University of Zurich UZH

IKMZ – Department of Communication and Media Research

Research Report – Media Change & Innovation Division

Awareness of Algorithmic Selection and Attitudes in Switzerland

Report 2 from the Project: The Significance of Algorithmic Selection for Everyday Life: The Case of Switzerland

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Contents

List of Figures

General Introduction to the Project

Algorithms on the internet govern our lives and our realities (Just & Latzer, 2017). They change our perception of the world and affect our behavior by influencing our choices. Consider the selection of online information via search engines, of music and video entertainment content via recommender systems, of products in online shops, or of status messages displayed on social online networks. With their governing power, algorithms on the internet have become an important source and factor of social order in digitized societies (Latzer & Just, 2020).

The benefits of this governance *by* algorithms in everyday life are accompanied by potential risks like manipulation, bias, discrimination or threats to privacy, which call for an adequate governance *of* algorithms (Latzer et al., 2016; Saurwein, Just & Latzer, 2015).

Governance *by* and governance *of* algorithms

The project "The Significance of Algorithmic Selection for Everyday Life: The Case of Switzerland" empirically explores the significance of internet-based applications that build on automated *algorithmic* selection, essentially defined as the assignment of relevance to selected pieces of information. It provides empirical evidence for assessing the possible risks and the societal groups that may be particularly affected by them. It thereby provides the basis for a more evidence-based governance of algorithms.

Empirical project on the significance of algorithmic selection for everyday life

The project is based on a representative survey of Swiss internet users conducted between December 2018 and January 2019. It is conceptually grounded in a measurement model for the significance of algorithmic selection for everyday life based on five variables (Latzer & Festic, 2019): usage of algorithmic-selection applications, the subjective significance assigned to them, awareness of algorithmic selection, awareness of associated risks, and practices to cope with these risks (see Figure 1).

Figure 1: Measurement model for the significance of algorithmic selection for everyday life

Algorithmic-selection applications serve a variety of purposes in everyday life. To reflect these diverse ways of how daily activities are influenced by algorithmic-selection applications, this project evaluates their significance in five life domains: social and political orientation, commercial transactions, socializing, entertainment, and health (see Figure 2).

Figure 2: Five domains of everyday life
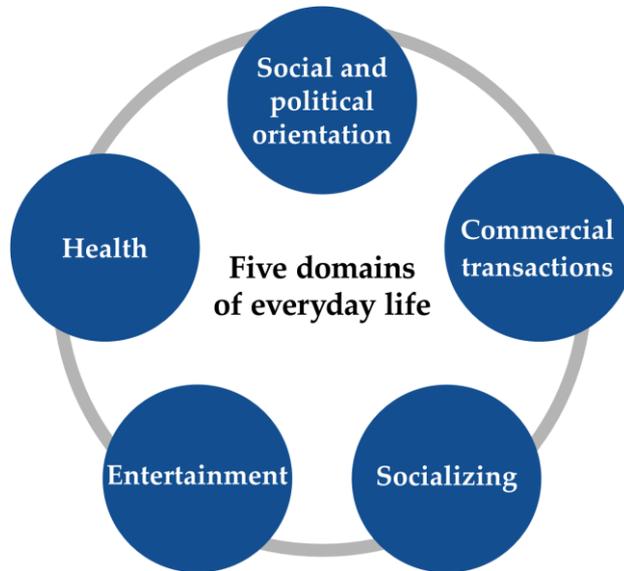
In accordance with the measurement model for the significance of algorithmic selection for everyday life, four thematic reports summarize the main results of the survey (see Figure 3):

Figure 3: Four reports on the significance of algorithmic selection for everyday life

I)	Use and Assigned Relevance of Algorithmic-Selection Applications in Switzerland.
II)	Awareness of Algorithmic Selection and Attitudes in Switzerland.
III)	Awareness of Risks Related to Algorithmic Selection in Switzerland.
IV)	Coping Practices Related to Algorithmic Selection in Switzerland.

Executive Summary – Report 2

The majority of Swiss internet users have experienced algorithmic selection

–Two thirds of internet users (66%) feel that they are shown content online that is similar to what they have looked at before.

–Half of internet users (54%) have the impression that search results (e.g., Google Search) have been sorted specifically for them. Highly-educated internet users experience this type of algorithmic selection more often than low-educated users.

–Over a third of internet users (36%) believe that online content matches their interests. This feeling is more common among young internet users.

Mass media, friends and family are key sources of exposure to algorithmic selection as a topic

–Half of internet users (51%) have learned about algorithms via traditional mass media such as newspapers or television. Exposure to the topic through these channels increases with age.

–Over a third have discussed the topic with their friends and family (37%) or have heard something about algorithms at school, at university or at work (34%). This applies especially to young internet users and internet users with a high level of educational attainment.

Nine out of ten users know of personalized recommendations

–90% of Swiss internet users know that internet services can tailor their recommendations to users' personal interests.

–Similarly, 85% know that personal characteristics can influence the content that one sees online.

–However, a fifth of users (19%) are unsure whether Google searches for the same terms lead to the same results for everyone.

–A third of users (33%) are unsure whether they can actively influence what content is displayed in their feed on Facebook or similar services.

–Only a fifth (19%) know that Facebook and similar services do not employ people to compose the news feed for individual users.

–Knowledge about how algorithmic-selection applications work is lower among women than among men. Young and highly-educated users are also more knowledgeable.

Three quarters of internet users say they understand the term "algorithm"

–The majority of internet users report that they understand terms that relate to algorithmic selection. For example, 75% of internet users say they understand the term "algorithm".

–Generally, young, male Swiss internet users and those with high educational attainment indicate a greater understanding of terms related to algorithmic selection.

The majority think that other people are exposed to greater dangers on the internet than they are

–More than half of Swiss internet users say that they have nothing to hide (55%) and that other people are exposed to greater dangers on the internet than they are (54%).

–The vast majority (79%) of Swiss internet users think that their personal data is of interest for companies like Google or Facebook.

–Four out of ten (41%) sometimes feel as if services like Google Search or Facebook are able to read their minds and a quarter (25%) agree that recommendations or personalized ads sometimes feel like witchcraft to them.

Eight out of ten internet users are glad the internet exists

–Swiss internet users appear to be rather cyberoptimistic than cyberpessimistic. For example, 84% are glad that the internet exists.

–Two thirds (67%) agree that the internet is a good thing for society.

–Cyberoptimism is greater among internet users with medium or high levels of educational attainment. Men tend to be more cyberoptimistic than women.

–At the same time, six out of ten (60%) internet users voice cyberpessimism in the sense that they believe that one has to accept that there is no privacy on the internet.

Internet users prefer recommendations from family and friends to automated online recommendations for entertainment and purchasing decisions

–A quarter of internet users (26%) state that news articles that are recommended to them increase the diversity of their information and views.

