SMART PRODUCTS REPORT 2025

A REPRESENTATIVE STUDY ON THE USE AND PERCEPTION OF SMART PRODUCTS IN SWITZERLAND

Launched by the University of St.Gallen
in collaboration with Vorwerk

University of St.Gallen
Institute of Behavioral Science and Technology

VORWERK

Bilendi & respondi

The Smart Products Report 2025 was conducted by the Institute of Behavioral Science and Technology of the University of St.Gallen and is part of the Swiss Consumer Studies. The revenue generated by the sale of the study is used to support basic research in the field of consumer behavior. The authors thank you for your trust and support.

FOREWORD

The Smart Products Report, now in its third edition, is a representative study on the use and perception of smart products in Switzerland. With rapid developments in technology, especially in the fields of artificial intelligence and robotics, products are becoming ever “smarter.” Smart products collect and process data to react to their environment and they are increasingly able to operate without human intervention. In comparison to their conventional counterparts, these products exhibit novel characteristics, fundamentally transforming consumers’ lives. As products across different categories become smarter, the report distinguishes five key product categories: household, entertainment, health and sports, home automation, and mobility. The scientific results provide an overview of the current and future use and perception of smart products in Switzerland, as well as the positive and negative aspects associated with them.

EXECUTIVE SUMMARY

Smart products are highly popular in Switzerland: More than eight out of ten Swiss people own or regularly use smart products and the general attitude toward them is rather positive. Users tend to be younger, work longer, and live busier lives than non-users.

Smart TVs and smartwatches are the most prevalent smart products, with two out of five Swiss owning them. Daily tasks such as cleaning or adjusting lights are increasingly delegated to smart products via robot vacuums and smart lights. Smart speakers and smart headphones are also common, with every fifth Swiss using them. Additionally, this year's edition includes, for the first time, the perception and use of AI chatbots, such as ChatGPT: Every third Swiss regularly uses AI chatbots, with the primary chatbot users being younger people.

As various tasks are handed over to smart products, the Swiss save approximately two hours per week through smart product use. These time savings are typically invested in leisure, relaxing, and family, but less in working extra hours. While some users appreciate smart products for their entertaining qualities, others value their role in promoting healthier, more sustainable lifestyles, or the practical benefits of saving time and enhancing comfort.

Despite the convenience smart products offer, significant adoption barriers persist as concerns over data collection, diminished user control, and high costs remain. Further, there are increasing concerns that smart products might negatively impact human skills. Roughly two out of three respondents worry about unlearning specific activities, such as cooking or cleaning, and many fear that relying too much on technology might diminish human intelligence.

CONTENT

STUDY DESIGN AND SAMPLE

Quantitative online survey

Data collection period: October 14 to November 6, 2024

Data collection and management through Bilendi & respondi market research company

Representative Swiss sample (N = 1,062; representative according to age, gender, and Swiss regions)

Three language regions involved. Survey conducted in French, German, and Italian.[1]

Demographic distribution of the sample

The 1,062 study participants are distributed among the three language regions of Switzerland as follows:[2]

- German-speaking: 68.6%
- French-speaking: 25.5%
- Italian-speaking: 5.8%

Age (mean):	45.1 years
Gender:	49.7% female, 50.0% male, 0.2% non-binary, 0.1% prefers not to disclose gender (participants were at least 18 years or older)
Occupation:	66.8% employed, 7.3% self-employed/entrepreneur, 5.1% pupil/student, 5.3% unemployed, 15.5% other (e.g., retired, parental leave)

ACKNOWLEDGMENT

The study partners thank Vorwerk for their financial support of the Smart Products Report 2025.

[1] All texts, questions, items, and responses were translated into English for this report.

[2] Distribution among the three language regions is based on the general linguistic distribution in Switzerland. The following source was used: Bundesamt für Statistik – Federal Statistik Office 2023, Hauptsprachen seit 1910 - 1910-2023 | Tabelle

SMART PRODUCTS AND PRODUCT CATEGORIES

The study distinguishes five core product categories:

Household: smart kitchen appliance, robot vacuum, robot mop, smart fridge, smart washing machine, robotic lawn mower, smart oven, combined robot mop and vacuum, smart window cleaner, smart cooker hood, smart dishwasher, 3D printer

Entertainment: smart speaker without AI assistant (e.g., “Alexa”), smart speaker with AI assistant, smart headphones, smart TV

Health and sports: smartwatch, smart fitness tracker, smart blood glucose monitor, smart body scale

Home automation: smart light, smart heating thermostat, smart power socket, smart door and window system, smart surveillance system, smart energy management (e.g., electricity), smart irrigation system

Mobility: car with autonomous features, smart bike, smart scooter

Additionally, this edition of the report also includes a sixth category:

Artificial intelligence: Chatbots such as ChatGPT

Definition

In the study, smart products are defined as products for private usage that have the ability to collect and process data and to react to their environment. They are largely working without human support and are increasingly able to undertake tasks autonomously. The smartphone is excluded from the entire study.

STUDY RESULTS

1. Use of Smart Products

1.1 Distribution of Smart Products: 2022 vs. 2025

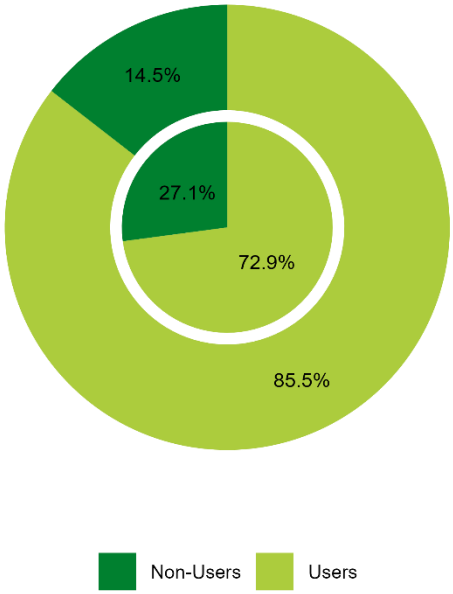


Figure 1: Share of smart product users[3] (inner circle: 2022, outer circle: 2025; full sample, N = 1062).[4]

85.5% of the Swiss own or regularly use at least one smart product (excluding smartphones and chatbots), a 17% increase compared with the same figures in 2022. An average of 4.1 smart products are owned or used on a regular basis by users.[5]

[3] The term "users" refers to people who own or regularly use at least one smart product. People who do not own or regularly use at least one smart product are referred to as "non-users."

[4] Participants who indicated to use chatbots, but who did not own or regular use any smart product were counted as "non-users" in this visualization.

[5] Comparisons of this year's results with those obtained in the Smart Products Report 2022 should be interpreted with caution because the studies did not include the same respondents. Furthermore, the understanding of a "smart product" might have evolved over the years, making the two reports not directly comparable.

1.2 Users Are Different from Non-users

Swiss users of smart products differ from those who do not use smart products in the following respects.
They ...

- are **younger** ($mean_{users}$ = 43.5 years, $mean_{non\text{-}users}$ = 54.5 years),
- report to have a **more stressful** daily routine ($mean_{users}$ = 4.4, $mean_{non\text{-}users}$ = 3.5), and **work longer** hours on average ($mean_{users}$ = 9.6 h, $mean_{non\text{-}users}$ = 7.8 h).
- Broken down by gender, among **users** there tend to be **more men** with 51.6% identifying as male compared to 48.4% female. Among **non-users,** there are **more women** (59.9%) than men (40.1%). This distribution does not differ from statistics of 2022.
- **Differences** are also evident in the **language distribution.** 68.2% of users are German-speaking, 25.6% are French-speaking, and 6.2% Italian-speaking. Among non-users, 71.4% are German-speaking, 24.7%, French-speaking, and 3.9% Italian-speaking.

Similar patterns are found for **chatbot usage:**

- Chatbot users tend to be **younger** than non-users ($mean_{users}$ = 39.0 years, $mean_{non\text{-}users}$ = 47.8 years), with 70.8% of students and 50.0% of pupils using chatbots, making them the primary chatbot users. Usage decreases with age, peaking at 76.2% among 18-20-year-olds and steadily declining with older respondents.
- Usage rates are **highest in Central Switzerland** (41%), **moderate** in the **Lake Geneva region** (31%), and **lowest** in the **Italian-speaking part** (20%).
- **Higher usage rates** (37%) are found among respondents **with average working hours** (8h-11h) and lower usage rates (15%) are found for respondents with very little (2h-4h) or very high (14h-20h) working hours.

1.3 Commonly Used Products

Do you or another person in your household own one or more smart products? If yes, which ones? (Multiple answers possible)

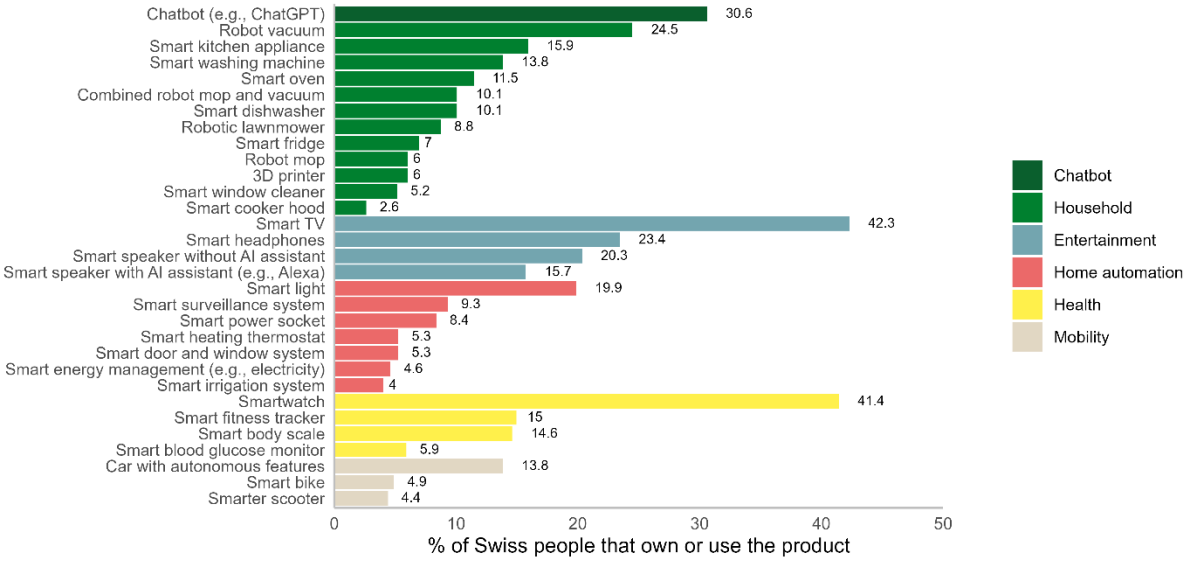


Figure 2: Current distribution of various smart products in Switzerland (full sample, N = 1062).

Smart TVs are the most common smart products, with usage rising from 25.2% in 2022 to 42.3% in 2025—a 68% increase. Smartwatches closely follow, growing from 29.3% to 41.4% (41% increase). Robot vacuums saw a more modest rise from 21.7% to 24.5% (13% increase), while smart headphones nearly doubled in usage, jumping from 11.8% to 23.4% (98% increase). Smart speakers also experienced a significant rise, increasing from 13.7% to 20.3% (48% increase). While the overall ranking of smart product usage hasn't changed substantively, usage has grown across all categories.

Nearly every third Swiss regularly uses chatbots (30.6%), with 70.8% of students and 50.0% of pupils using chatbots, making them the primary chatbot users. Usage decreases with age, peaking at 76.2% among 18-20-year-olds and steadily declining with older respondents.

2. General Attitude Toward and Satisfaction with Smart Products

2.1 General Attitude

How would you describe your general attitude regarding smart products?

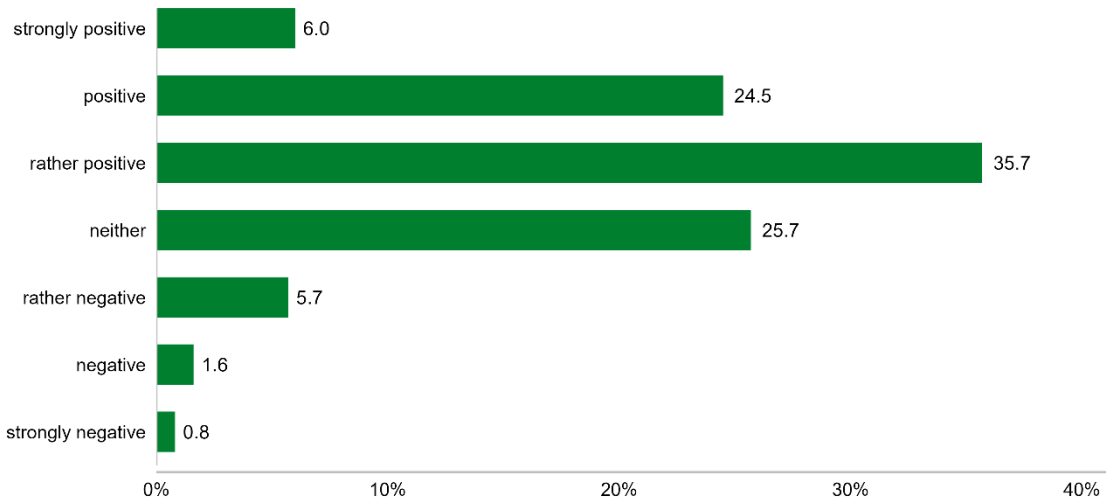


Figure 3: General attitude toward smart products (full sample, N = 1062). Mean = 4.9 (median = 5.0).[6]

The Swiss have a positive attitude toward smart products. 30.5% of the Swiss state that they have a strongly positive or positive attitude regarding smart products, compared to 22.8% in 2022 and 28.5% in 2020. Another 35.7% see smart products rather positively. While approximately one-fourth of respondents have neither a positive nor negative attitude (24.4% in 2022), 5.7% have a rather negative attitude toward smart products (12.5% in 2022), and 3.2% a negative or strongly negative attitude (3.2% in 2022). In summary, positive attitudes toward smart products have slightly increased since 2022.

