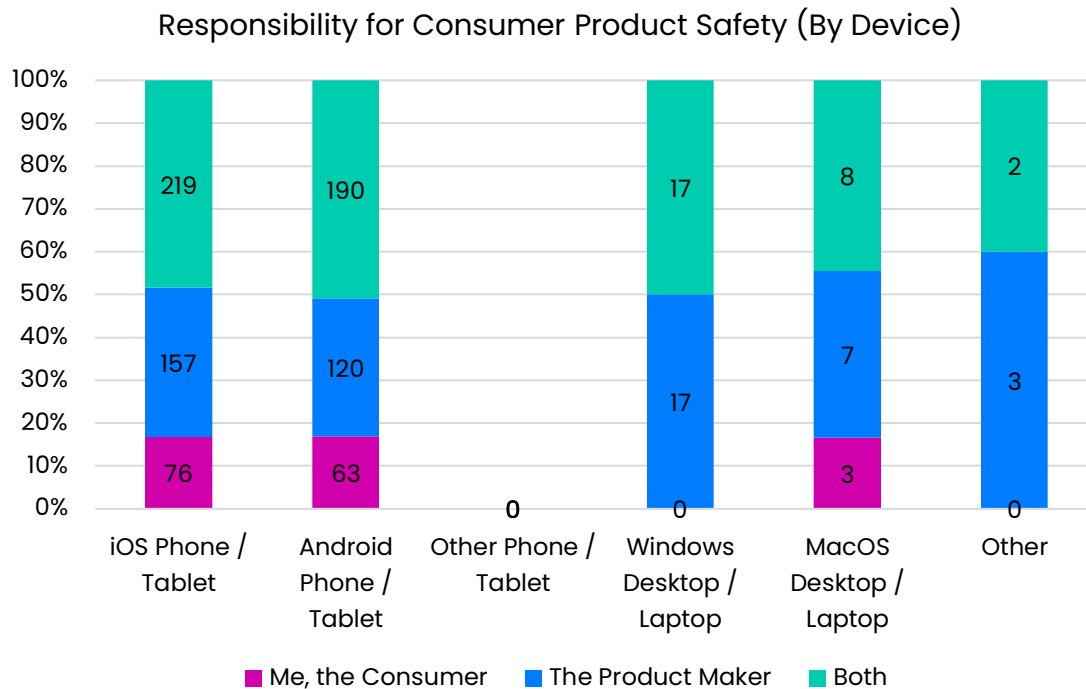
Income groups at the highest end of the scale, those earning over \$175,000 per year, are least likely to accept full, personal responsibility for Internet-Connected Product Safety, with responses for "Me, The Consumer" ranging from 4.5% to 9.1%. In fact, most groups, except for those earning under \$10,000 or over \$250,000, a majority entered "Both", indicating a shared responsibility.

Those earning less than \$175,000 selected "Me, The Consumer" at rates ranging from 14.9% to 26.9%, although the \$100,000–124,999 group seems to be an outlier, at 6.9% higher than the next highest group. What is clear however, is that all groups are less likely to select "Me, The Consumer" than "The Product Maker" and all except the \$200,000+ group were noticeably less likely to select "The Product Maker" than "Both". Only three groups had fewer than 50% of responses for "Both", including the Under \$9,999 (43.0%), the \$200,000+ group (45.5%) and the \$100,000–124,999 group (47.4%).

## 6.2.6 By Technology/Device Used

### 6.2.6.1 Responsibility for Consumer Product Safety

**Q5:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF CONSUMER PRODUCTS?  
(By Device)



**Figure 6.2.11**

Android and iOS phone or tablet users made up a significant majority of responses or 93.5% of participants. On the question of who is responsible for Consumer Product safety, Android Phone/Tablet and iOS Phone/Tablet users were nearly equally likely to select "Yes" at 16.9% and 16.8%, respectively, with about a third selecting "The Product Maker" (32.2% Android and 34.7% iOS). They were most likely to select "Both" (50.9% Android and 48.5% iOS). Desktop and laptop users were a much smaller group of participants, totaling 5.9% of participants.