–Only 9% say that they predominantly like to consume news that is in line with their own (political) opinions online. Young and low-educated users, however, do so to a larger extent.

–Regarding entertainment and purchasing decisions, internet users prefer recommendations from friends, family or colleagues to automated online recommendations.

–Young internet users have more favorable views towards automated online recommendations.

1 Experiences with Algorithmic Selection

This report discusses the experiences with, exposure to, awareness of and attitudes towards algorithmic selection. As a first step, the report examines internet users' encounters with algorithmic selection in their everyday internet use. The respondents were asked to indicate the extent to which they agree with a list of statements about their daily internet experiences. Figure 4 shows the percentage of Swiss internet users who agree or strongly agree with the following statements:

Figure 4: Experiences with algorithmic selection during everyday internet use in Switzerland
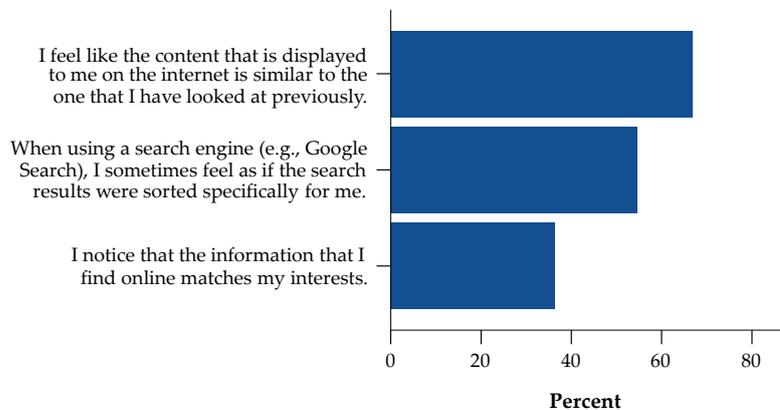
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

–Two thirds of Swiss internet users (66%) feel like the content that is displayed to them online is similar to what they have previously looked at.

–More than half of Swiss internet users (54%) feel that they receive search results that were sorted specifically for them.

–Over a third (36%) agree that the information they find online matches their interests.

Figure 5 shows how these experiences vary across different age groups:

Two thirds think that online content displayed to them is similar to what they have looked at before on the internet

Figure 5: Experiences with algorithmic selection during everyday internet use by age
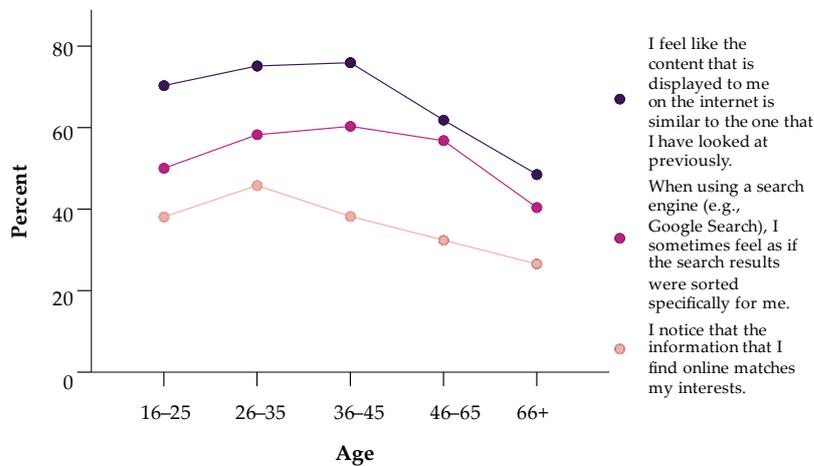
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– Generally, internet users between 26 and 45 report having more experiences with algorithmic selection during their everyday internet use than all other age groups. In comparison, members of the youngest and particularly of the oldest age groups tend to have fewer encounters with algorithmic selection.

– For example, while half of the youngest age group (50%) sometimes feel as if search results were sorted specifically for them, 60% of the 36–45 age group feel the same.

– Internet users aged 66 and over least agree that online information matches their interests (26%) and that their search results are sorted specifically for them (40%).

Differences in experiences with algorithmic selection with regard to education were also detected, but there are no systematic trends:

– Six out of ten users (60%) with high educational attainment feel that their search results are sorted for them, while only 45% of Swiss internet users with a low level of educational attainment agree.

– Swiss internet users with low educational attainment (41%) agree slightly more often that the information they find online matches their interests than those with high educational attainment (36%).

Differences with regard to gender were slightly less pronounced:

– Six out of ten male internet users (60%) agree that they sometimes feel as if search results have been specifically sorted for them, whereas only almost half of women (49%) feel the same way.

– At the same time, men (68%) and women (65%) feel like the content displayed to them on the internet is similar to what they have previously looked at and agree that the information they find online matches their interests (37% and 35% respectively) to a similar extent.

Age group 26–45 reports the most experiences with algorithmic selection during everyday internet use

Highly educated users feel like they receive search results specifically sorted for them more often

2 Exposure to Algorithmic Selection as a Topic

Apart from analyzing internet users' experiences with algorithmic selection in their everyday life, this report takes a closer look at their exposure to algorithmic selection as a topic. The respondents were asked about the circumstances under which they have come across this topic. To prevent confusion and misunderstandings, they were given a brief description of what algorithms do and what they are used for: the questionnaire explained that algorithms automatically collect and use data to supply personalized recommendations, tailored content, and advertisements. Figure 6 shows the percentage of Swiss internet users who agree or strongly agree with the different statements:

Figure 6: Exposure to algorithmic selection as a topic in Switzerland
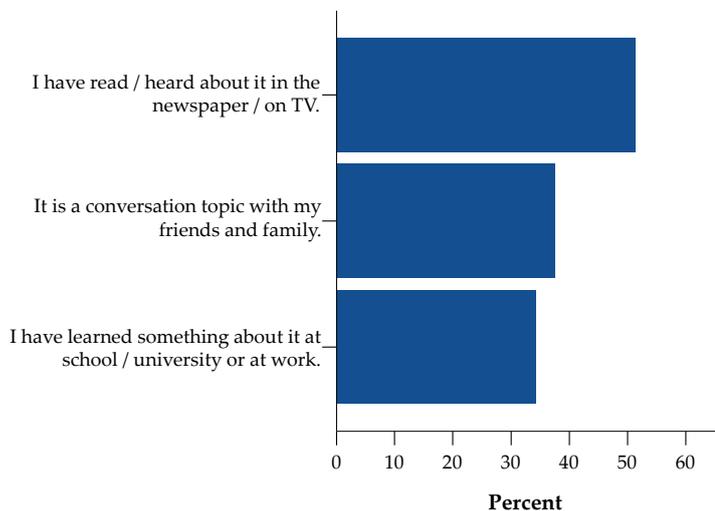
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– Half (51%) of Swiss internet users report that they have read or heard about topics surrounding algorithmic selection in traditional news outlets such as in newspapers or on television.