[6] All means are based on 7-point Likert Scales (unless noted otherwise).

2.2 Satisfaction With Smart Products

How satisfied are you with your smart products?

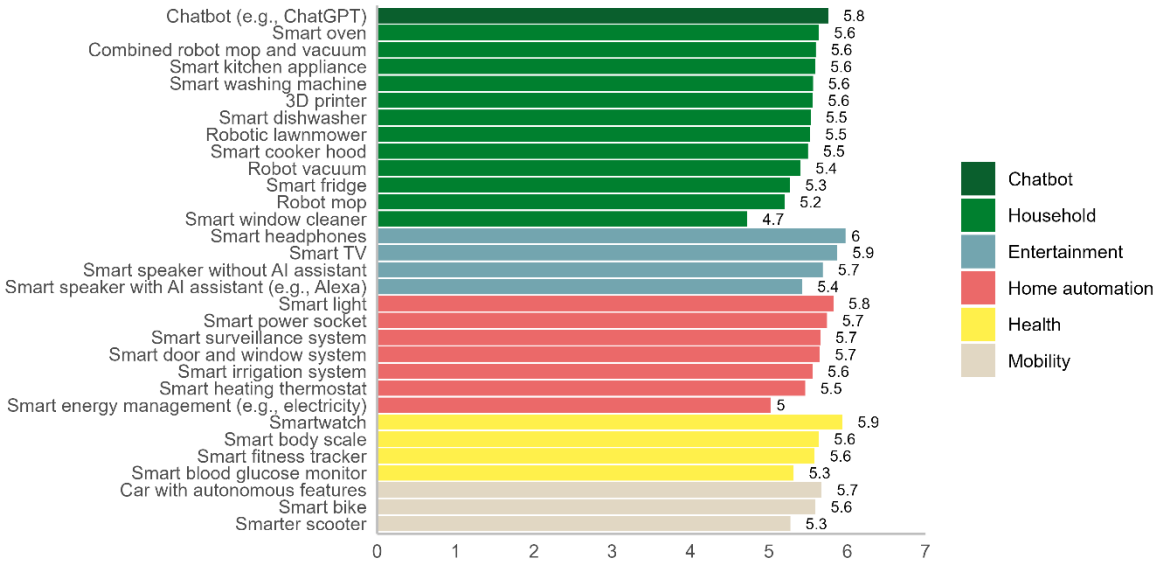


Figure 4: Average satisfaction with smart products in Switzerland (Smart product users and chatbot users[7], N = 922). Higher averages indicate higher satisfaction. Mean = 5.7 (median = 6.0).

Overall, the Swiss are very satisfied with smart products with little variance between product categories. The Swiss are most satisfied with smart headphones (6.0), smart TVs (5.9), smart watches (5.9), smart lighting (5.8) and chatbots (5.8). Compared to 2022, satisfaction with smart products remains high.

[7] The term “chatbot users” refers to people who do not own or regularly use at least one smart product but indicated they regularly use chatbots.

3. Advantages and Disadvantages of Smart Products

3.1 Advantages of Smart Products

What do you see as the advantages of using smart products compared to conventional products (e.g. robot vacuum vs. normal vacuum cleaner)?

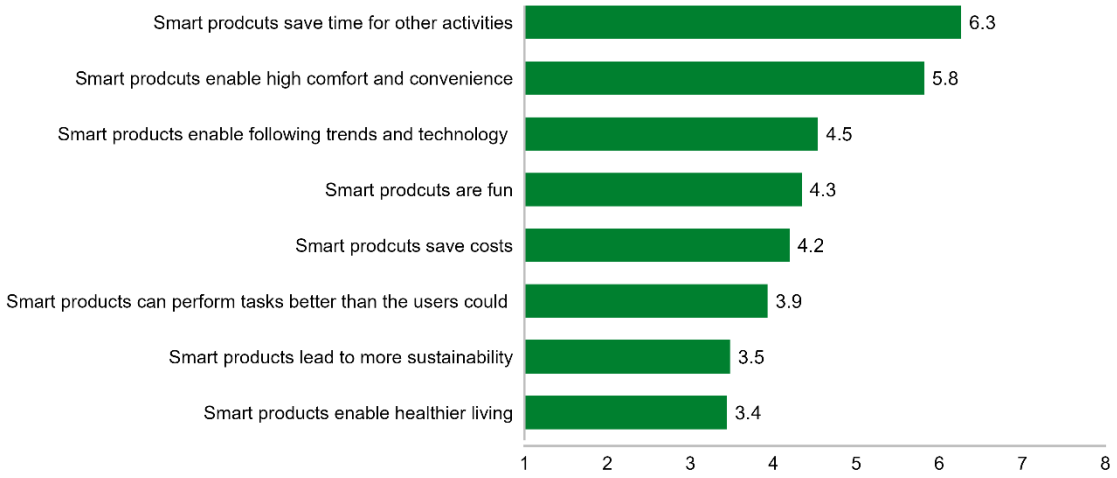


Figure 5: Ranking of advantages of smart products (full sample, N = 1062). For the exact wording of items, see Appendix A.

The most highly rated benefit of using smart products is timesaving, with an average score[8] of 6.3, followed by increased comfort at 5.8. Other advantages, such as keeping pace with technology (4.5) and being entertaining (4.3), received moderate ratings, while factors like sustainability (3.5) and health benefits (3.4) ranked lower. Overall, the results suggest that efficiency and convenience are the primary reasons people appreciate smart products, whereas their impact on sustainability and health is perceived as less important.

[8] The original ranks have been transformed into a numerical scale by reversing the order of the items. As a clarifying example, an item ranked as 1, therefore considered as top priority, has been assigned a score of 8 on the new scale. Afterwards, average scores have been computed on the transformed scale.

3.2 Cluster Analysis on Advantages of Smart Products

What do you see as the advantages of using smart products compared to conventional products (e.g. robot vacuum vs. normal vacuum cleaner)?

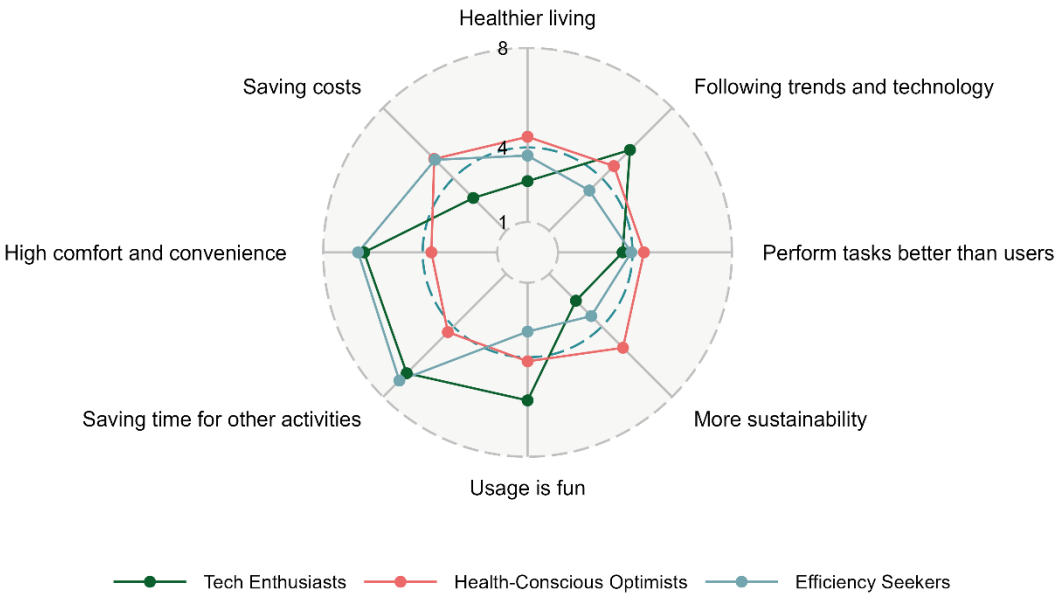


Figure 6: Radar chart visualizing the three main clusters of respondents ranking advantages of smart products (full sample, N = 1062). The original ranks have been transformed into a numerical scale by reversing the order of the items, as in 3.1. Higher (8) compared to lower (1) rankings reflect agreement to the advantage.

A cluster analysis[9] was conducted to cluster respondents into three broad groups based on their rankings of advantages.

1. Cluster 1: The "Tech Enthusiasts" (N = 421). This group values the humorous and entertaining aspects of smart products. They are skeptical about smart products' role in healthier living, sustainability, or saving money. They may see smart products as tools for leisure and enjoyment rather than practical uses.

2. Cluster 2: The "Health-Conscious Optimists" (N = 248). This group believes that smart products contribute positively to healthier living, sustainability, and saving money. They show moderate confidence in smart products' ability to enhance comfort and perform tasks better than people.

3. Cluster 3: The "Efficiency Seekers" (N = 393). This group prioritizes practical benefits, particularly saving time, keeping pace with technology, and achieving comfort. They score lower on emotional and lifestyle benefits, such as humor, or healthier living.

[9] Cluster analysis is a statistical method used to group similar responses into clusters based on their characteristics. It identifies patterns in data by minimizing differences within clusters while maximizing differences between them. The goal is to uncover hidden structures or segments within a dataset.

3.3 Disadvantages of Smart Products

What do you see as the disadvantages of using smart products compared to conventional products (e.g. robot vacuum vs. normal vacuum cleaner)?

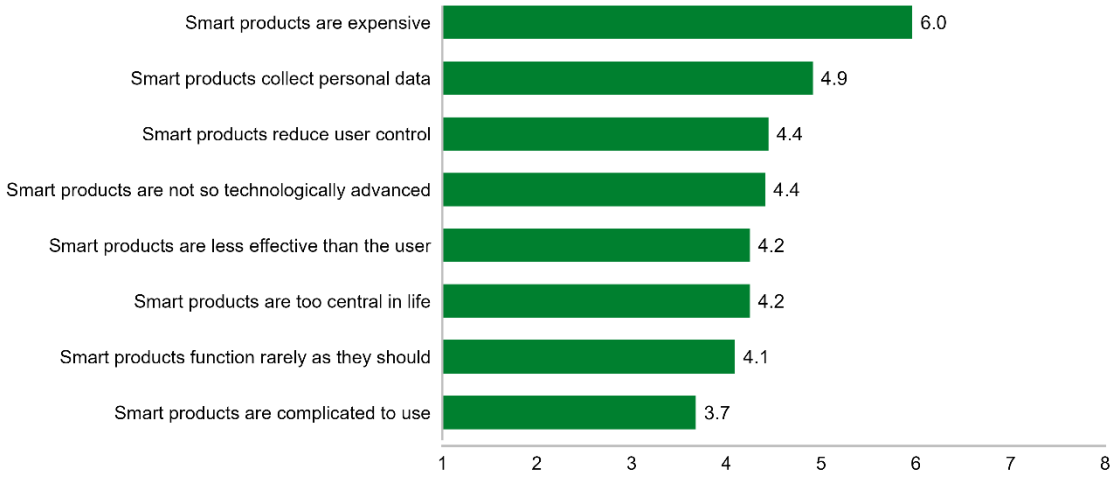


Figure 7: Ranking of disadvantages of smart products (full sample, N = 1062). For the exact wording of items, see Appendix B.

The most highly rated disadvantage of smart products is costs, with an average score of 6.0.[10] The second highest concern is the collection of personal data, rated at 4.9. Respondents also express concerns about reduced user control since smart products function autonomously (4.4) and the belief that smart products are not as technologically advanced as expected (4.4). The lowest-rated disadvantage is the complexity of use, which scores 3.7. The main concerns about smart products revolve around their high cost, data privacy, and loss of user control.

[10] The original ranks have been transformed into a numerical scale by reversing the order of the items. As a clarifying example, an item ranked as 1, therefore considered as top priority, has been assigned a score of 8 on the new scale. Afterwards, average scores have been computed on the transformed scale.

3.4 Cluster Analysis on Disadvantages of Smart Products

What do you see as the disadvantages of using smart products compared to conventional products (e.g. robot vacuum vs. normal vacuum cleaner?