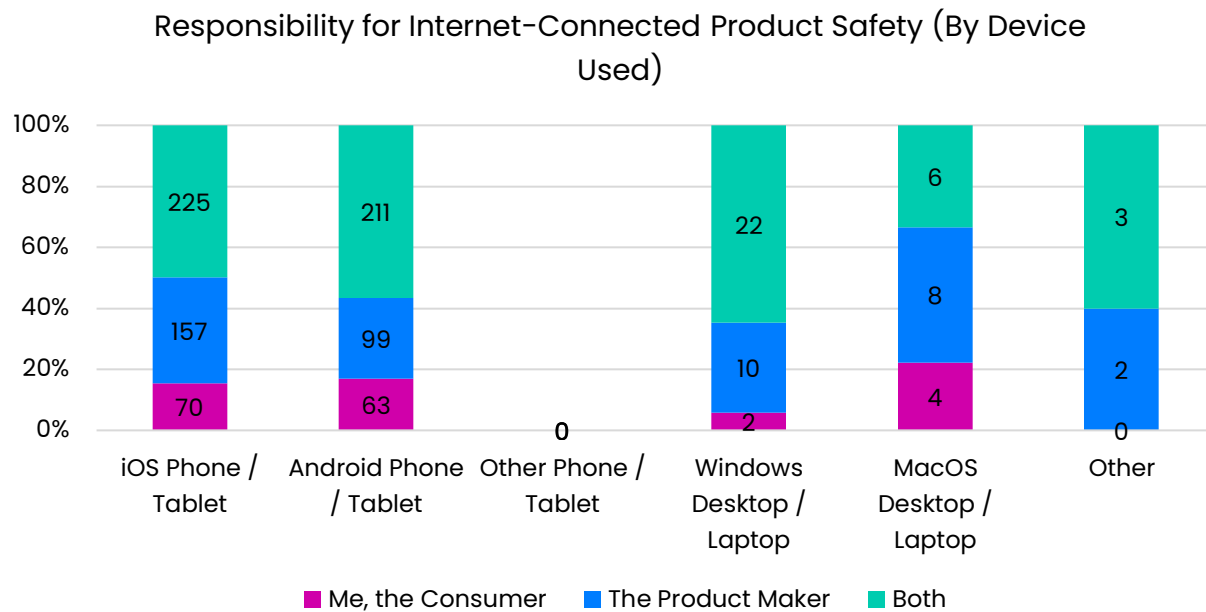
Windows Desktop/Laptop users at 3.9% of participants were equally divided between "The Product Maker" (50.0%) and "Both" (50.0%) while MacOS Desktop/Laptop users at 2.0% of the survey participants more closely resembled phone and tablet users with 16.7% of participants attributing the most responsibility for Consumer Product safety to "Me, The Consumer" and 44.4% selecting "Both". Only five participants used "Other" types of devices. These were more likely to select "The Product Maker" (60.0%) or "Both" (40.0%) have the most responsibility.

#### 6.2.6.2 Responsibility for Internet-Connected Product Safety

**Q11:** WHO HAS THE MOST RESPONSIBILITY FOR THE SAFETY OF INTERNET-CONNECTED PRODUCTS?



(By Device)



**Figure 6.2.12**

The majority of participants, or 93.5%, were Android Phone/Tablet users and iOS Phone/Tablet users. When asked who has the most responsibility for the safety of Internet-Connected products, Android Phone/Tablet users (15.5%) were slightly more likely to select "Me, The Consumer" than iOS Phone/Tablet users (16.9%). Android users were also more likely to select "Both" (58.6%) than iOS users (49.8%).

## 7 Discussion

A key difference between the two sets of products studied in this research is that consumer goods are relatively "inert" and only "animated" through the human that uses them. Internet-connected products, however, exhibit programmatic behavior; they are "animated" and interact with the user.

One finding is quite clear from this research and that's that people don't recognize threats to their physical or mental well-being from [interacting with] internet-connected products. ISL theorized this was the case before the research and the survey results solidified the theory.