– For 37%, it is a topic in conversations with friends and family.

– A third (34%) have learned about it either at school / university or at work.

Differences in the agreement with these statements regarding age, education, and gender were found:

– The percentage of internet users who have read or heard about algorithmic selection in newspapers or on TV is the highest among the oldest age group (66+) and amounts to two thirds (67%). In the youngest age group, only 45% have been exposed to the topic through these channels.

– Exposure at school / university or work is greater among young users: while 48% of those aged between 16 and 25 have come across the

The mass media are key sources of exposure to algorithmic selection

Older internet users are more exposed to topics surrounding algorithms through the mass media

topic at their place of education or at work, this percentage amounts to only 23% in the oldest age group of 66 and over.

– Highly-educated internet users are more exposed to the topic through traditional mass media such as newspapers or TV: while four out of ten users with low educational attainment (43%) have come across the topic through these channels, 60% of the highly-educated indicated the same.

Exposure to algorithmic selection as a topic through newspapers and TV is more common among users with high educational attainment

– More highly-educated internet users (42%) than low-educated ones (35%) have been exposed to the topic of algorithms at school / university or at work, too.

– Six out of ten male internet users (60%) have come across the topic of algorithmic selection in newspapers or on TV, while only four out of ten female users (41%) have. However, both men (38%) and women (36%) equally often say that algorithms are a conversation topic with family and friends.

Fewer women than men have heard about algorithms through the mass media

3 Awareness of Algorithmic Selection: Knowledge and Understanding

Besides documenting internet users' experiences with algorithmic selection and their exposure to the topic as such, this survey aims at identifying internet users' awareness of algorithmic selection. Awareness of algorithmic selection was measured on the one hand by knowledge about how algorithmic-selection applications work (Figures 7–11) and on the other hand by the respondents' understanding of terms related to algorithmic selection (Figures 12–13).

In order to measure internet users' knowledge about algorithmic selection, the respondents received a list of statements. For each of these, they had to indicate whether they thought it was correct or incorrect. They also had the option to say that they were unsure. In order to receive more honest results, the respondents were told that these questions are used to develop an information campaign and that it is therefore important that they indicate whether they were unsure about the accuracy of a statement truthfully. The survey also asked respondents not to use any help when assessing the accuracy of the statements. Figure 7 shows the shares of internet users who evaluated a statement correctly, incorrectly, or were unsure about its accuracy. The green ticks and red crosses behind each statement indicate whether the respective statement is true or false. In the following, together with the share of internet users who evaluated a statement correctly, a brief explanation of each statement and whether it is true or not is provided.

Figure 7: Knowledge about algorithmic selection in Switzerland
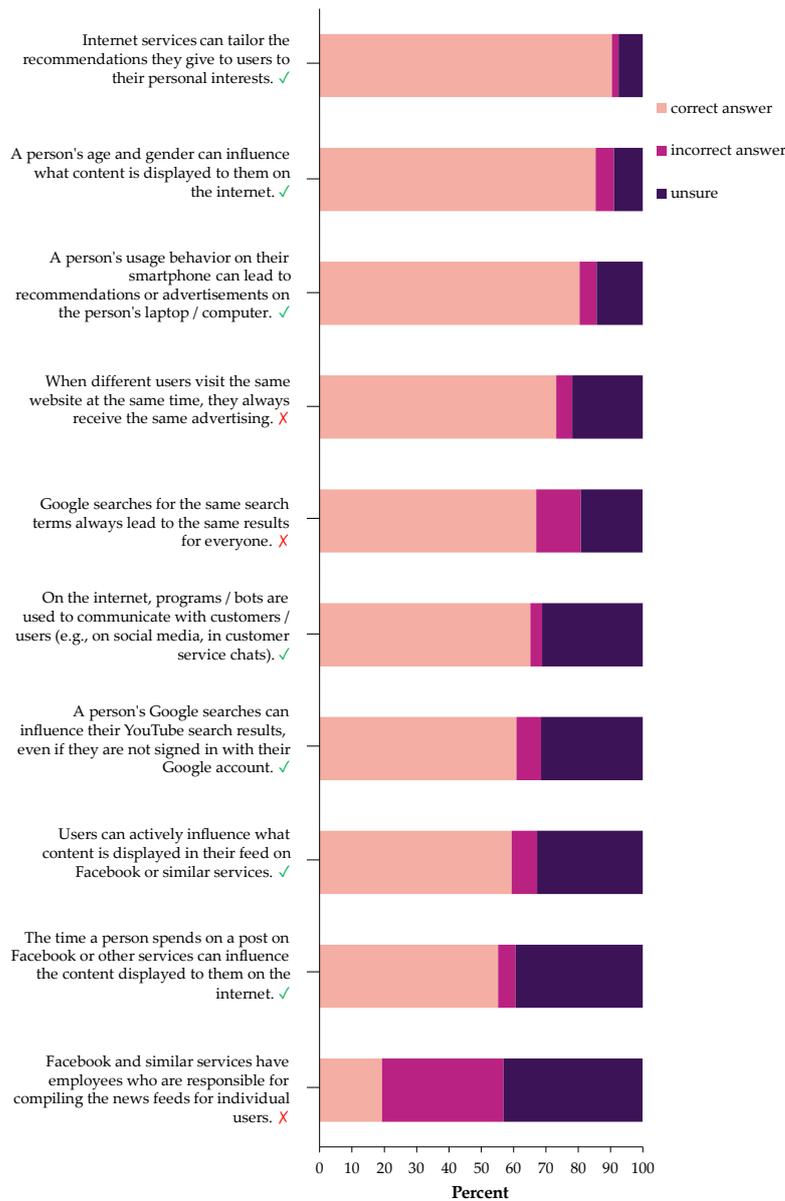
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– The statement "Internet services can tailor the recommendations they give to users to their personal interests" is true. Internet services can give personalized recommendations based on what a person has searched for and looked at before. Almost all of the respondents (90%) assessed this statement correctly.

– Almost as many respondents seemed to be informed about the influence of personal characteristics—if shared on the internet in some capacity—on the content that is displayed online: the statement "A person's age and gender can influence what content is displayed to them on the internet" is true, which 85% of the respondents assessed correctly.

– The statement "A person's usage behavior on their smartphone can lead to recommendations or advertisements on the person's laptop/

Nine out of ten Swiss internet users know that internet services can tailor recommendations to users' personal interests

computer" is true as well. User data is collected across different devices to generate personalized recommendations or advertisements. The majority of the respondents (80%) assessed this statement correctly.

– The statement "When different users visit the same website at the same time, they always receive the same advertising" is false. The allocation of advertisements tends to be personalized on most commonly used websites. Three quarters (73%) of the respondents assessed this statement correctly.