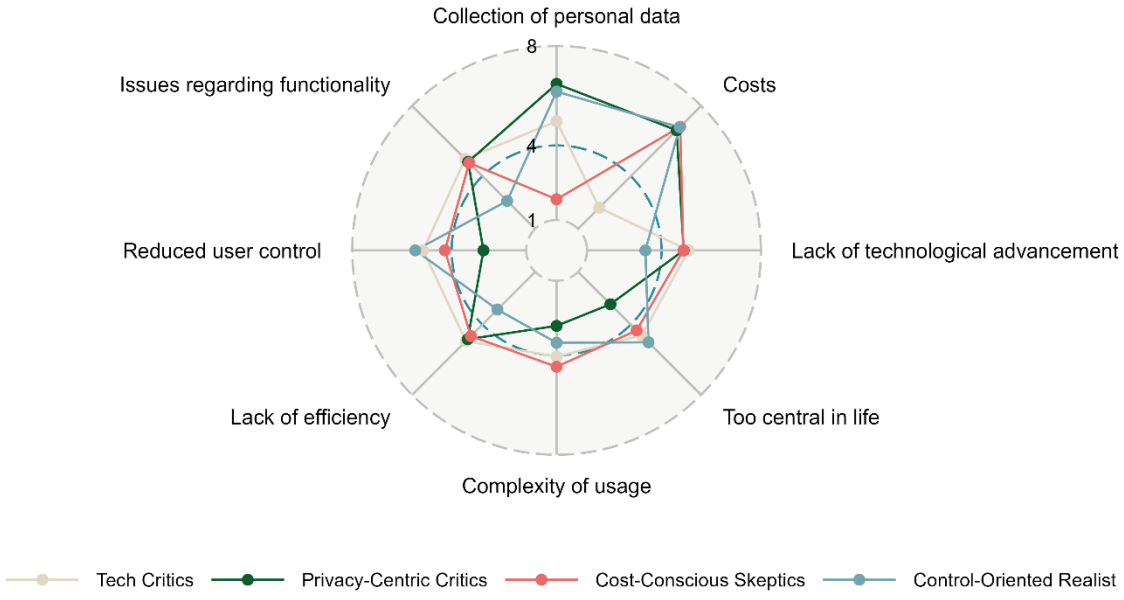


Figure 8: Radar chart visualizing the three main clusters of respondents ranking disadvantages of smart products (full sample, N = 1062). The original ranks have been transformed into a numerical scale by reversing the order of the items, as in 3.3. Higher (8) compared to lower (1) rankings reflect agreement to the disadvantage.

Similarly to the analysis of advantages of smart products, respondents could be clustered into four broad groups based on their rankings of disadvantages with the help of a cluster analysis.

1. Cluster 1: The “Tech Critics” (N = 182). This group perceives smart products as less advanced and ineffective compared to traditional products. They express concerns about losing control and believe smart products rarely work as expected.

2. Cluster 2: The “Privacy-Centric Critics” (N = 254). This group is highly concerned about smart products collecting personal data and being too central to daily life. They are less focused on the technological limitations and more on privacy and social implications.

3. Cluster 3: The “Cost-Conscious Skeptics” (N = 275). This group strongly believes that smart products are expensive but less concerned about smart products being central to life or overly complex. They are particularly skeptical about cost-effectiveness.

4. Cluster 4: The “Control-Oriented Realist” (N = 351). This group is most concerned about smart products leaving humans with less control and centralizing too much influence. They also acknowledge the expense of smart products but are less critical of technological advancements.

4. Time Considerations in the Use of Smart Products

This section explores the extent to which using smart products can save users time and how this saved time is effectively used.

4.1 Estimated Time Savings Per Week

How much time per week could you approximately save by using smart products?

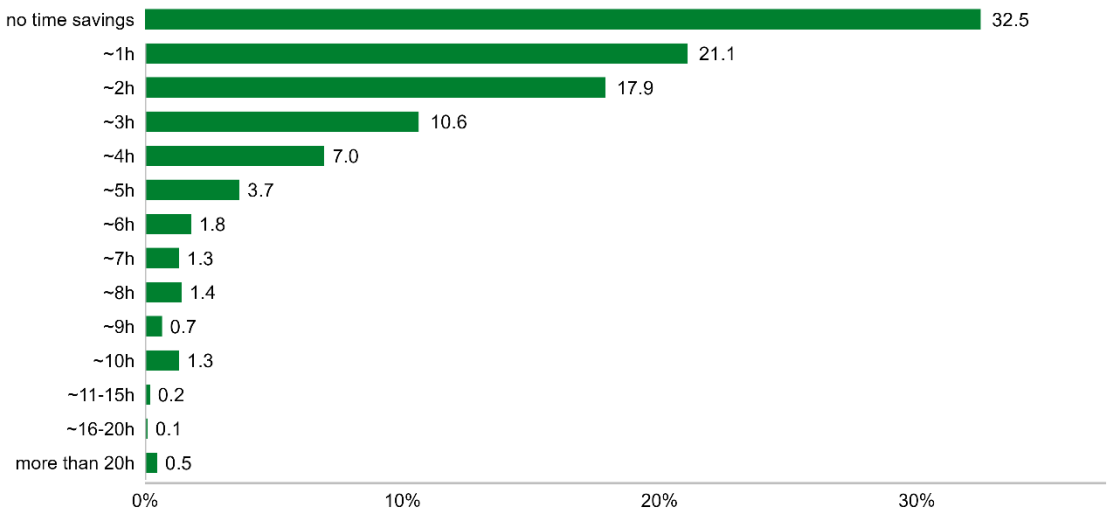


Figure 9: Estimation of time saved per week by using smart products (total sample, N = 1062). $Mean_{timesavings}$ = 2.9 ($median_{timesavings}$ = 2.0). $Mean_{all\ respondents}$ = 1.9 ($median_{all\ respondents}$ = 1.0).

Out of all respondents 32.5% stated that they do not save any time by using smart products. The other 67.5% of respondents indicate they would save time by using smart products.

21.1% believe they save approximately one hour, 17.9% estimate two hours, and 10.6% report saving three hours. Fewer respondents indicate higher time savings, with 7.0% estimating four hours and only 3.7% believing they save five hours per week. Very few respondents estimate time savings to be more than ten hours per week.

On average, respondents indicate to save approximately 2 hours per week.

4.2 Use of Saved Time

How do you use the time saved by using smart products? (Multiple answers possible)

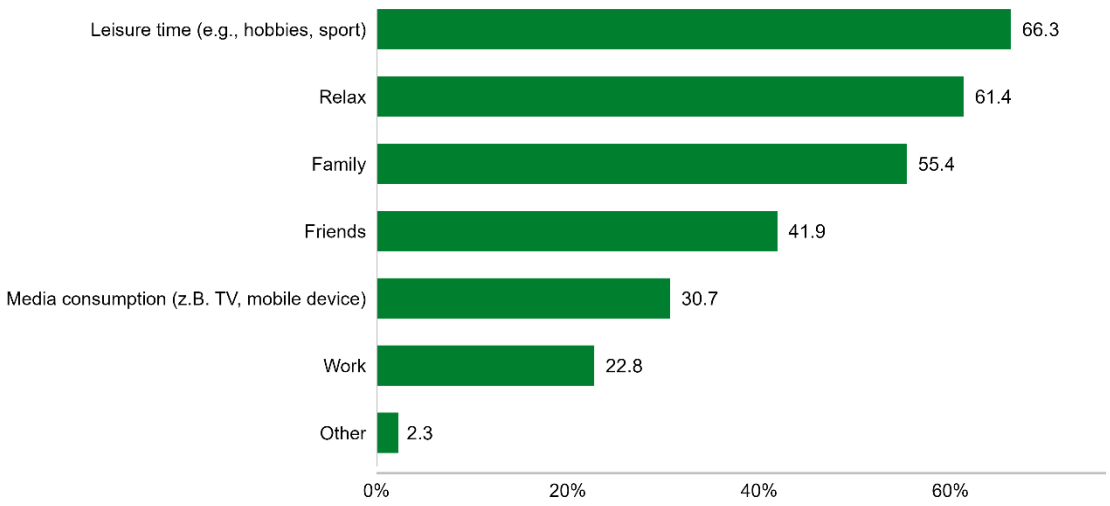


Figure 10: Use of time saved by using smart products (respondents stating that more than 2h can be saved, N = 303). Participants could choose multiple activities.

The majority of Swiss residents state that they would use the time saved by using smart products for their leisure time (66.3%). Relaxing (61.4%) and time with the family (55.4%) are other activities for which they would preferably use the saved time.

4.3 Estimated Time Savings by User vs. Non-user

4.3.1 Time Savings for Robot vacuums

Anticipated vs. realized time savings per week

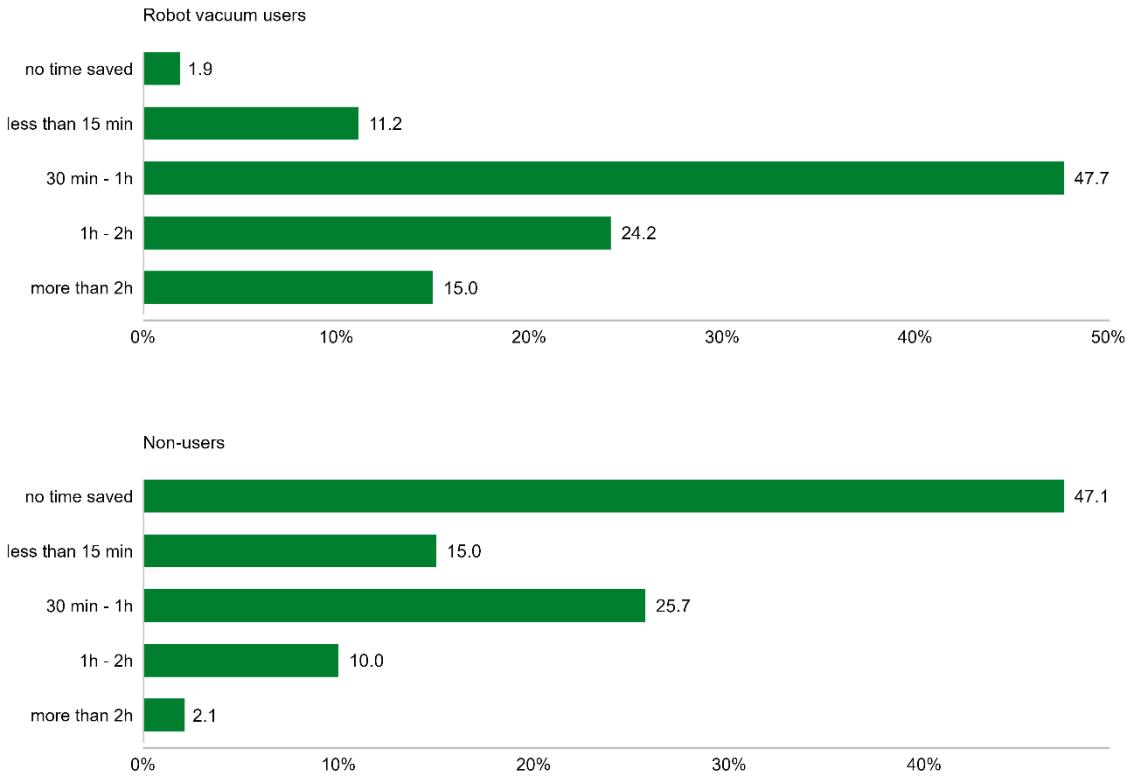


Figure 11: Estimates of time saved by using a robot vacuum (Robot vacuum users, n_{users} = 260 vs. non-users of smart products, $n_{non\text{-}users}$ = 140). $Mean_{users}$ = 59.0 ($median_{users}$ = 40.0). $Mean_{non\text{-}users}$ = 16.7 ($median_{non\text{-}users}$ = 3.0).

Among robot vacuum users, a majority (47.7%) believe they save 30 minutes to one hour per week, while 24.2% estimate saving one to two hours.

In contrast, among non-users, nearly half (47.1%) believe they would not save any time with a robot vacuum. A significant portion (25.7%) estimates they would save 30 minutes to one hour, while 15.0% estimate time savings to be less than 15 minutes. Only 12.1% believe they would save a significant amount of time.

Among users, the average time saved is estimated at 59.0 minutes.[11] In contrast, among non-users, the average time saved is estimated at 16.7 minutes, indicating that those who actively use smart products perceive significant time-saving benefits compared to non-users.

[11] Three individuals who reported losing time have been recoded as “no time saved” in order to calculate the average time saved by robot vacuums.