What does this mean? Like the early days of cigarette usage, consumers don't connect threats separated in time with usage of the technology. Civil society, government, and industry have **much** work to do to better understand and communicate causal relationships between the use of internet-connected technologies and threats to personal and societal well-being. Consumers must have more information and transparency of second- and third-order harms from using internet-connected technology.

Another interesting finding from this research is that people seem to feel capable of evaluating safety risk in technology, which, ISL asserts, is not actually possible given the lack of transparency and regulation of internet-connected technology behavior.

Further, consumers seem more willing to take on the responsibility for ensuring their own safety when using internet-connected products than for typical consumer goods. ISL submits that the ongoing framing that citizens must be responsible for their own safety when using internet-connected technology reduces technology maker accountability for building safer technology, and is antithetical to the right to product safety to which US citizens are accustomed. Consumers deserve reasonably safe products, and in a world where software animates internet-connected technology, "safety" needs to be completely refactored. Asking consumers to install their own protections when using technology is like asking them to install their own safety belts and airbags in their cars; consumers wouldn't accept this in consumer goods and they shouldn't accept in internet-connected products.

## 8 Future Study

The following questions warrant future research:

- Re-run survey with a clearer definition of "Internet-Connected Products".

- An interesting follow-up research question would be to explore how well people think they understand safety risks in Internet-Connected Products. ISL hypothesizes that this will yield a finding the consumers largely do not understand safety risks in Internet-Connected Products.
- Explore further why consumers feel equipped to evaluate safety of internet-connected products.
- How well do consumer attitudes towards internet-connected product safety align with tech maker attitudes? In particular, how much overlap with "cybersecurity" is there in the minds of internet-connected product makers?
- Why did minority and lower-income respondents express lower concern for Internet-Connected product safety than white, higher-income respondents? Is this representative across a larger sample size?
- Have consumers' concerns over internet-connected products harms changed since the AI hype cycle of late 2023 and 2024?
- Have consumers' concerns over child online safety changed since the 42 states suing Meta and the 2024 US senate hearing?

## Appendix A: Consumer Survey Questionnaire

**Q1** Is product safety important to you?

- ☐ Yes
- ☐ No

Please tell us why you answered this way. (Open-Ended Comments)

**Q2** In your opinion, how safe are the following consumer products?

VERY UNSAFE – UNSAFE – NEUTRAL – SAFE – VERY SAFE

- ☐ Household Cleaning Products
- ☐ Automobiles
- ☐ Beauty and Personal Care Products
- ☐ Groceries
- ☐ Children's Toys
- ☐ Pets and Pet Care Products
- ☐ Electronics
- ☐ Furniture
- ☐ Home Appliances
- ☐ Clothing

**Q3** Please rank the following product categories from 1 to 10, according to how concerned you are about product safety. (1 = Most Concerned, 10 = Least Concerned)

0 – 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

- ☐ Children's Toys
- ☐ Beauty and Personal Care Products
- ☐ Pets and Pet Care Products
- ☐ Household Cleaning Products
- ☐ Home Appliances
- ☐ Groceries
- ☐ Automobiles
- ☐ Electronics
- ☐ Furniture
- ☐ Clothing

**Q4** What types of harms are you most concerned about in the Top 3 Consumer Product categories you selected?

Open-Ended Comments

**Q5** Who has the most responsibility for the safety of consumer products?

- ☐ Me, the Consumer
- ☐ The Product Maker
- ☐ Both

**Q6** How do you evaluate risk of harm for the Top 3 Consumer Product categories you selected? (Please include any tools, references, people or other resources, including online resources)

Open-Ended Comments

**Q7** Is the safety of Internet-Connected products important to you?

- ☐ Yes
- ☐ No

Please tell us why you answered this way. (Open-Ended Comments)

**Q8** In your opinion, how safe are the following Internet-Connected products?

VERY UNSAFE – UNSAFE – NEUTRAL – SAFE – VERY SAFE

- ☐ Websites
- ☐ Smart Automobile Software
- ☐ Mobile Apps
- ☐ Smart Home Devices/Digital Assistants
- ☐ Smart Appliance Software
- ☐ Health Devices and Monitoring Software
- ☐ Wearable Devices
- ☐ Smart TVs
- ☐ E-Readers/E-Book Devices