– The statement "Google searches for the same search terms always lead to the same results for everyone" is also false. Google Search results are influenced by factors like location and browsing history. Two thirds of the respondents (67%) rated this statement correctly. 14% of Swiss internet users, however, assessed it incorrectly. Additionally, a fifth (19%) were unsure about the accuracy of this statement.

A third of Swiss internet users do not know or are unsure about whether Google personalizes search results

– The respondents were then asked about their knowledge on the application of bots online: the statement "On the internet, programs / bots are used to communicate with customers / users (e.g., on social media, in customer service chats)" is true. A growing number of companies use bots or other programs to reply to customer requests and questions. Two thirds (65%) of the respondents evaluated this correctly. Almost a third (31%) of Swiss internet users, however, were unsure about the application of bots, while 4% evaluated the statement incorrectly.

– The statement "A person's Google searches can influence their YouTube search results, even if they are not signed in with their Google account" is also true. The browsing history or other (meta-)data of a person can influence the results they receive on different sites. The majority of the respondents (61%) evaluated this statement correctly. A third (32%) were unsure about the correctness of this statement, while 8% evaluated the statement incorrectly.

– Another statement concerned the social media feed: "Users can actively influence what content is displayed in their feed on Facebook or similar services." This statement is true. Users can influence the content in their feed by subscribing to or unsubscribing from accounts and choosing what they want or do not want to see. More than half of the respondents (59%) assessed this statement correctly, while a third (33%) were unsure and 8% evaluated the statement incorrectly.

A third of Swiss internet users are unsure whether users can actively influence what content is displayed in their Facebook feed

– The statement "The time a person spends on a post on Facebook or other services can influence the content displayed to them on the internet" is also true. Behavior on such applications is analyzed in order to suggest content to users that they are likely to be interested in. Four out of ten users (44%) were unsure about the accuracy of the statement (39%) or evaluated it incorrectly (5%), while the majority (55%) assessed the statement correctly.

– The next statement also concerned social media: "Facebook and similar services have employees who are responsible for compiling

the news feeds for individual users." This statement is false. Facebook's algorithm automatically curates users' news feeds. The biggest share of the respondents (43%) were unsure whether this statement is true and almost as many assessed the statement incorrectly (38%). Only a fifth of the respondents (19%) knew that Facebook does not have employees who put together individual newsfeeds for users.

Altogether, the share of Swiss internet users who reported uncertainty about the accuracy of the statements was always bigger than the share of those who evaluated the statements incorrectly. This finding indicates a sense of uncertainty when it comes to the functionality of widely-used algorithmic-selection applications.

Figure 8 summarizes how many statements the respondents evaluated correctly:

Figure 8: Knowledge about algorithmic selection: scores
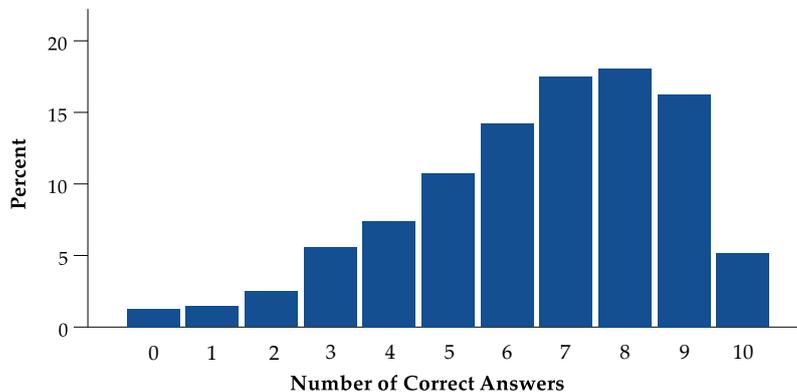
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– On average, the respondents assessed 6.5 out of 10 statements correctly.
– Only a fifth of the respondents (18%) evaluated zero to four statements correctly, which indicates low knowledge of algorithmic selection.
– Four out of ten (42%) are in the group with medium knowledge of algorithmic selection. They evaluated five to seven statements correctly.
– Equally as many (39%) indicated high knowledge of algorithmic selection by assessing eight to ten statements correctly.

The knowledge scores that the respondents achieved varied with their sociodemographic background:

On average, the respondents assessed 6.5 out of 10 statements on the functionality of algorithmic selection correctly

Four out of ten indicate high knowledge of algorithmic selection

Figure 9: Knowledge about algorithmic selection: scores by gender
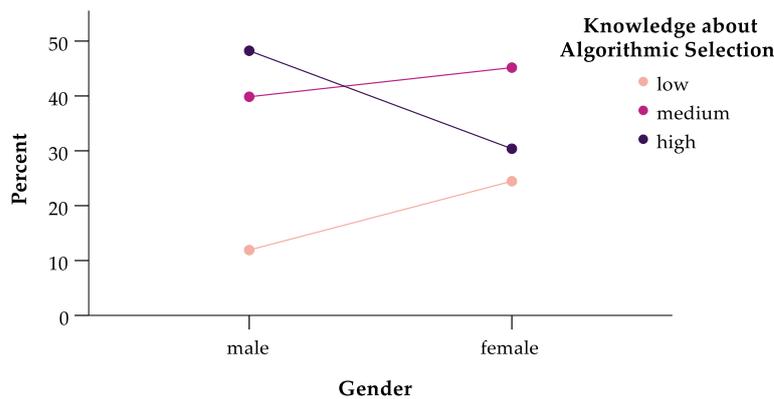
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– Women generally had lower knowledge of algorithmic selection than men.

– While almost half of the male respondents (48%) assessed at least eight statements correctly, only 30% of the women reached such a high score.

Women have lower knowledge scores on algorithmic selection

Figure 10: Knowledge about algorithmic selection: scores by age
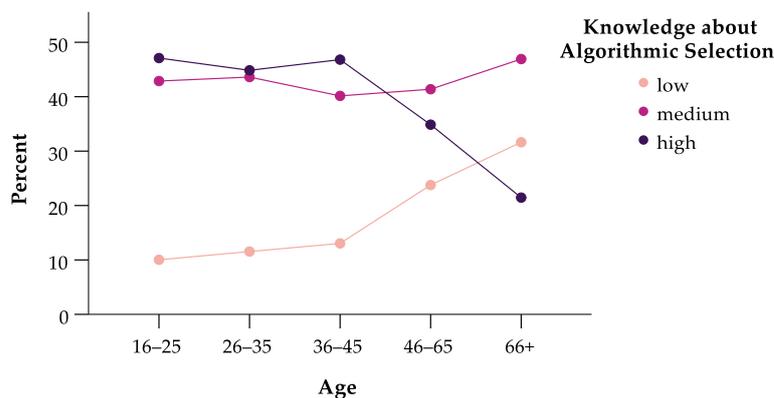
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– Knowledge about algorithmic selection was greater among young respondents and lower among older ones.