4.3.2 Time Savings for Smart Speakers with AI Assistant

Anticipated vs. realized time savings per week

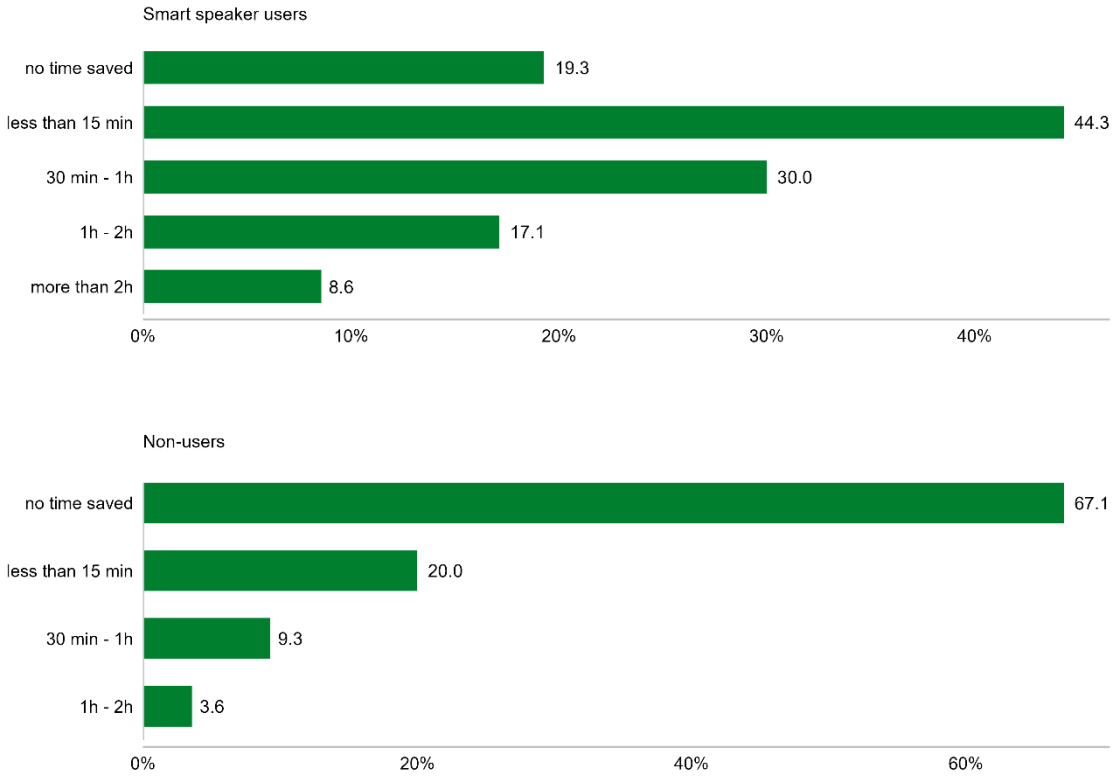


Figure 12: Estimates of time saved by using a smart speaker with AI assistant (Smart speaker users, n_{users} = 167 vs. non-users of smart products, $n_{non\text{-}users}$ = 140). $Mean_{users}$ = 38.3 ($median_{users}$ = 10.0). $Mean_{non\text{-}users}$ = 5.7, $median_{non\text{-}users}$ = 0.0).

Among smart speaker users, 44.3% of respondents report saving less than 15 minutes per week, while 30.0% estimate savings of 30 minutes to one hour.

In contrast, among non-users, a majority (67.1%) believe they would not save any time if they used a smart speaker. A smaller share (20.0%) estimates they would save less than 15 minutes, while 12.9% expect a savings of 30 minutes to two hours.

On average, smart speaker users estimate to save 38.3 minutes per week, while non-users estimate an average potential saving of only 5.7 minutes per week. Similar to time savings estimates of users of robot vacuums, users perceive greater time savings compared to non-users.

5. Perception of Smart Products

5.1 Perceptions of Creepiness, Threat, and Fears

This section explores respondents' fears and concerns regarding smart products, specifically focusing on potential changes regarding fear perceptions since 2022.

5.1.1 Creepiness and Threat Perceptions: 2022 vs. 2025

Do you agree with the following statements?

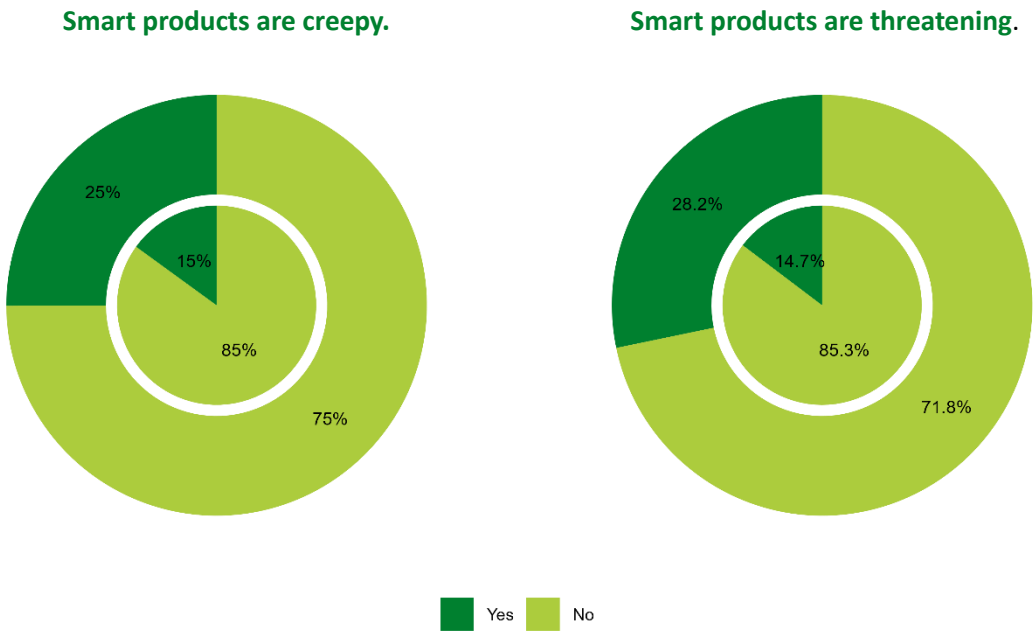


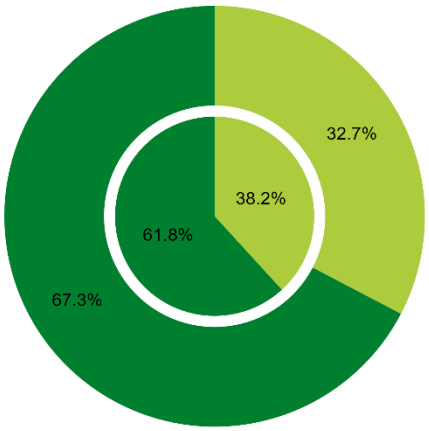
Figure 13: Perception of creepiness of smart products and of threat by smart products (inner circle: 2022, outer circle: 2025, full sample, N = 1062).

The perception that smart products are creepy increased from 15.0% of respondents agreeing in 2022 to 25.0% agreeing in 2025, indicating growing discomfort or skepticism. Similarly, the belief that smart products are threatening nearly doubled, rising from 14.7% in 2022 to 28.2% in 2025. Overall, these results suggest an increasing concern towards smart technologies among respondents.

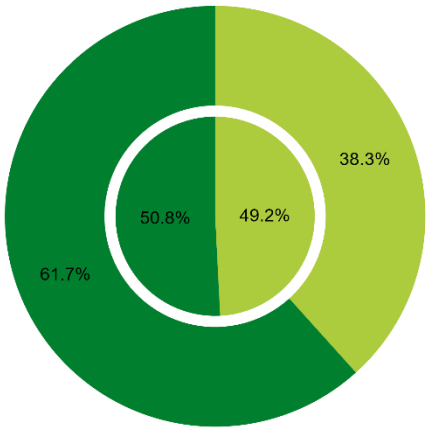
5.1.2 Fears about Smart Products: 2022 vs. 2025

Do you agree with the following statements? The use of smart products leads to…

…people unlearning specific activities (such as cooking or cleaning).



...people becoming dumber



…smart products taking over the thinking for people.

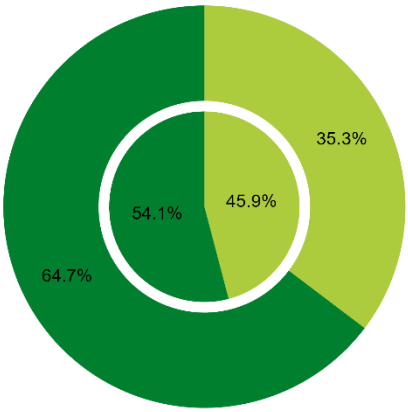


Figure 14: Fears and threats regarding smart products (inner circle: 2022, outer circle: 2025; full sample, N = 1062).

Respondents express significant concerns about the long-term effects of smart products, particularly regarding people unlearning specific activities (67.3%), becoming dumber (61.7%), and smart products taking over the thinking for people (64.7%). These concerns have notably increased compared to 2022, especially the latter, which rose from 54.1% to 64.7%. Overall, there is growing apprehension among

respondents that reliance on smart technologies could negatively impact human skills and cognitive abilities.

5.1.3 Zero-sum Perceptions

Some people believe the rise of new technologies comes at the expense of humankind, that is, some people view technology autonomy as a zero-sum: when one party gains, the other party automatically loses. Autonomy describes the ability to take and implement decisions independently, without the influence of others. In the context of smart products this means when smart products become more autonomous, humans lose autonomy.

To what extent do you agree with the following statement?
"When smart products become more autonomous, humans lose autonomy."

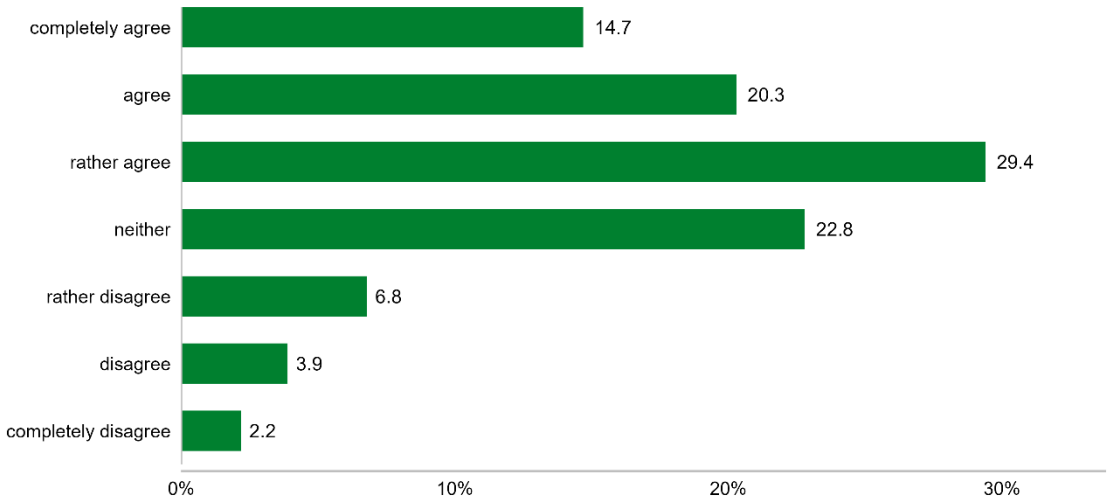


Figure 15: Zero-sum perceptions of smart products (full sample, N = 1062). Mean = 4.9 (median = 5.0).

The majority of the Swiss (64.4%) agrees with the perception that humans lose autonomy, when smart products become more autonomous. While 22.8% of respondents neither agree nor disagree with the statement, 12.9% rather disagree, disagree or completely disagree with this perception.

5.2 Motion Perceptions

Some smart products, such as robot vacuums or robotic lawn mowers, are characterized by their ability to move independently. In this section, we focus on users of self-moving smart products, that is, users of robot vacuums, robot mops, combined robot mop and vacuum, robotic window cleaners, and robotic lawn mowers.

5.2.1 Danger

How would you describe your smart products in terms of danger?

"Dangerous" (= 7) means that the smart product could possibly be perceived as a danger (e.g. for other objects, plants, animals, children).

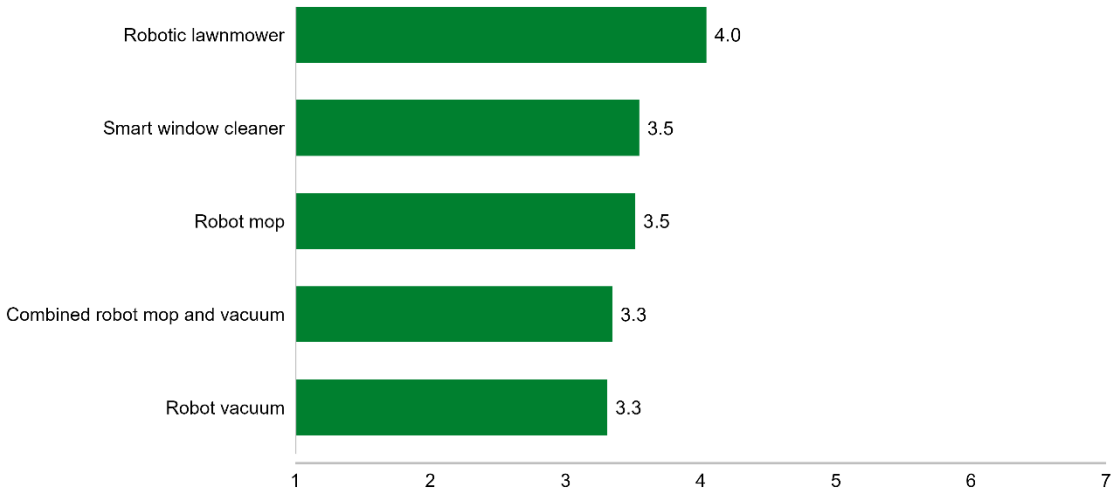


Figure 16: Average perceptions of danger per product (users of self-moving products, N = 579). Higher numbers indicate higher perceptions of danger. Mean = 3.6 (median = 3.5).