**Q9** Please rank the following Internet-Connected product categories from 1 to 10, according to how concerned you are about product safety. (1 = Most Concerned, 10 = Least Concerned)

- ☐ Websites
- ☐ Mobile Apps
- ☐ Smart Automobile Software

- ☐ Health Devices and Monitors (internet-connected)
- ☐ Smart Appliances (internet-connected)
- ☐ Wearable Devices
- ☐ Smart Home Devices/Digital Assistants
- ☐ E-Readers/E-Book Devices
- ☐ Smart TVs

**Q10** What types of harms are you most concerned about in the Top 3 Internet-Connected product categories you selected?

Open-Ended Comments

**Q11** Who has the most responsibility for the safety of Internet-Connected products?

- ☐ Me, the Consumer
- ☐ The Product Maker
- ☐ Both

**Q12** How do you evaluate the risk of harm for the Top 3 Internet-Connected product categories you selected? (Please include any tools, references, people or other resources, including online resources)

Open-Ended Comments

**Q13** For the question of who has responsibility for the safety of general consumer products versus internet-connected products, if you answered these questions differently, please explain why.

Open-Ended Comments

**Q14** Which of the following do you think are safety risks of Internet-Connected products?

- ☐ Identity Theft
- ☐ Sharing and Selling Personal Data by Third Parties
- ☐ Collection and Sharing of Personal and Behavioral Data by First Parties
- ☐ Data Breaches
- ☐ Misinformation/Disinformation
- ☐ Automated Decision-Making
- ☐ Cyber-Bullying
- ☐ Weaponized Data and Information
- ☐ Technology Addiction
- ☐ Deepfake Photos, Audio and Videos

- ☐ Nudging to Influence Online Behavior
- ☐ Programmatic Bias in Artificial Intelligence
- ☐ AI Chat and Large Language Models
- ☐ Online Advertising
- ☐ Mental and Physical Health Prediction

**Q15** Do you think companies do product safety testing on the Internet-Connected products that they make?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Open-Ended Comments

**Q16** Should companies that make Internet-Connected products do product safety testing?

- ☐ Yes
- ☐ No
- ☐ Not Sure

Open-Ended Comment

**Q17** Customize Has this survey changed anything about your perception and understanding of product testing? Let us know how.

- ☐ Yes
- ☐ No

Open-Ended Comments

The following questions were not part of our survey, but were provided by SurveyMonkey:

**Q18** Which race/ethnicity best describes you?

- ☐ American Indian or Alaskan Native
- ☐ Asian / Pacific Islander
- ☐ Black or African American
- ☐ White / Caucasian
- ☐ Prefer Not to Say
- ☐ Multiple ethnicity / Other (please specify)

**Q19** Age

- ☐ < 18
- ☐ 18-29
- ☐ 30-44
- ☐ 45-60
- ☐ > 60

**Q20** Device Type

- ☐ iOS Phone / Tablet
- ☐ Android Phone / Tablet
- ☐ Windows Desktop / Laptop
- ☐ MacOS Desktop / Laptop
- ☐ Other

**Q21** Gender

- ☐ Male
- ☐ Female
- ☐ Non-binary
- ☐ A gender not listed here
- ☐ Prefer not to answer

**Q22** Household Income

- ☐ \$0-\$9,999
- ☐ \$10,000-\$24,999
- ☐ \$25,000-\$49,999
- ☐ \$50,000-\$74,999
- ☐ \$75,000-\$99,999
- ☐ \$100,000-\$124,999
- ☐ \$125,000-\$149,999
- ☐ \$150,000-\$174,999
- ☐ \$175,000-\$199,999
- ☐ \$200,000+
- ☐ Prefer not to answer

**23** Region

- ☐ East North Central
- ☐ East South Central
- ☐ Middle Atlantic
- ☐ Mountain



- ☐ New England
- ☐ Pacific
- ☐ South Atlantic
- ☐ West North Central
- ☐ West South Central