– Almost half of the respondents under 46 (45–47%) rated at least eight of the statements correctly. This share was lower for the 46–65 age group (35%) and only a fifth (22%) of the oldest age group had high knowledge of algorithmic selection.

– While only one out of ten (10–12%) of the 16–35 age group had low knowledge about algorithmic selection, a third (32%) of the respondents aged 66 and over did.

Knowledge about algorithmic selection is greater among young users

Figure 11: Knowledge about algorithmic selection: scores by educational attainment
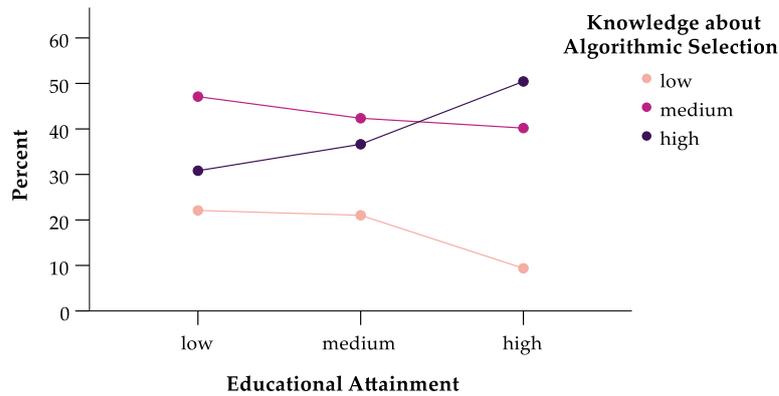
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

–Swiss internet users with high levels of educational attainment had better knowledge of algorithmic selection than the medium- or low-educated.

–The share of internet users with low knowledge about algorithmic selection was twice as big in the low and medium educational groups (22% and 21%, respectively) compared to the high educational group (9%).

–While half of the respondents with high educational attainment (50%) assessed at least eight of the statements correctly, only 31% of the low-educated and 37% of the medium-educated group did.

Knowledge about algorithmic selection is greater among the highly educated

In addition to these measures of knowledge about algorithmic selection, the respondents were asked about their understanding of different algorithm-related terms. For each term, they gave a rating on a scale from 1 to 5, where 1 equals "no understanding" and 5 means "full understanding". Figure 12 shows the percentage of internet users who reported understanding or fully understanding the respective algorithm-related terms.

Figure 12: Understanding of terms related to algorithmic selection in Switzerland
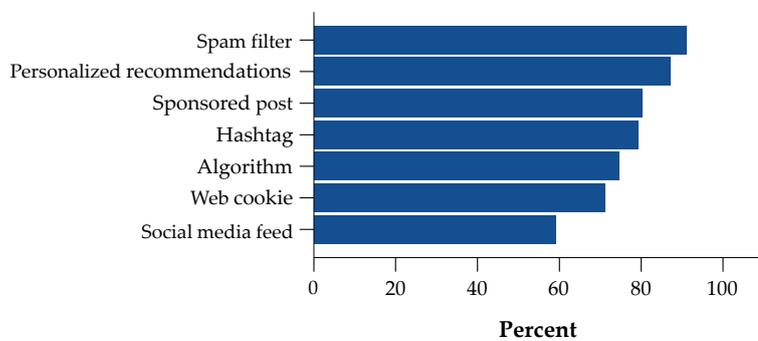
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

–For all terms, more than half of the respondents indicated that they (fully) understand them.

- Nine out of ten Swiss internet users (87%) reported that they (fully) understand the term "personalized recommendations".
- Three quarters (75%) reported understanding or fully understanding the term "algorithm".[1]
- In contrast, only 59% of the respondents indicated that they (fully) understand the term "social media feed".

There are differences in the understanding of algorithm-related terms among internet users with different sociodemographic backgrounds:

Three quarters of Swiss internet users understand the term "algorithm"

Figure 13: Understanding of terms related to algorithmic selection by gender
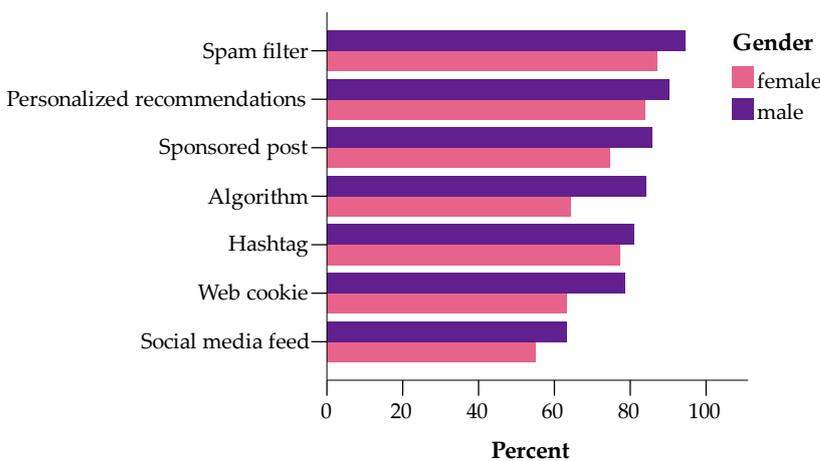
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

- Women consistently rated their understanding of algorithm-related terms lower than men.
- For instance, while 64% of women indicated that they understand the term "algorithm", 84% of men reported understanding it.

Women rate their algorithm-related understanding lower than men

There were also differences with regard to age and education:

- The youngest age group (16–25) generally indicated better understanding the terms related to algorithmic selection. The term "spam filter" was an exception: while 86% of the youngest group reported (fully) understanding the term, this share was greater in all other age groups (e.g., 94% for the 46–65 age group).
- With regard to education, the high educational group generally indicated the highest percentage of understanding. For example, more highly-educated users (85%) than low-educated ones (70%) understand the term "algorithm" according to their self-reports.

Understanding of algorithm-related terms is greater among young and highly educated users

[1]Similarly, a representative survey of German internet users showed that a majority (72%) of the population agreed that they have heard of the term "algorithm" before, while 56% stated that they barely know anything about algorithms (Fischer & Petersen, 2018). In contrast, a study conducted in the Netherlands in 2018 revealed that only 10% of the respondents said they had some or a lot of knowledge about algorithms (Araujo et al., 2018). In the EU generally, 48% say they do not know what an algorithm is (Grzymek & Puntschuh, 2019).

Results for both measures of awareness of algorithmic selection—knowledge about algorithmic selection and understanding of related terms—revealed that male, young, and highly-educated Swiss internet users are more aware of algorithmic selection. While the self-reported understanding of related terms was rather high, results on the knowledge questions revealed that the actual knowledge on how algorithmic selection is used in common online applications is more limited.