Robotic lawnmowers are perceived as potentially the most dangerous (4.0) self-moving product. In contrast, the remaining products show little variation in perceived danger, all clustering closely around the median value (3.3–3.5). Overall, self-moving products are not strongly associated with danger in the eyes of users.

5.2.2 Effectiveness

How would you describe your smart products in terms of effectiveness?

"Effective" (= 7) means the smart product fulfills its task effectively.

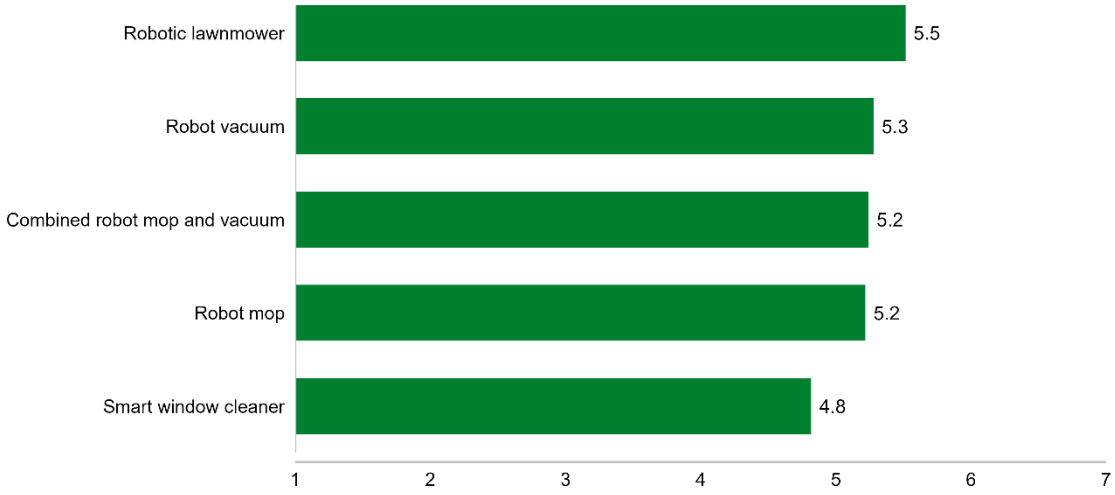


Figure 17: Average perceptions of effectiveness per product (users of self-moving products, N = 579). Higher numbers indicate higher perceptions of effectiveness. Mean = 5.2 (median = 5.2).

Robotic lawnmowers are rated as the most effective (5.5) self-moving product, followed closely by robot vacuums (5.3), combined robot mop and vacuum systems as well as robot mops (5.2). Smart window cleaners are rated slightly lower (4.8), though still near the overall average. In general, users perceive self-moving products as effective, with only minor variation between categories.

5.3 Social Perceptions

This section explores how users perceive smart products and their interactions with them socially, for instance, through nicknaming or assigning human-like characteristics and social roles.

5.3.1 Interactions with Smart Products

When interacting with a smart product, either the product or the person can lead/guide the activity. Who do you think leads/guides the activity?

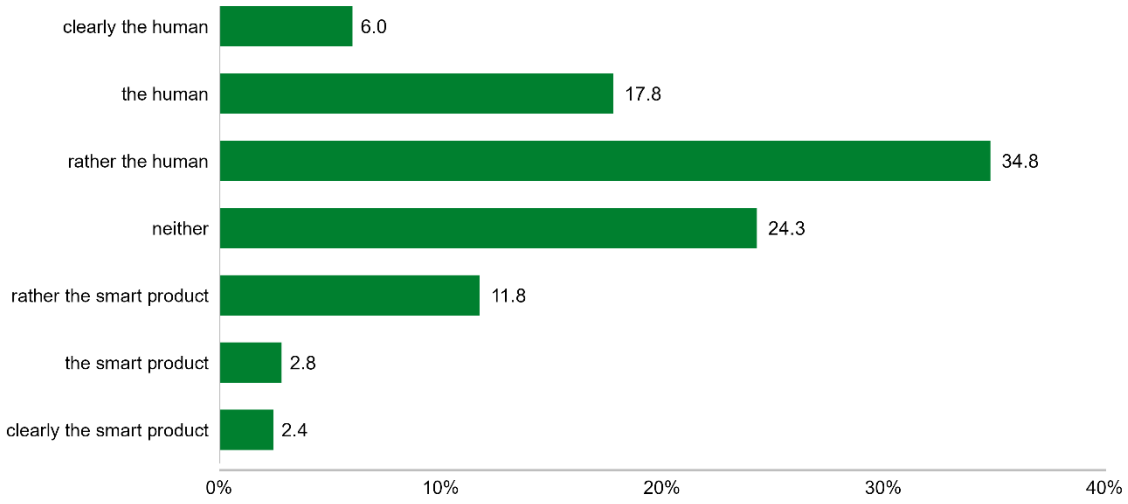


Figure 18: Perception of who is in the lead during interactions with smart products (full sample, N = 1062). $Mean_{all\ respondents}$ = 4.6 (median = 5.0, $mean_{users}$ = 4.7, $mean_{non\text{-}users}$ = 4.1).

The Swiss predominantly perceive that humans rather than smart products lead interactions, with 58.6% indicating that the human is in charge ("clearly the human," "the human," or "rather the human"). 23.8% of respondents see the human as definitively in charge, and an additional 34.8% see rather the human in charge. Conversely, only 5.2% perceive the smart product to be "rather" or "clearly" in the lead with 11.8% indicating that rather the smart product is in the lead. Almost a quarter of respondents is undecided (24.3%). This distribution is relatively similar to previous years, only percentages of those stating that rather the smart products has decreased and respondents stating that neither is true has increased.

5.3.2 Competition with Smart Products

Do you have the feeling that human and smart products are in competition?

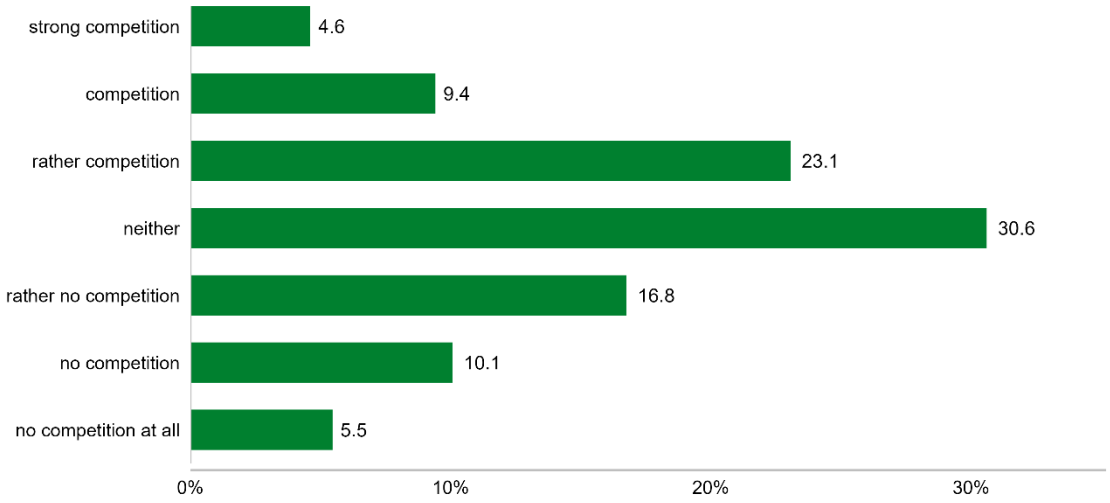


Figure 19: Perception of competition between humans and smart products (full sample, N = 1062). $Mean_{all\ respondents}$ = 4.0 (median = 4.0, $mean_{users}$ = 4.0, $mean_{non\text{-}users}$ = 4.2).

37.1% of Swiss residents perceive humans and smart products to be in competition. 14% of respondents state that there is competition or strong competition, an additional 23.1% of respondents state that there is rather competition. 15.6% indicate that they perceive no competition or no competition at all and 16.8% feel that there is rather no competition. Almost a third of participants (30.6%) are undecided. In comparison to 2022, the perception of humans and smart products being in competition has slightly increased (28.6% in 2022 vs. 37.1% in 2025).

5.3.3 Nicknaming Smart Products: 2022 vs. 2025

Do you have a “nickname” for your smart products? (That is, you do not use the actual product name, but another word.)

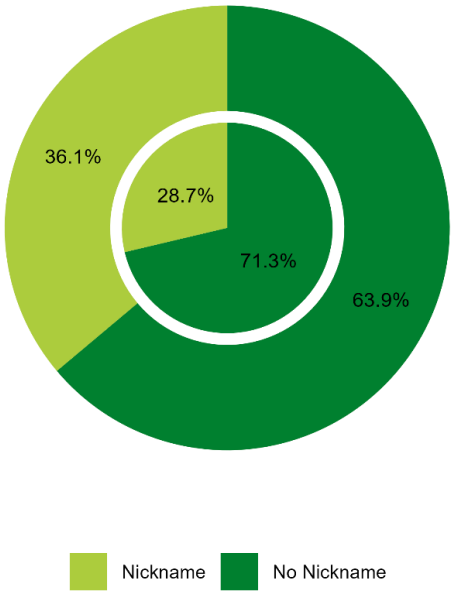


Figure 20: Share of participants nicknaming their smart products (inner circle: 2022, outer circle: 2025; smart products users, N = 908).

Consumers integrate smart products into their lives socially: The trend of assigning nicknames to smart products is further rising with now more than a third (36.1%) of users assigning nicknames, compared to 28.7% in 2022.

5.3.4 Nicknaming by product category

Do you use nicknames for your smart products (i.e., not the actual product name, but another word)? (Multiple answers possible)

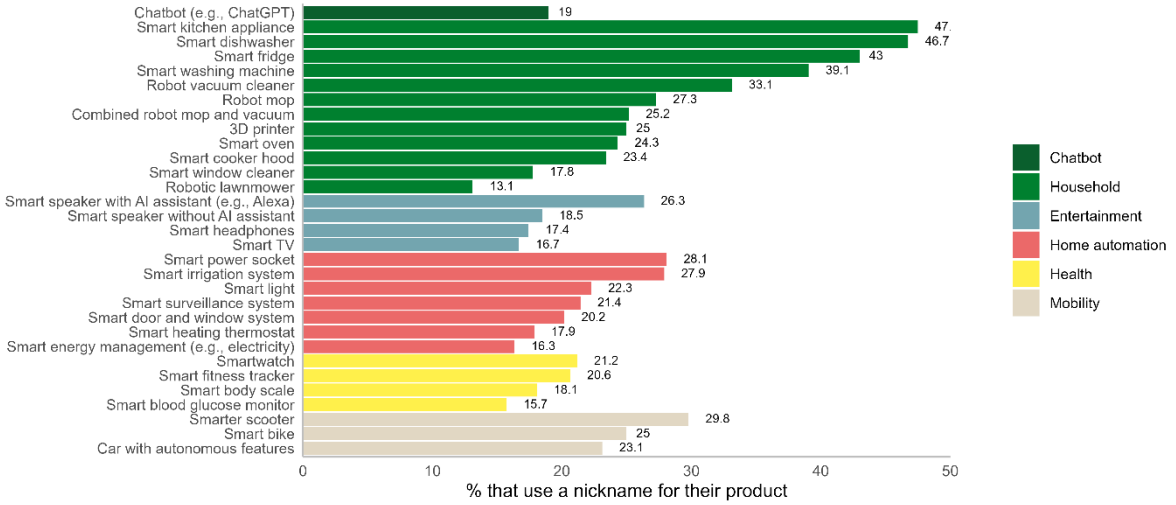


Figure 21: Nicknaming smart products per product category (N = 908). Participants could indicate all the products for which they use nicknames, that is, multiple answers were possible.

The most frequently nicknamed smart products are smart kitchen appliances (47.0%), and smart dishwashers (46.7%), smart fridges (43%), and smart washing machines (39.1%), and robot vacuums (33.1%). Smart products from entertainment, home automation, and health categories, such as smart speakers with AI assistant (26.3%), smart power sockets (28.1%), and smartwatches (21.2%), receive fewer nicknames in comparison. Overall, household-related smart devices are most commonly given nicknames, indicating higher perceived familiarity or human-likeness.

5.3.5 Anthropomorphism of Smart Products

Anthropomorphism refers to attributing human characteristics, intentions, or behaviors to non-human entities, such as animals, plants, or technological devices. Anthropomorphism can manifest in various ways, for example by perceiving human features (e.g., a face) in the entity, but also by attributing human abilities or even emotions (e.g., “The robot vacuum wasn’t in a good mood today—it didn’t clean the corner”).

