

## **From Hype Cynics to Extreme Believers: Typologizing the Swiss Population’s COVID-19-Related Conspiracy Beliefs, Their Corresponding Information Behavior, and Social Media Use**

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Conspiracy theories have received an increasing amount of public and scholarly attention. In these accounts, individuals with conspiracy beliefs are sometimes described as a homogeneous and deviant, even pathological group of people supporting elaborate conspiracy theories, informing themselves in “alternative” and social media, and actively disseminating their views via such platforms to others. This article differentiates this perception. Through the conceptual lens of conspiracy beliefs and based on a national online survey about the Swiss population’s perceptions of the COVID-19 pandemic ( $n = 1,072$ ), we use latent class analysis (LCA) to reconstruct six distinct groups of individuals that all harbor conspiracy beliefs, but to different degrees and in different ways, ranging from *Extreme Believers* over *Lingering Believers* to *Hype Cynics*. Compared with the rest of the population, many of these groups inform themselves more often online and on

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social media, and segments with higher degrees of conspiracy beliefs in particular use social media often to disseminate their views.

*Keywords: conspiracy theories, conspiracy beliefs, COVID-19, social media, survey research, segmentation analysis*

“Half of the US Believes a Deadly Conspiracy Theory” (Enten, 2021) or “Conspiracy Theories Fuel French Opposition to Covid-19 ‘Health Pass’” (Wheeldon, 2021): News headlines like these illustrate that the COVID-19 pandemic has provided fertile ground for the proliferation, endorsement, and dissemination of conspiracy theories around the globe. Beliefs in conspiratorial narratives (i.e., in proposed explanations of events or practices that reject established accounts and instead reference secret machinations of individuals or groups; Goertzel, 1994; Keeley, 1999; Mahl, Schäfer, & Zeng, 2022), have always been more likely to emerge during societal crises (van Prooijen & Douglas, 2017), and are further catalyzed by the rise of social media (Uscinski, DeWitt, & Atkinson, 2018). During global health crises like the COVID-19 pandemic, beliefs in conspiracy theories can lead to detrimental public health effects (World Health Organization, 2020) and are associated with less adherence to preventive measures like mask-wearing, social distancing, or vaccination (Romer & Jamieson, 2020). Hence, it is critical to understand who believes in conspiracy theories, how prevalent these beliefs are, and what their implications are—not only for combating conspiracy beliefs related to the current pandemic but also for future crises.

In public and scholarly accounts, individuals who support and believe conspiracy theories are often described as a homogeneous group of people—labeled as “conspiracy theorists”<sup>2</sup> (Uscinski, 2018, pp. 51, 109f)—that subscribes to deviant or even pathological worldviews by supporting elaborate yet outlandish conspiracy theories (Aupers, 2012). This understanding, however, has recently been criticized as potentially inaccurate (Douglas et al., 2019; Smallpage, Drochon, Uscinski, & Klofstad, 2020). Research has indicated that individuals’ beliefs in conspiracy theories may differ in strength and may extend only to some elements of larger conspiracy theories (Ichino & Räikkä, 2021). Ethnographic studies (e.g., Harambam & Aupers, 2017), survey research (e.g., Agle & Xiao, 2021), and social media analyses (e.g., Mahl, Zeng, & Schäfer, 2021) have further indicated that people who harbor conspiracy beliefs may be considerably more heterogeneous than often thought. But evidence on this heterogeneity is scarce.

Moreover, no study has yet assessed whether different groups of conspiracy theory believers exhibit specific patterns of information use and dissemination. “Conspiracy theorists” are often described as moving away from legacy news media, as informing themselves via “alternative” media (Schneider, Schmitt, & Rieger, 2020), and as disseminating their views actively to others online, particularly on social media—but again, studies on these questions are scarce.

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<sup>2</sup> The term “conspiracy theorists” has never been well defined” and has been used for people who believe in a specific conspiracy theory or in several conspiracy theories, for “professionals who spread conspiracy theories for a living,” and for people with a high level of conspiratorial thinking who are prone to believing in conspiracy theories in general (Uscinski, 2018, p. 51).

The study at hand aims to fill these gaps while adding an underresearched country case (Mahl et al., 2022) to the field: Switzerland. Based on a national population survey, we analyze how common COVID-19-related conspiracy beliefs are among the Swiss population, what groups of individuals can be identified among those harboring such beliefs, what their sources of information are, and if and how they use social media to disseminate their beliefs.