Awareness about algorithmic selection is relatively low and unequally distributed among Swiss internet users. Traditionally disadvantaged groups (female, old and low-educated internet users) tend to know less about how algorithmic selection works and understand related terms less. At the same time, algorithmic-selection applications are widely and extensively used by almost all Swiss internet users (see Report 1). This finding raises questions on the implications and risks associated with using applications without being very aware of how they work (see Report 3).

4 Internet- and Algorithm-Related Attitudes

Swiss internet users rely on a wide range of algorithmic-selection applications on the internet for various everyday activities. After having investigated their awareness of algorithmic selection, this report examines Swiss internet users' attitudes towards algorithms and the internet. Figure 14 shows the percentage of Swiss internet users who agree or strongly agree with the respective statements that reflect attitudes towards the internet in general.

Figure 14: General attitudes towards the internet in Switzerland
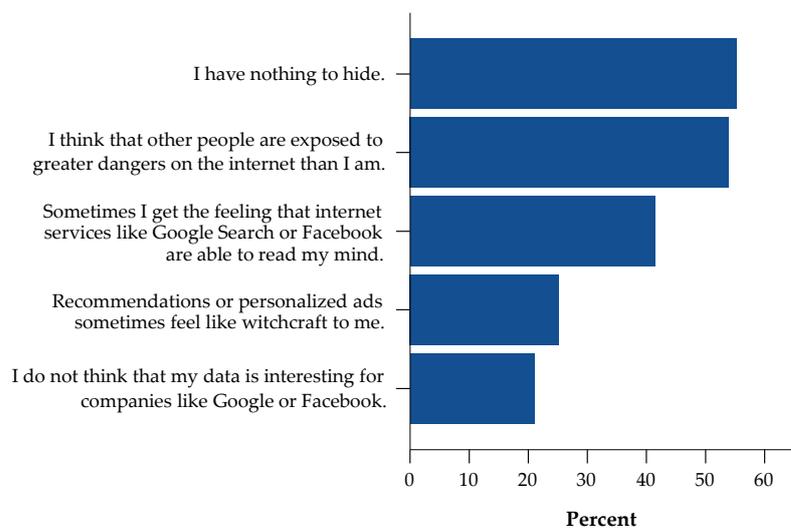
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– More than half of Swiss internet users (55%) agree that they have nothing to hide.
– Also, about equally as many (54%) think that other people are exposed to greater dangers on the internet than they are.
– Four out of ten Swiss internet users (41%) state that they sometimes feel as if services such as Google Search or Facebook are able to read their minds.
– A fifth of Swiss internet users indicate that their data is not interesting for companies like Google or Facebook (21%) and a quarter agree that recommendations or personalized ads sometimes feel like witchcraft to them (25%).

There were differences between societal groups regarding attitudes towards the internet in general:

– With regard to age, there were no major differences for most statements. There were some exceptions: fewer internet users of the youngest group aged 16 to 25 (18%) believe that their data is not interesting for companies like Google or Facebook than users in the oldest group, aged 66 and over (38%). Moreover, members of the youngest group (39%) agree more that they sometimes feel as if

Four out of ten think that Google Search or Facebook can read their minds

companies such as Google or Facebook are able to read their minds than the oldest group (27%) do.

– More members of the low educational group (64%) than of the highly-educated group (51%) think that other people are more exposed to dangers on the internet than they are themselves.

– Female Swiss internet users agree that they have nothing to hide (60%) more often than male (50%). Women (25%) also believe more strongly than men (17%) that their data is not interesting for companies like Google and Facebook.

In addition to these relatively general statements on attitudes towards the internet, the survey included questions on the agreement with statements that express cyberoptimism and cyberpessimism. Figure 15 shows the percentage of Swiss internet users who agree or fully agree with the respective statements:

Figure 15: Attitudes towards the value of the internet in Switzerland
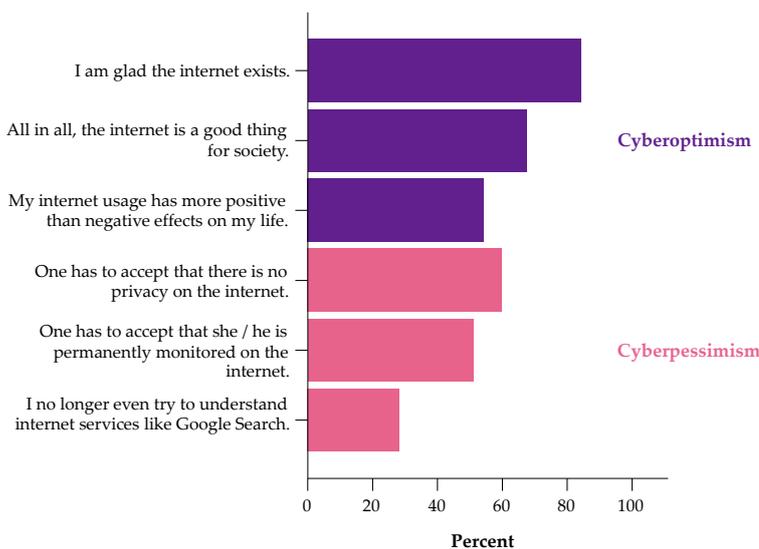
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

Using the internet and especially algorithmic-selection applications can yield advantages and make life easier in many ways. What percentage of the Swiss population share such cyberoptimistic views?

– The majority of Swiss internet users agree with the cyberoptimistic statements. For example, 84% are glad that the internet exists and 67% think that the internet is generally a good thing for society. More than half (54%) state that their internet usage has more positive than negative effects on their life.

– Agreement with the cyberoptimistic statements is generally equally distributed in all age groups. However, while half (48%) of the 16–25 age group and 56% of the 26–35 age group agree that their internet usage has more positive than negative effects on their own lives, 63% of the oldest internet users (66+) state the same.

Eight out of ten are glad the internet exists

– Internet users with low educational attainment are less cyberoptimistic than those with a medium or high educational attainment. For instance, while 46% of the low-educated users think their internet usage has more positive effects on their lives, 64% of those with a high level of educational attainment think so.

– Men tend to be more cyberoptimistic than women. For example, more men (59%) than women (49%) agree that their internet usage has more positive than negative effects on their life.

– Internet users across all ages, levels of educational attainment, and genders were equally glad that the internet exists.

The internet in general and algorithmic-selection applications in particular are very opaque in nature and their inner workings are not easy for users to comprehend. This can lead to a sense of cyberpessimism when dealing with increasingly invasive and privacy-inhibiting practices by these applications. Thus, the survey also asked the respondents how strongly they agree with statements that indicate a sense of cyberpessimism (Figure 15).

– More than half of Swiss internet users (60%) believe that one has to accept that there is no privacy on the internet and that they are permanently monitored online (51%).

– Three out of ten (28%) indicate that they no longer try to understand internet services like Google Search.