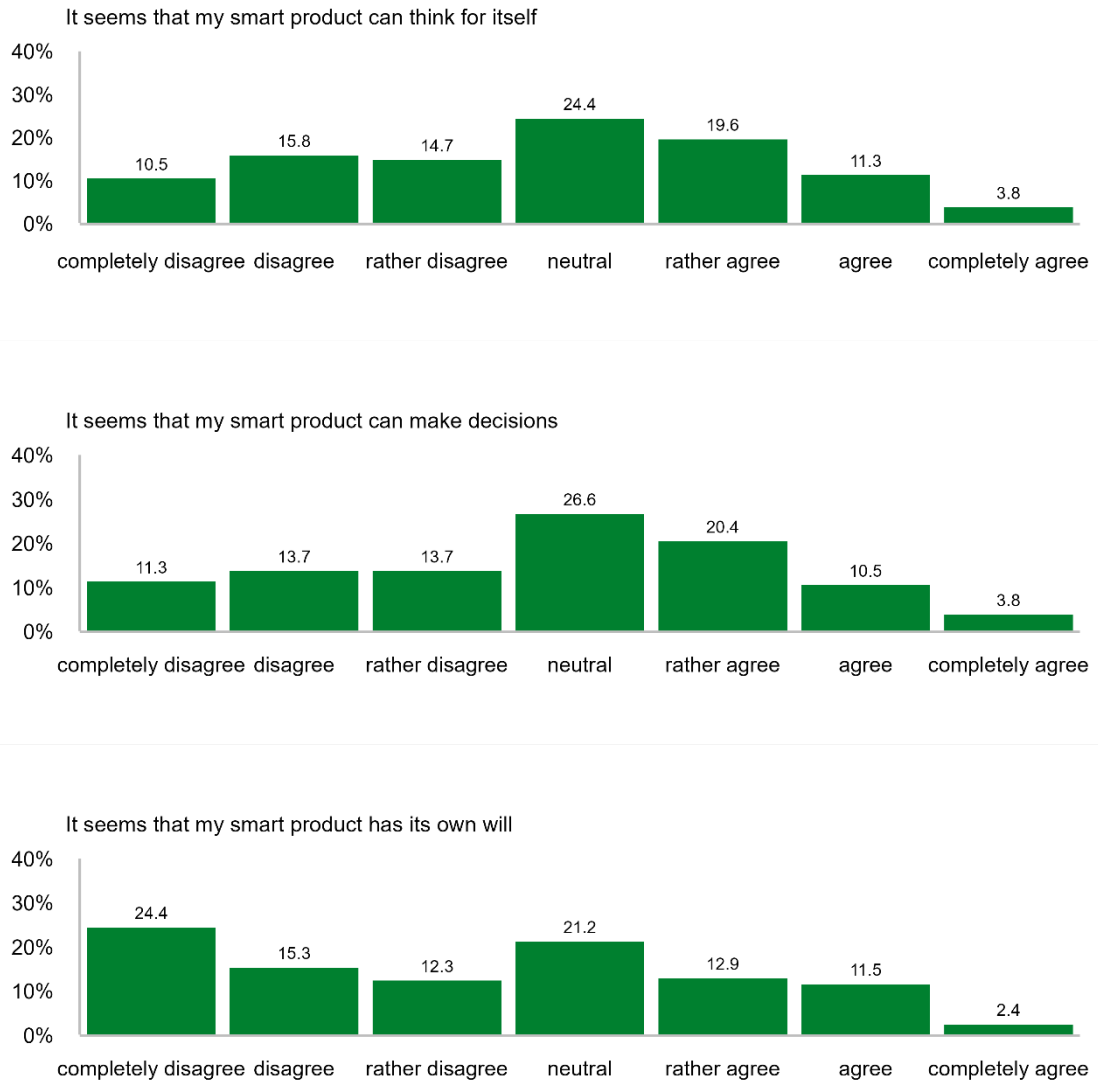


Figure 22: Average anthropomorphism of robot vacuum and smart speaker with AI assistant (robot vacuum and smart speaker users, N = 373). Mean = 3.6 (median = 3.7).

When asked if their smart products seem to be able to think for itself, 34.7% of respondents agree, 24.4% remain neutral, and 41.0% disagree. For the statement that smart products can make decisions, 34.7% agree, 26.6% remain neutral, and 38.7% disagree. 26.8% agree that their smart product has its own will, 21.2% remain neutral, and the majority (52.0%) disagree. Overall, respondents are open to attribute basic human-like capabilities to smart products but clearly hesitant to perceive them as fully autonomous entities.

5.3.6 Social Roles of Smart Products

When interacting with a smart product, the product (e.g. robot vacuum, voice assistant) can sometimes take on a social role. Which role is most applicable? (Multiple answers possible)

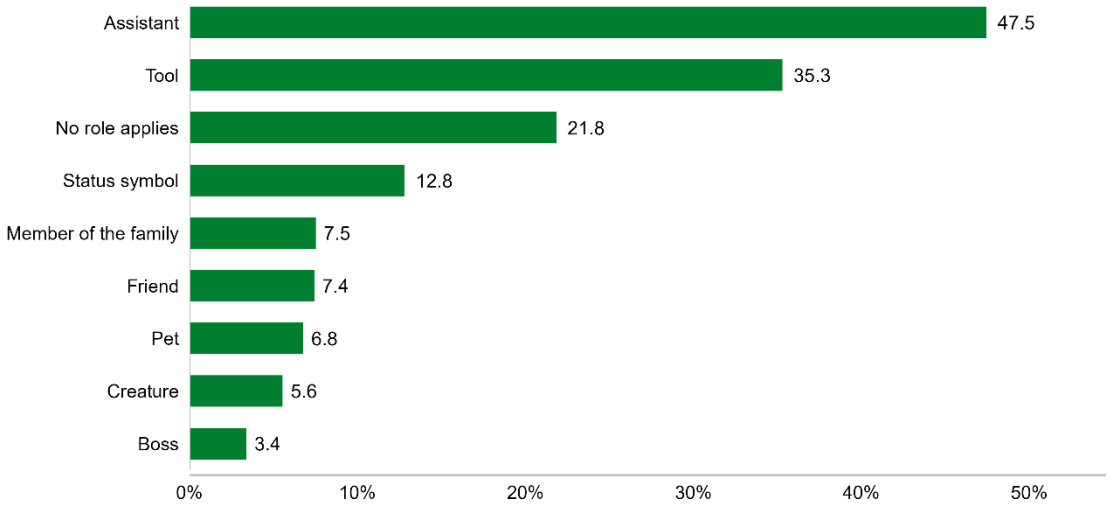


Figure 23: Social roles being associated with smart products (N = 1062). Participants could choose multiple social roles.

When interacting with a smart product (e.g., a robot vacuum or voice assistant), users sometimes perceive the product to take on a social role. The most common perception is that smart products function as assistants (47.5%), followed by smart products functioning as tools (35.3%). A significant portion (21.8%) does not attribute any social role to smart products. 12.8% view smart products as status symbol and some respondents attribute highly social roles to them, such as the role of a family member (7.5%), or a friend (7.4%). while many users primarily view smart products in functional terms, a notable share begin to integrate them into their social world, highlighting the growing emotional and symbolic significance of these technologies in everyday life.

5.3.7 Feelings of Responsibility

Even though smart products are designed to take over tasks for us, users sometimes still feel responsible for their performance. Whether it's a robot vacuum missing a spot or Alexa misunderstanding a command, people sometimes feel responsible for the device's outcome.

To what extent do you agree with the following statements about your robot vacuum / smart speaker with AI assistant?
I feel responsible for the results of my smart robot vacuum / smart speaker with AI assistant.

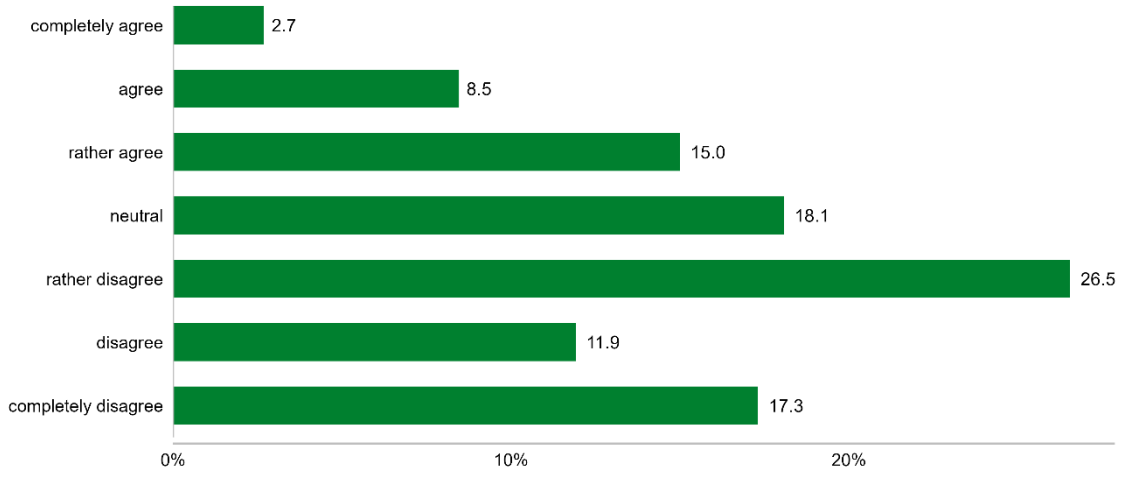


Figure 24: Feelings of responsibility for product outcomes (Robot vacuum users, $n_{\text{robot vacuum users}}$ = 260 and smart speaker users, $n_{\text{smart speaker users}}$ = 167). Feelings of responsibility for both products were aggregated.

Among robot vacuum users and smart speaker users, 11.2% completely agree or agree that they feel responsible for their device's results, with an additional 15.0% rather agreeing that they feel responsible and the largest share (26.5%) remaining neutral in their opinion. In contrast, 11.9% disagree and 17.3% completely disagree with the statement.

6. Geographical Insights

6.1 Use of Smart Products

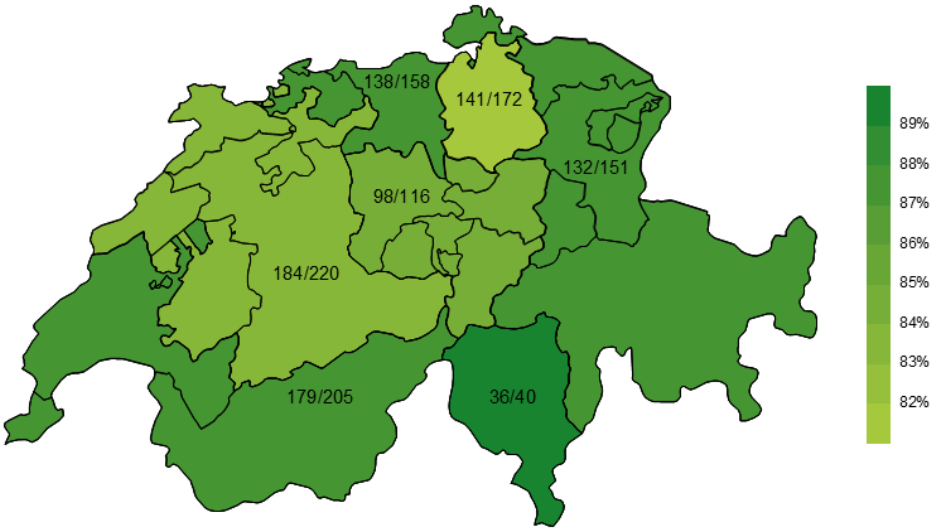


Figure 25: Use of smart products by major region (full sample, N = 1062).[12] The numbers in the map indicate the share of respondents using smart products. The regions are color-coded based on this share.

Smart products are most widely adopted in the Italian-speaking part of Switzerland (90.0%). Western Switzerland and the Lake Geneva region (87.3%), Eastern Switzerland (87.4%), and the North-West Switzerland all show similar usage rates (87.3%). The lowest usage rate is in the Zurich region (82.0%) while Espace Mitteland and Central Switzerland show usage rates between 84.4% and 83.6%. Overall, smart product usage remains high across the country.

[12] Note: Reponses are summarized in the seven major regions defined by the Federal Office for Statistics (with full sample size n per region): Lake Geneva region N = 205, Espace Mitelland N = 220, North-West Switzerland N = 158, Central Switzerland N = 116, Zurich region N = 172, Ticino N = 40, Eastern Switzerland N = 151.

6.2 Use of Chatbots

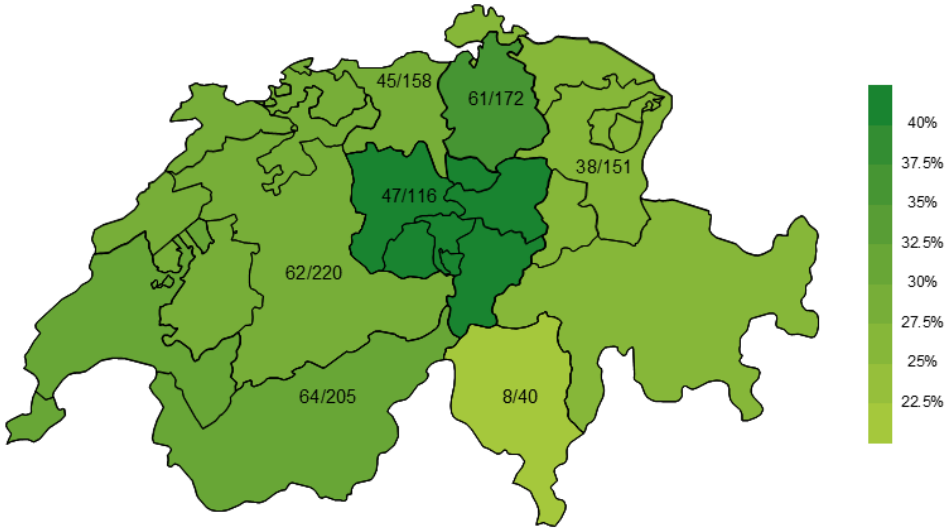


Figure 26: Use of smart products by major region (full sample, N = 1062). The numbers in the map indicate the share of respondents using smart products. The regions are color-coded based on this share.

