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Risk factor «algorithm»: lack of knowledge, uncertainty and desire for more control in Switzerland

Although Swiss onliners use internet services that employ algorithmic selection every day, they know little about their role and function. This leads to uncertainty, a feeling of powerlessness and a desire for more control. These are the results of a representative survey of Swiss internet users conducted by the University of Zurich.

Services like Google, WhatsApp, Instagram or Netflix are booming in Switzerland. What these applications have in common is that they are based on algorithmic selection: they automatically select the content that is presented to us. Algorithms decide which search results are displayed to us on Google, which products we are recommended in online shops or which advertisements are displayed to us online. Algorithms also exert influence in the entertainment sector: on YouTube, Netflix and Spotify, they greatly affect our viewing of TV series and the music we listen to. Algorithmic selection is also central for fitness trackers and dating apps like Tinder. Algorithms have long pervaded our everyday lives and influence how we perceive the world. Not least, algorithms can shape our behavior by influencing our decisions.

Much speculation about the power of algorithms – little empirical evidence
"There is much speculation in the media and in politics about the power and risks of algorithms in everyday life. However, comprehensive empirical evidence on the significance of algorithmic selection is still lacking, also for Switzerland," emphasizes Michael Latzer, Professor of Media Change & Innovation at the University of Zurich. To what extent do the Swiss use internet services that employ algorithmic selection and how important do they consider them? How well do Swiss internet users know how these services work? Do Swiss internet users recognize the risks they are exposed to and how do they deal with them? First insights into these and similar questions are provided by a representative survey of Swiss internet users by UZH Professor Michael Latzer and his team.

Almost everyone in Switzerland uses algorithmic-selection applications on a daily basis
Virtually all onliners in Switzerland (92% of the population) use algorithmic-selection applications such as WhatsApp (97%), Google Search (96%) or Facebook (67%). On average, Swiss internet users spend three and a half hours a day online. They spend over two thirds of this time on applications that use algorithmic selection (e.g., Instagram, 20min.ch or Google Search). Reasons for not using such

services in Switzerland are a lack of interest or a lack of perceived usefulness. Privacy concerns also play a role, especially for non-use of social media like Facebook.

Offline alternatives are assigned much higher relevance than algorithmic-selection applications

Although algorithmic-selection applications are daily companions of Swiss internet users, they are considered comparatively unimportant for all life domains. Contrary to common speculations about the great importance of social media as sources of information, internet users consider offline alternatives such as conversations with friends and family to be more important for their social and political opinion formation than algorithmic online alternatives. Similarly, the majority of Swiss internet users prefer to rely on recommendations from friends or family rather than automated online recommendations when it comes to entertainment (72%) or purchasing products and services (74%). "The often extensive use of algorithmic services alone should not lead to premature conclusions about their impact on users as they consider offline alternatives to be more important in all life domains," says Michael Latzer.

A third of internet users rely on fitness trackers for health data

For one in three internet users (31%), fitness trackers or apps that monitor their health or fitness status or automatically record their activities are important. More than a third of the users of such devices (36%) use their fitness trackers or apps daily. The Swiss mainly use them to record fitness or health data (79%) as well as their sleep (28%) or nutrition (16%).

Four out of ten would make their fitness-tracking data available to insurance companies for monetary benefits – risk awareness and trust in services are low

42% of users of health-tracking devices would be willing to share personal data (e.g., daily step counts) with their insurance company if they received financial benefits such as reductions on their premium in return. This share is even higher among younger users (55% in the age group 26–35). At the same time, awareness of associated risks and trust in the tracking services is low. The vast majority of users of health-tracking devices (72%) report that they do not blindly trust their tracker's information. "Especially in the health sector, where we are dealing with sensitive data, the high willingness to share personal data with insurance companies for relatively small financial benefits is worrying," emphasizes Michael Latzer. "In view of the lack of transparency with which companies can collect and share data, important data protection issues arise here." The results reveal that users who are concerned about what happens to their fitness data are slightly less willing to share their data with an insurance company (32%).

Algorithms are widely used in Switzerland, but only some realize this and few understand them

Most internet users are confronted with algorithmic selection on a daily basis – but only some of them are aware of this. For example, two thirds (66%) realize that content displayed to them online is similar to what they have viewed in the past. Half of internet users (54%) sometimes feel that search results have been sorted specifically for them. Higher-educated and younger internet users more often report having such experiences with algorithms when using the internet. "Despite high daily use, there is astonishing ignorance. For instance, one in three do not know that Google searches with the same

search terms can lead to different results for different people," explains Michael Latzer. "One in ten internet users is not aware that online services can personalize the content displayed," he adds.