– Cyberpessimism is greater among older age groups. For example, 37% of the oldest group (66 and over) no longer try to understand services like Google Search, while only 17% of the youngest group (ages 16–25) attest to the same.

– Low-educated users (30%) agree with no longer trying to understand services like Google Search more than highly-educated ones (25%).

– At the same time, highly-educated users (51%) agree to a greater extent that one is permanently monitored on the internet than low-educated ones (43%).

– Slightly more women (31%) than men (25%) state that they no longer try to understand services like Google Search.

In addition to investigating users' general attitudes towards the internet, the survey asked users about their attitudes regarding algorithmic selection for specific life domains. Figure 16 shows the percentage of Swiss internet users who agree or strongly agree with statements on attitudes towards algorithms for opinion formation:

Cyberoptimism is greater among the older and the highly educated

Six out of ten Swiss internet users think that one has to accept that there is no privacy on the internet

Cyberpessimism is greater among the highly educated

Figure 16: Attitudes towards algorithms for social and political orientation in Switzerland
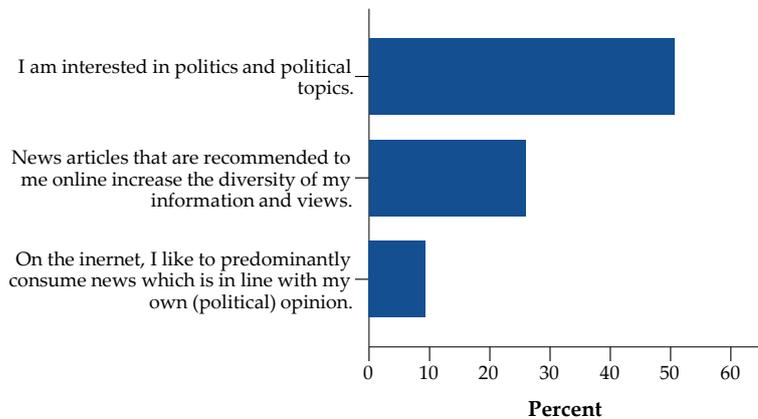
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– A quarter of Swiss internet users (26%) feel that recommended news articles increase the diversity of their information and views.

– While this seems to be equally distributed among the different age and educational groups, more men (30%) than women (22%) agree with this statement.

– One out of ten users (9%) like to predominantly consume news which is in line with their own political opinion.

– The oldest group, aged 66 and over, least like to predominantly consume news which is in line with their own political opinion (5%). In contrast, 12% of the youngest group (16–25) like to do so.

– The low educational group (16%) like consuming news that is in line with their own political views the most. Only 8% of highly-educated users do so. There are no substantial differences between men (11%) and women (8%) regarding agreement with this statement.

The survey additionally included questions about Swiss internet users' attitudes towards recommendations and ratings for purposes related to entertainment. Figure 17 shows the percentage of Swiss internet users who agree or strongly agree with the respective statements.

A quarter of Swiss internet users agree that recommended online news articles increase their diversity of information

One out of ten like to predominantly consume news that is in line with their own opinion

Figure 17: Attitudes towards recommendations and ratings for entertainment in Switzerland
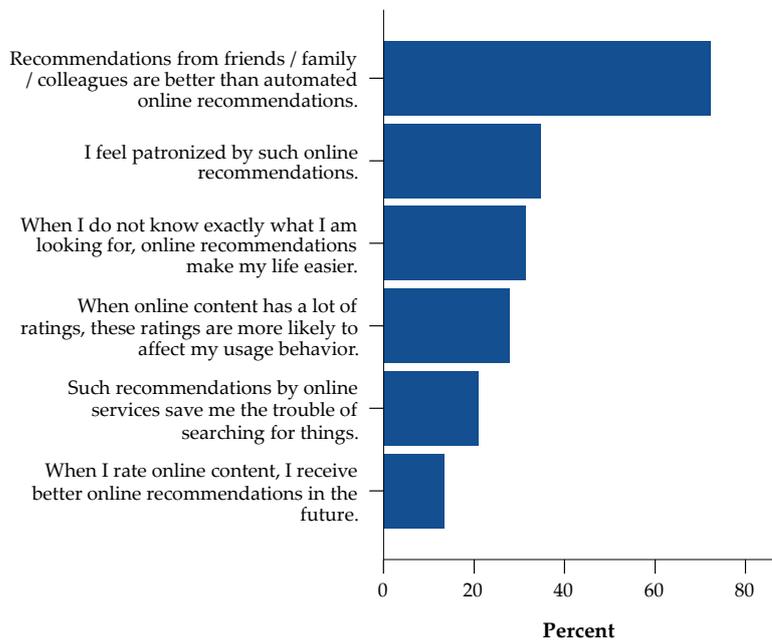
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

- The majority of Swiss internet users (72%) prefer personal recommendations from their family or friends compared to automated online recommendations for entertainment. This is true for all age and educational groups.
- A third (35%) of Swiss internet users feel patronized by online recommendations. This feeling is more common among Swiss internet users aged 46 and over (43%) compared to the younger age groups (e.g., 25% of users between 16 and 25).
- At the same time, a third of Swiss internet users (32%) consider online recommendations to be helpful when they do not know what they are looking for. Almost as many internet users (28%) state that content that has a lot of ratings is more likely to affect their usage behavior.
- A fifth (21%) agree that recommendations save them the trouble of searching for things.
- One out of ten internet users (13%) agree that when they rate content they receive better online recommendations in the future.

There were a few differences between societal groups:

- Overall, young respondents have more favorable attitudes towards recommendations and ratings for entertainment purposes. For instance, while 47% of the youngest age group (16–25) agree that recommendations make their life easier when they do not know what they are looking for online, only 18% of the oldest group (66+) state the same.

The majority prefer recommendations from offline contacts

Young users feel less patronized by online recommendations

– Highly-educated internet users express more negative attitudes towards recommendations and ratings for entertainment than low-educated users. For instance, while 32% of low-educated users agree that recommendations save them the trouble of searching for things, 21% of those with a high educational attainment do so.

– There are no major differences with regard to gender.

Positive attitudes towards recommendations and ratings for entertainment are more common among the young and the low-educated

This report further addresses attitudes towards recommendations and ratings in the field of e-commerce, e.g., in online shops. Figure 18 shows the percentage of Swiss internet users who agree or strongly agree with the respective statements.