Usage rates are highest in Central Switzerland (40.5%) and lowest in the Italian-speaking part (20.0%). The Zurich region shows a relatively high usage rate at 35.5%, whereas Eastern Switzerland and Espace Mittelland have lower rates at 25.2% and 28.2%, respectively. Interestingly, smart product and chatbot usage show notable contrasts for different regions in Switzerland: While smart products are most widely adopted in the Italian-speaking part of Switzerland (90.0%), respondents from the Zurich region indicate lowest usage rates (82.0%). In contrast, chatbot usage follows the opposite pattern, with the Italian-speaking part reporting the lowest usage rates (20.0%), while the highest usage is found in the Zurich region (35.5%) and Central Switzerland (40.5%).

6.3 Perceptions of Creepiness, Threat, and Fears

6.3.1 Creepiness

Smart products are creepy.

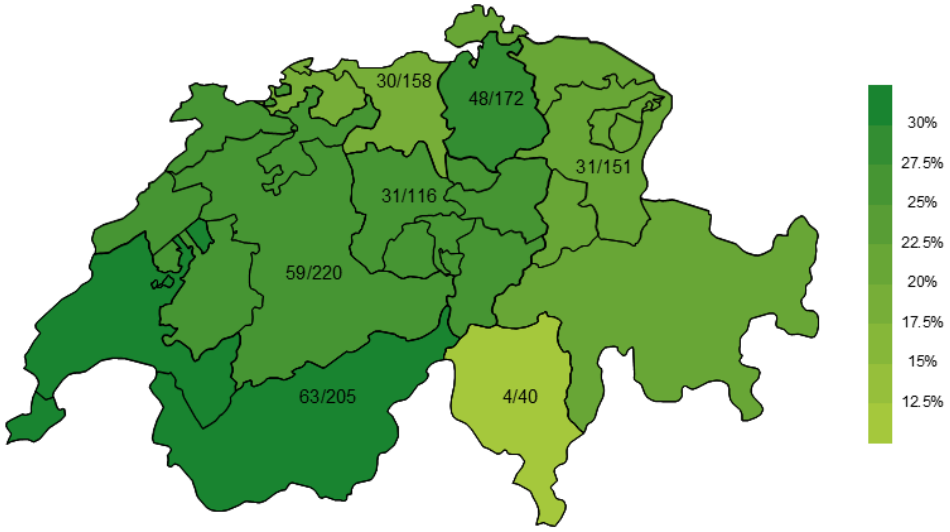


Figure 27: Creepiness with smart products by major region (full sample, N = 1062). The numbers in the map indicate the share of respondents expressing agreement per region. The regions are color-coded based on this share.

The perception of smart products as creepy varies across Switzerland's major regions, with the highest agreement in the Lake Geneva region at 30.7%, followed closely by the Zurich region at 27.9%, and Espace Mittelland (26.8%) and Central Switzerland (26.7%). Ticino shows the lowest level of agreement, with only 10.0%. Overall, perceptions of creepiness vary regionally, being higher in French-speaking parts of Switzerland and Zurich region and notably lower in the southern region of Ticino.

6.3.2 Threat

Smart products are threatening.

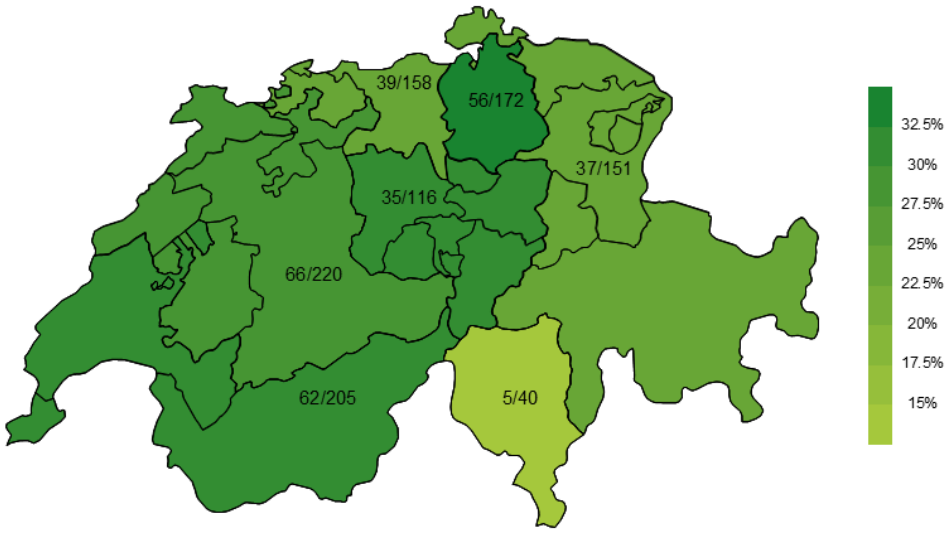


Figure 28: Feelings of threat regarding smart products by major region (full sample, N = 1062). The numbers in the map indicate the share of respondents expressing agreement per region. The regions are color-coded based on this share.

Respondents from the Zurich region agree the most that smart products are threatening (32.6%), followed by Central Switzerland (30.2%) and the Lake Geneva region (30.2%). Respondents from the Italian-speaking part of Switzerland agree the least with threat perception (12.5%). Overall, these results closely resemble the regional patterns observed for perceptions of creepiness, indicating that, similar to 2022, respondents in German- and French-speaking regions express greater concerns about smart products compared to those in the Italian-speaking region.

6.3.3 Fears

6.3.3.1 Unlearning specific activities

The use of smart products leads to people unlearning specific activities (such as cooking or cleaning).

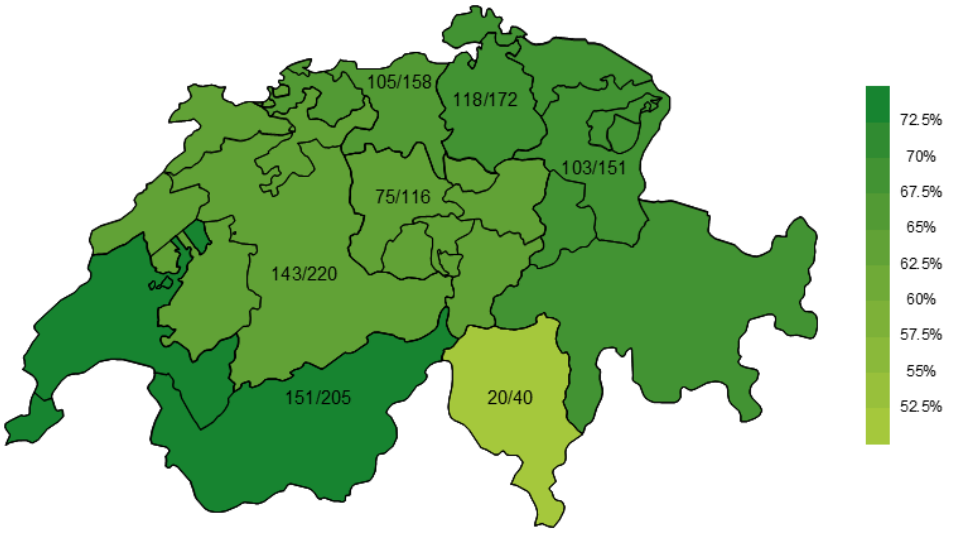


Figure 29: Perception of unlearning specific activity due to use of smart products by major region (full sample, N = 1062). The numbers in the map indicate the share of respondents expressing agreement per region. The regions are color-coded based on this share.

Concerns that smart products lead people to unlearning specific activities (such as cooking or cleaning) differ across Swiss regions. The Lake Geneva region (73.7%) and Zurich region (68.6%) express the highest concerns, followed closely by Eastern Switzerland (68.2%). Again, respondents from Italian-speaking parts are least concerned (50.0%). Overall, respondents in French- and German-speaking regions perceive a stronger negative impact of smart products compared to the Italian-speaking region, similar as regional patterns found for perceptions of creepiness and threat.

6.3.3.2 Decline in Intelligence

The use of smart products leads to people becoming dumber.

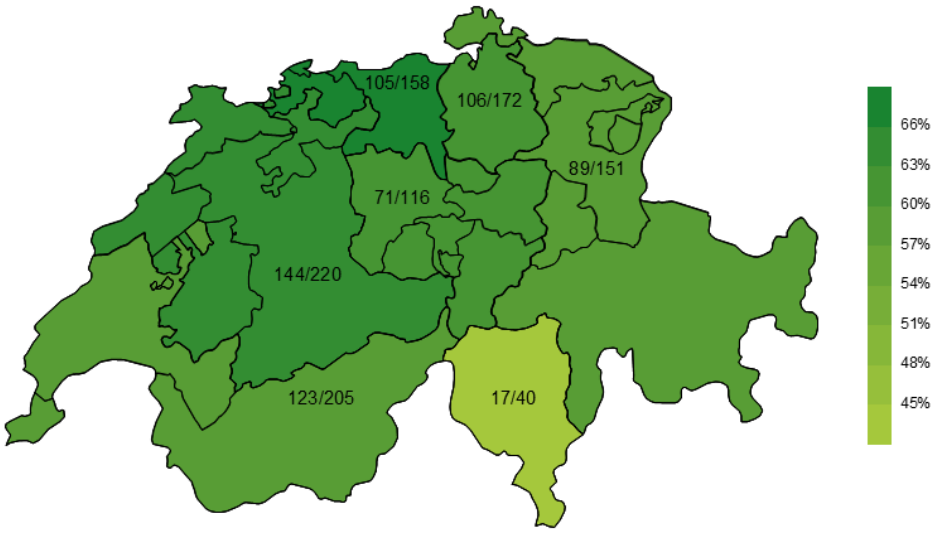


Figure 30: Perception of decline in intelligence due to smart products by major region (full sample, N = 1062). The numbers in the map indicate the share of respondents expressing agreement per region. The regions are color-coded based on this share.

Perceptions that smart products cause people to become dumber vary across Switzerland, with the highest concern in North-West Switzerland at 66.5%, followed by Espace Mittelland (65.5%). The lowest concern is reported in Ticino at 42.5%, while other regions express moderate concerns.

6.3.3.3 Loss of independent thinking

The use of smart products leads to smart products taking over the thinking for people.

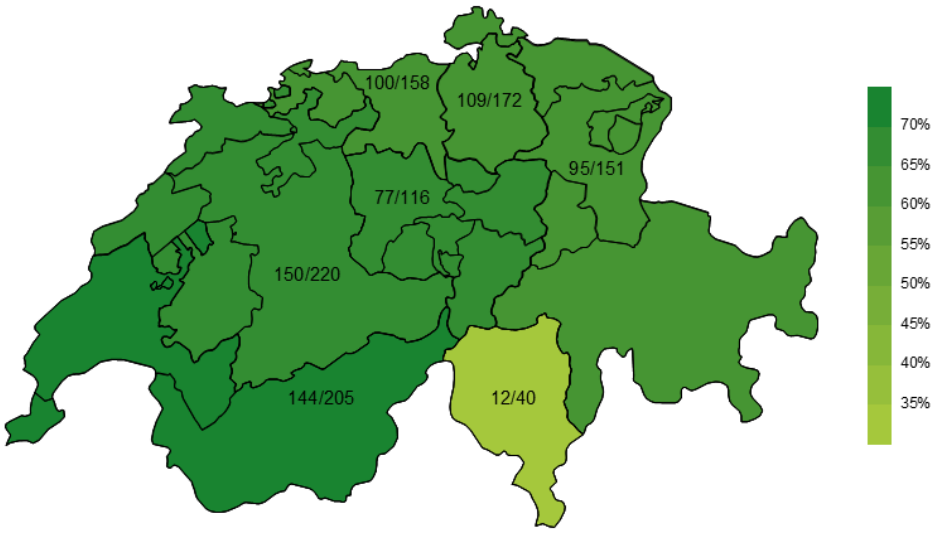


Figure 31: Perception of smart products taking over the thinking for people by major region (full sample, N = 1062). The numbers in the map indicate the share of respondents expressing agreement per region. The regions are color-coded based on this share.

The perception that smart products take over thinking tasks follows a similar pattern as threat and fear perceptions before, with a large share of respondents in the Lake Geneva region (70.2%) expressing concerns, and respondents in Ticino being the region where the lowest share of respondents holding that perception (30.0%).

7. Smart Product Brands

7.1 Leading Brands of Smart Kitchen Devices

Which brand is/are your smart kitchen device/s from? (Multiple answers possible)

Figure 32: Brands of smart kitchen devices; greater word size indicates higher word count (kitchen device users, N = 127). Participants could choose multiple brands. For better visualization, "Vorwerk Thermomix" was shortened to "Vorwerk".[13]

Vorwerk, V-Zug, Bosch, Miele, and Philips are the most popular brands for smart kitchen devices. Other brands such as Siemens, Electrolux, KitchenAid, Xiaomi, and SilverCrest are also included, though with less prominence.