Eight out of ten internet users do not know that on Facebook and similar services it is not employees but algorithms that compile news feeds
Awareness of algorithmic selection is similarly low in the domain of online shopping: 27% of internet users are not aware that online advertisements can be personalized and a third (35%) do not know that companies use bots on the internet to communicate with customers.
In general, younger, male and better-educated internet users have higher skills in dealing with algorithmic online services and know more about the underlying processes. "There are also inequalities in terms of algorithmic skills in Switzerland, i.e., digital divides. This is particularly noteworthy as internet users with greater knowledge and awareness of algorithms also have a higher risk awareness and are more likely to protect themselves," says Latzer.

High, diffuse risk awareness about algorithms on the internet – but few protect themselves
Although many Swiss internet users do not know exactly how algorithms work and what role they play in widely used applications, a diffuse awareness of risks is widespread. In general, better-educated and older internet users think about the risks associated with algorithmic selection more often – particularly stimulated by mass media coverage. Nowadays, most potential dangers of internet use can be traced back to the use of algorithms or are at least encouraged by it: personalized recommendations, which in the case of services such as YouTube are also played automatically via autoplay, and constant push notifications contribute to digital overuse. Also, the possibilities of analyzing and using personal data traces across devices and services have significantly increased in the algorithmic age. There is a clear discrepancy between the perceived dangers posed by risks and the protective behaviors individuals apply: nearly all Swiss internet users (94%) – younger ones especially often – think about the risk of spending too much time online. Yet only 46% of all internet users actively try to use the internet less. Swiss internet users also very often think about receiving one-sided or distorted information on the internet (93%). However, only a quarter (25%) of social media users check the accuracy of news that appears in their news feed by consulting additional sources. 95% at least sometimes think about possible privacy violations on the internet and 79% know that their personal data is of interest to companies like Google or Facebook. Nevertheless, only 32% adjust their privacy settings for certain services. Only half of internet users (50%) deny apps particular rights on their mobile devices, or delete cookies or their browser history (47%). On Google Search, only half of users (55%) state that they do not click on search results that are marked as advertisements. However, the majority of internet users (70%) frequently or always ignore automated, personalized online recommendations when using algorithmic-selection applications. Latzer comments: "In times when terms such as *filter bubbles* and *dataveillance* dominate public discourse, Swiss internet users often think about such risks. At the same time, they know little about how algorithmic selection works and rarely protect themselves."

Low trust, loss of control and resignation – Switzerland wants more control over algorithmic online services
In general, trust in algorithmic online services is low in Switzerland. Only a quarter of internet users (27%) state that they trust online services and just 14% consider most information on the internet to be trustworthy. If it were up to them, six out of ten social media users (59%) would not allow services

such as Facebook and Instagram any influence over topics that are important to them. A majority would welcome better control of how social media (66%) and Google Search (61%) work. A third (34%) also feel that they are completely losing control over their data on the internet. Such negative assessments tend to be more common among younger internet users: Six out of ten believe that they have to accept that privacy no longer exists on the internet and 28% no longer even try to understand how services like Google Search work. Michael Latzer explains: "These results reflect a widespread desire in Switzerland for more self- and external control over these services."

Despite high uncertainty and low trust, cyberoptimism is unbroken in Switzerland
Nevertheless, more than eight out of ten users (84%) are happy that the internet exists and two thirds (67%) think that the internet is a good thing for society. Cyberoptimism is more pronounced among internet users with medium or high educational attainment. Men are also more cyberoptimistic than women. "The conclusion of Swiss internet users remains positive," summarizes Michael Latzer from the current results of the UZH study. "Nevertheless, it should not be neglected that the everyday life of average Swiss internet users is greatly influenced by algorithms, but they know very little about them. This creates uncertainty in the population regarding the power of algorithms, results in low self-protection and a feeling of powerlessness. The resulting desire for more control and transparency must be taken seriously."

About the project

The aim of the project **"The Significance of Algorithmic Selection for Everyday Life: The Case of Switzerland"** is to empirically investigate the significance of online applications that employ algorithmic selection for everyday life in Switzerland. The project evaluates use, awareness, risk awareness and protective behavior in five life domains: social and political orientation, commercial transactions, social interactions, entertainment and health.

The project is carried out by the Media Change & Innovation Division of the Department of Communication and Media Research (IKMZ) at the University of Zurich under the direction of Prof. Dr. Michael Latzer. It is based on a representative online survey of 1,202 internet users aged 16 and over, conducted by the LINK Institute from November 2018 to January 2019. At the same time, the respondents' internet usage behavior was tracked using passive metering software. The project team members include Noemi Festic and Kiran Kappeler. The project is supported by the Swiss National Science Foundation (SNF).

All the reports by topic are available for download at http://mediachange.ch/research/algosig.

Contact:

Prof. Dr. Michael Latzer

Department of Communication and Media Research, Media Change & Innovation Division

University of Zurich

Tel. +41 76 398 10 99

E-Mail: m.latzer@ikmz.uzh.ch

http://www.mediachange.ch

Twitter: @IKMZmediachange