Figure 18: Attitudes towards recommendations on online shops in Switzerland
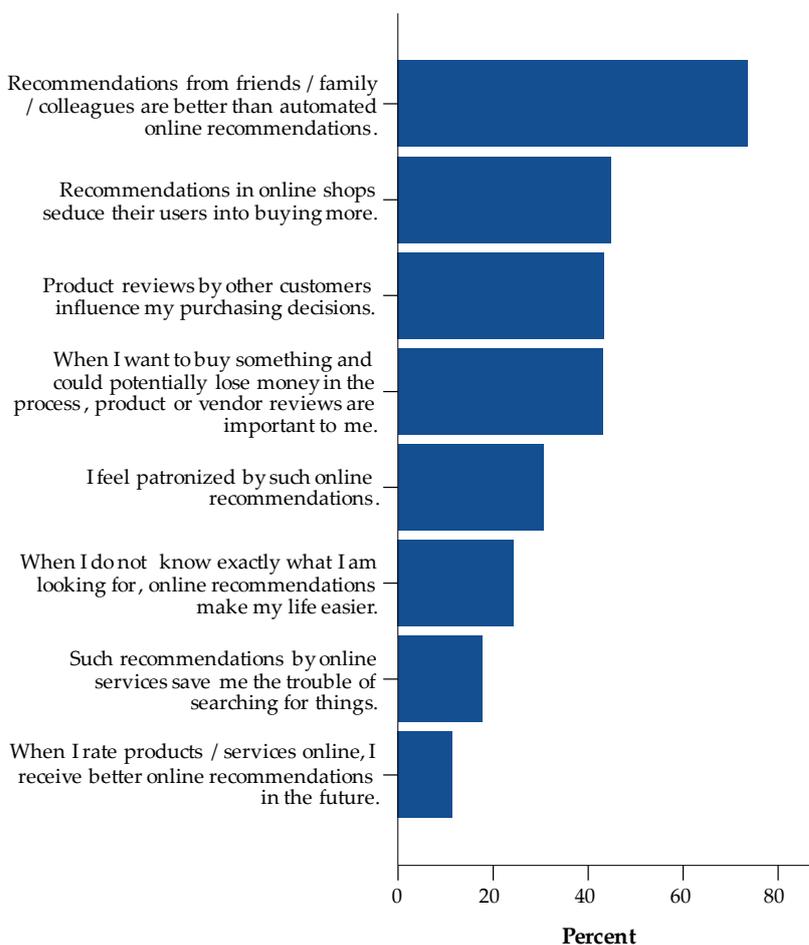
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– Seven out of ten Swiss internet users (74%) prefer personal recommendations from their family or friends compared to automated online recommendations. This is true across all sociodemographic groups.

– Four out of ten users (45%) indicate that recommendations in online shops seduce them into buying more. Internet users of all ages agree with this statement to the same extent. A fifth (20%) of the respondents with low educational attainment agree that recommendations

Seven out of ten users prefer recommendations from off-line contacts to automated recommendations

in online shops seduce them into buying more, while only half as
many (10%) highly-educated users do so.

– Four out of ten internet users (43%) think that product reviews by
other customers influence their purchasing decisions. In the young-
est age group (61%) more agree with this than in the oldest (23%).

– Product or vendor ratings are important for 43% of users when they
want to buy something and could potentially lose money in the pro-
cess. This is especially true for the youngest age group between 16
and 25 (56%), while the oldest group, aged 66 and over, assesses
these reviews as less important (30%).

– A third of internet users (31%) feel patronized by recommendations
on online shops. This share is similar (35%) for entertainment sites.

– A quarter of internet users (24%) agree that recommendations in
online shops make their life easier when they do not know what
they are looking for.

– Only 12% agree that rating products or services online helps in re-
ceiving better future recommendations online.

– Women are slightly more skeptical of recommendations and ratings
in online shops. For example, fewer women (21%) than men (27%)
agree that such recommendations make their life easier when they
do not know what they are looking for.

This report also discusses Swiss internet users' attitudes towards per-
sonalized online advertisements. Figure 19 shows the percentage of
internet users who agree or strongly agree with the respective state-
ments.

Figure 19: Attitudes towards personalized advertisements in Switzerland
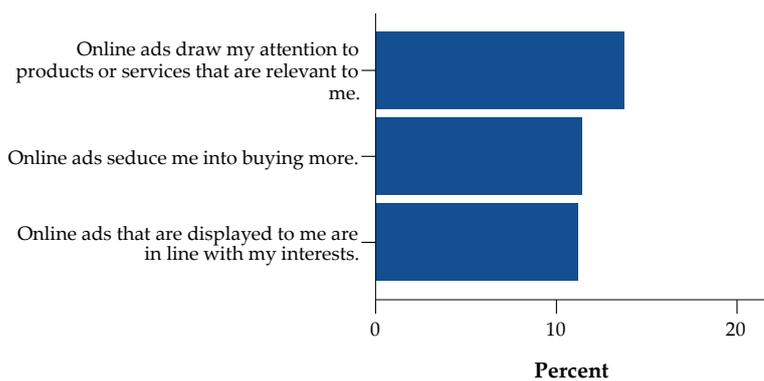
Data basis: n=1202, Swiss internet users aged 16 and over, 2019.

– Only one out of ten Swiss internet users (11%) consider online adver-
tisements that are displayed to them to be in line with their interests.
The low educational group agree with this statement more (21%) than
the high educational group (11%).

– Similarly, 11% agree that online advertisements seduce them into
buying more. In comparison, four times as many internet users (45%)
state that recommendations on online shops do so. More low-edu-

**Recommendations and rat-
ings on online shops are im-
portant to four out of ten
Swiss internet users**

**One out of ten agree that
online ads are in line with
their interests or seduce
them into buying more**

cated (20%) than highly-educated users (11%) agree with this statement. Differences regarding age are small. The youngest age group (13%) and the oldest group (9%) agree with this to a similar extent.

– Only 14% of Swiss internet users think that online advertisements draw their attention to relevant products or services. The low educational group (18%) think that online advertisements draw their attention to relevant products or services slightly more than the medium (14%) and high educational groups (13%) do.

– Differences with respect to gender are small. Men (13%) and women (10%) are equally skeptical about online advertisements being in line with their interests.

Low-educated users have more positive attitudes towards personalized advertisements

Methods

This study is based on a representative online survey of Swiss inter-net users. The sample of 1202 people is representative of Swiss inter-net users aged 16 and over by age, gender, language region, house-hold size, and employment status. The data was collected by an inde-pendent market-research company, the LINK Institute, between 27 November 2018 and 23 January 2019 in three languages (German, French and Italian).

Representative survey of Swiss internet users

The participants were recruited from an existing internet panel (LINK internet panel) and received a small pecuniary incentive for their par-ticipation.

Online survey with panel sample

The sample was composed slightly disproportionately in order to en-able separate analyses for smaller population groups. To balance this disproportion compared to the general population, the data was weighted with regard to age, gender, language region, household size, and employment status.

The survey lasted 30 minutes on average. The response rate was 76%.

Online surveys in absolute numbers:

Age	Total	German-speaking	French-speaking	Italian-speaking
16–25	211	146	58	7
26–35	225	169	49	7
36–45	210	142	57	11
46–65	422	308	97	17
66–85	134	100	28	6
	1202	865	289	48

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