[13] Seven responses were excluded as participants provided incomplete answers or answers that could not be assigned to a brand.

Which brand is/are your smart kitchen device/s from? (Multiple answers possible)

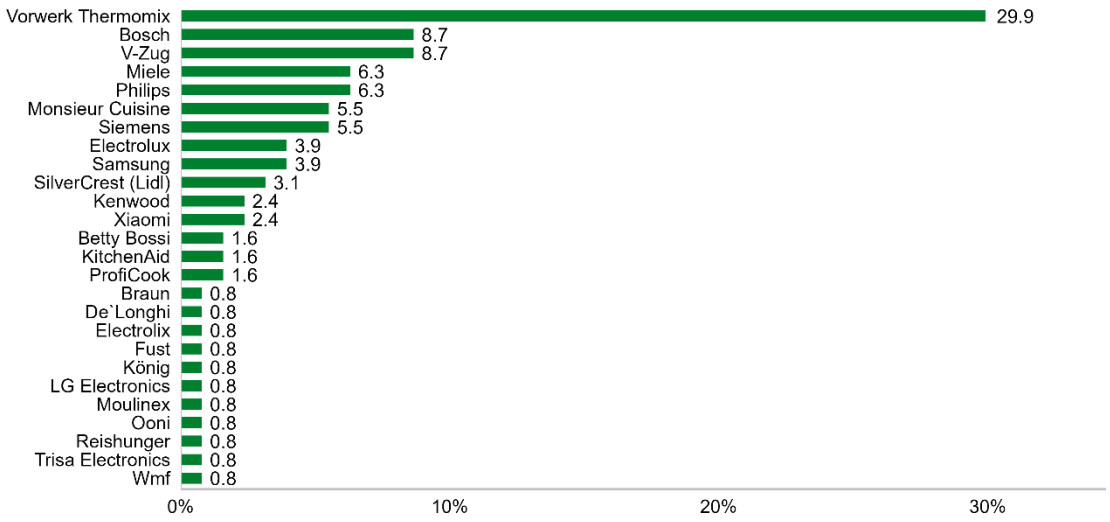


Figure 33: Brands of smart kitchen devices (kitchen device users, N = 127). Participants could choose multiple brands.[14]

Vorwerk Thermomix leads significantly with 29.9%, followed by Bosch and V-Zug, each at 8.7%. Miele and Philips hold both 6.3%, while Monsieur Cuisine, Siemens, and Electrolux fall between 3.9% and 5.5%. Several brands, including Samsung, Kenwood, KitchenAid, Betty Bossi, and DeLonghi, hold minimal shares. The data indicates a highly concentrated market, with Vorwerk dominating and a long tail of smaller competitors.

[14] Seven responses were excluded as participants provided incomplete answers or answers that could not be assigned to a brand.

7.2 Leading Brands of Robot vacuums

Which brand is/are your robot vacuum/s from? (Multiple answers possible)

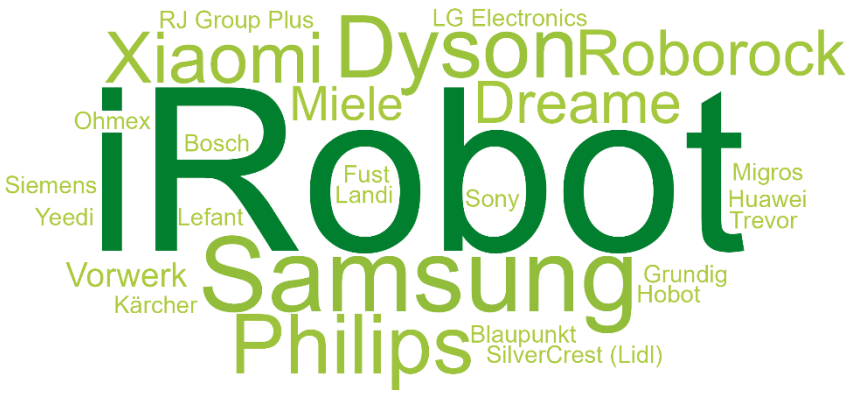


Figure 34: Brands of robot vacuums; greater word size indicates higher word count (robot vacuum users, N = 181). Participants could choose multiple brands.[15]

The most prominent robot vacuum brands are iRobot, Samsung, Dyson, Xiaomi, Philips, Roborock, and Dreame, while several smaller brands like Bosch, Siemens, Kärcher, Huawei, and Yeedi are also represented with lower prominence.

[15] Twelve responses were excluded as participants provided incomplete answers or answers that could not be assigned to a brand.

Which brand is/are your robot vacuum/s from? (Multiple answers possible)

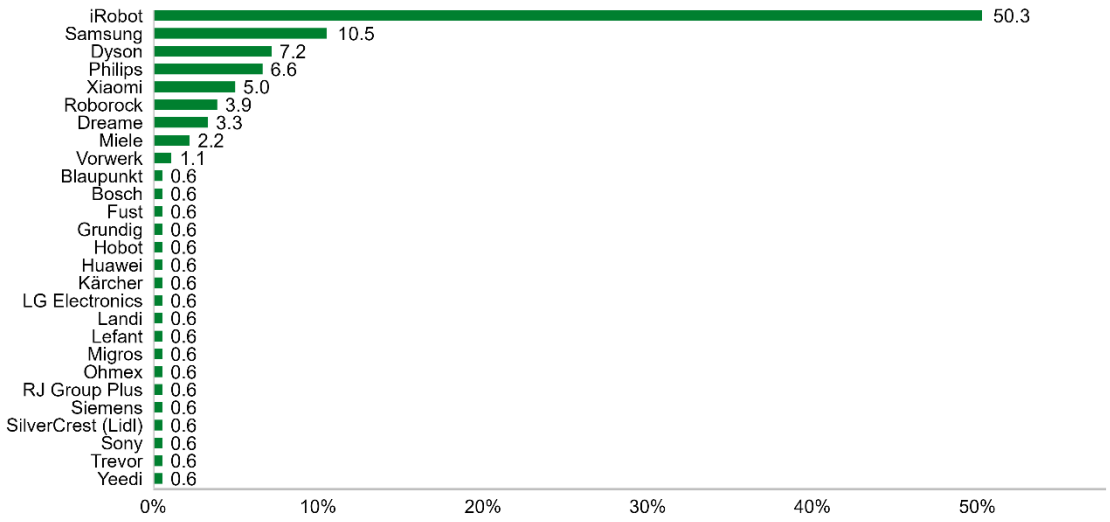


Figure 35: Brands of robot vacuums (robot vacuum users, N = 181). Participants could choose multiple brands.[16]

The most popular brands for robot vacuums are iRobot (50.3%), Samsung (10.5%), Dyson (7.2%), Philips (6.6%), and Xiaomi (5.0%). Other brands like Roborock (3.9%), Dreame (3.3%), Miele (2.2%), and Vorwerk (1.1%) also have notable usage. The market is heavily dominated by iRobot, significantly ahead of all competitors.

[16] Twelve responses were excluded as participants provided incomplete answers or answers that could not be assigned to a brand.

APPENDIX

Appendix A.

Advantages of Smart Products, Individual Items

Where do you see the advantages of using smart products compared to conventional products (e.g., robot vacuum vs. conventional vacuum cleaner)?

- Smart products save time, leaving more time for other things. $Mean_{overall}$ = 6.3, $mean_{users}$ = 6.3, $mean_{non\text{-}users}$ = 6.1
- Smart products offer high comfort and convenience. $Mean_{overall}$ = 5.8, $mean_{users}$ = 5.8, $mean_{non\text{-}users}$ = 5.8
- Smart products enable users to keep up with trends and technology. $Mean_{overall}$ = 4.5, $mean_{users}$ = 4.5, $mean_{non\text{-}users}$ = 4.7
- Smart products are fun. $Mean_{overall}$ = 4.3, $mean_{users}$ = 4.3, $mean_{non\text{-}users}$ = 4.3
- Smart products save costs. $Mean_{overall}$ = 4.2, $mean_{users}$ = 4.2, $mean_{non\text{-}users}$ = 4.1
- Smart products can perform tasks better than users could. $Mean_{overall}$ = 3.9, $mean_{users}$ = 3.9, $mean_{non\text{-}users}$ = 3.9
- Smart products lead to more sustainability. $Mean_{overall}$ = 3.5, $mean_{users}$ = 3.4, $mean_{non\text{-}users}$ = 3.7
- Smart products enable healthier living. $Mean_{overall}$ = 3.4, $mean_{users}$ = 3.5, $mean_{non\text{-}users}$ = 3.4

Average scores of advantage items by clusters

Characteristic	1 N = 421	2 N = 248	3 N = 393	p-value[1]
Smart products enable healthier living				<0.001
Mean (SD)	2.64 (1.45)	4.43 (2.25)	3.67 (1.83)	
Smart products enable following trends and technology				<0.001
Mean (SD)	5.61 (1.57)	4.69 (2.19)	3.30 (1.91)	
Smart products can perform tasks better than users could				<0.001
Mean (SD)	3.60 (2.03)	4.46 (2.27)	3.95 (2.15)	
Smart products lead to more sustainability				<0.001
Mean (SD)	2.53 (1.37)	5.21 (2.14)	3.40 (1.82)	
Smart prodcuts are fun				<0.001
Mean (SD)	5.73 (1.60)	4.16 (2.40)	2.96 (1.80)	
Smart prodcuts save time for other activities				<0.001
Mean (SD)	6.66 (1.64)	4.31 (2.39)	7.07 (1.32)	
Smart prodcuts enable high comfort and convenience				<0.001
Mean (SD)	6.36 (1.42)	3.65 (2.02)	6.60 (1.21)	
Smart prodcuts save costs				<0.001
Mean (SD)	2.87 (1.61)	5.09 (2.29)	5.05 (1.84)	

[1] Kruskal-Wallis rank sum test

Figure 36: Average scores and non-parametric comparison tests (full sample, N = 1062). The standard deviation (SD) is indicated in paratheses.

Appendix B.

Disadvantages of Smart Products, Individual Items

Where do you see the disadvantages/risks of using smart products compared to conventional products (e.g., robot vacuum vs. conventional vacuum cleaner)?

- Smart products are expensive (acquisition, maintenance, etc.). $Mean_{overall}$ = 6.0, $mean_{users}$ = 6.0, $mean_{non\text{-}users}$ = 5.6
- Smart products collect personal data. $Mean_{overall}$ = 4.9, $mean_{users}$ = 5.0, $mean_{non\text{-}users}$ = 4.6
- Smart products perform tasks, reducing user control. $Mean_{overall}$ = 4.4, $mean_{users}$ = 4.4, $mean_{non\text{-}users}$ = 4.6
- Smart products are not so technologically advanced. $Mean_{overall}$ = 4.4, $mean_{users}$ = 4.4, $mean_{non\text{-}users}$ = 4.5
- Smart products are too central in life. $Mean_{overall}$ = 4.2, $mean_{users}$ = 4.2, $mean_{non\text{-}users}$ = 4.4
- Smart products are less effective at performing tasks than users or conventional products. $Mean_{overall}$ = 4.2, $mean_{users}$ = 4.3, $mean_{non\text{-}users}$ = 4.2
- Smart products rarely function as they should. $Mean_{overall}$ = 4.1, $mean_{users}$ = 4.1, $mean_{non\text{-}users}$ = 4.1
- Smart products are complicated to use. $Mean_{overall}$ = 3.7, $mean_{users}$ = 3.6, $mean_{non\text{-}users}$ = 4.0

Average scores of disadvantage items by clusters

Characteristic	1 N = 182	2 N = 254	3 N = 275	4 N = 351	p-value[1]
Smart products collect personal data					<0.001
Mean (SD)	4.97 (2.23)	6.48 (1.43)	1.83 (0.96)	6.17 (1.58)	
Smart products are expensive					<0.001
Mean (SD)	2.20 (0.98)	6.61 (1.30)	6.81 (1.25)	6.78 (1.37)	
Smart products are not so technologically advanced					<0.001
Mean (SD)	5.09 (2.22)	4.89 (2.02)	4.88 (2.11)	3.35 (1.91)	
Smart products are too central in life					<0.001
Mean (SD)	4.62 (2.35)	2.84 (1.75)	4.33 (2.21)	5.01 (2.08)	
Smart products are complicated to use					<0.001
Mean (SD)	4.05 (2.15)	2.81 (1.75)	4.46 (2.17)	3.50 (1.99)	
Smart products are less effective than the user					<0.001
Mean (SD)	4.94 (2.15)	4.83 (2.17)	4.66 (2.08)	3.15 (1.84)	
Smart products reduce user control					<0.001
Mean (SD)	5.15 (2.23)	2.72 (1.44)	4.27 (2.06)	5.46 (1.78)	
Smart products function rarely as they should					<0.001
Mean (SD)	4.98 (2.17)	4.81 (1.98)	4.75 (2.06)	2.59 (1.47)	

[1] Kruskal-Wallis rank sum test

Figure 37: Average scores and non-parametric comparison tests (full sample, N = 1062). The standard deviation (SD) is indicated in paratheses.

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