### **Conceptual Framework**

In recent decades, scholarship on conspiracy beliefs and their antecedents, formation, and implications has strongly grown (Douglas et al., 2019; Goreis & Voracek, 2019). To measure and operationalize conspiracy beliefs, some researchers have investigated *specific conspiracy beliefs* (i.e., beliefs in [elements of] conspiracy theories related to specific issues or events such as the 9/11 attacks; Swami, Chamorro-Premuzic, & Furnham, 2010), while others have focused on *generic conspiracy beliefs* (i.e., individuals' general tendency toward conspiracy theorizing; Brotherton, French, & Pickering, 2013). During the COVID-19 pandemic, studies interrogating corresponding conspiracy beliefs have gained momentum (for an overview, see Mahl et al., 2022). But despite the rising amount of research, the field still has three conceptual and analytical shortcomings that will be outlined in this section: first, assessments of the prevalence of conspiracy beliefs are still rare; second, the heterogeneity of groups harboring different degrees of conspiracy beliefs has not been researched often; and third, the role of information and communication has been underemphasized so far.

#### ***Assessing the Prevalence of Conspiracy Beliefs***

Although numerous studies have identified determinants of individuals' adherence to or belief in conspiracy theories, such as sociodemographic characteristics, personality traits, political ideologies, or specific epistemic or social needs (for overviews, see Douglas et al., 2019; Goreis & Voracek, 2019), few have examined how many people within a given population exhibit conspiracy beliefs. This, however, is important because it allows us to assess how widespread conspiracy beliefs are in a given society, and thus helps to develop contextualized strategies to counter the proliferation of conspiratorial narratives that seem to vary considerably between countries. Studies about COVID-19-related conspiracy theories, for example, point toward (large) country differences: While 20% of Germans believe that the coronavirus was deliberately created and spread by the Chinese government, 37% of U.S. citizens and 53% of Nigerians do (YouGov, 2020). Other cross-national surveys have revealed low endorsement of conspiracy beliefs related to the COVID-19 pandemic in countries such as Switzerland, Sweden, or Denmark, but high endorsement in Hungary and Poland (Theocharis et al., 2021). Nevertheless, data on the prevalence of conspiracy beliefs related to COVID-19 in Switzerland are scarce. Thus, our first research question (RQ) is:

*RQ1: How common are COVID-19-related conspiracy beliefs among the Swiss population?*

#### ***Assessing the Heterogeneity of Individuals Harboring Conspiracy Beliefs***

Surveys measuring conspiracy beliefs and their underlying factors predominantly test for linear relationships between variables. Many studies have investigated the association of *sociodemographic*

*characteristics* with conspiracy beliefs, albeit with inconsistent results: While some studies have found that men (Freeman & Bentall, 2017; Galliford & Furnham, 2017), younger people (Galliford & Furnham, 2017; Stempel, Hargrove, & Stempel, 2007), or people with lower levels of education (Galliford & Furnham, 2017; van Prooijen, 2017) are more likely to exhibit conspiracy beliefs, other studies have produced contradictory findings (for instance, Stempel et al., 2007, found that conspiracy believers are more often female) or no links between education or gender and conspiracy beliefs at all (e.g., Enders & Smallpage, 2019). Apart from sociodemographic characteristics, several studies found a negative relation between *scientific knowledge* or *rational thinking* and conspiracy beliefs (Ballová Mikušková, 2018; Swami, Voracek, Stieger, Tran, & Furnham, 2014), and a positive link between *political ideology* (on either side, left and right) and support of conspiratorial narratives (Sutton & Douglas, 2020)—which often depends on whether political orientation and the respective conspiratorial claims are aligned (Miller, Saunders, & Farhart, 2016). In addition, research indicates a negative relationship between *trust in science and scientists* and peoples' beliefs in conspiracy theories (Agle & Xiao, 2021; Milošević Đorđević, Mari, Vdović, & Milošević, 2021).

While crucial for understanding the antecedents of conspiracy beliefs, these studies do not differentiate subgroups in society that may harbor different degrees of conspiracy beliefs. *Segmentation studies* offer an approach to do just that (i.e., to analytically divide “the general public into relatively homogeneous, mutually exclusive subgroupings”; Hine et al., 2014, p. 442). In segmentation studies, a given population is not treated as a homogenous entity but as potentially containing diverse groups that share certain characteristics internally but differ considerably from others. Studies on public perceptions of climate change (Hine et al., 2014; Metag, Füchslin, & Schäfer, 2017), health (Maibach, Weber, Massett, Hancock, & Price, 2006), or science (Schäfer, Füchslin, Metag, Kristiansen, & Rauchfleisch, 2018) have employed three variants to break down populations into subgroups (see Metag & Schäfer, 2018, for an overview): *sociodemographic* segmentation based on sociodemographic characteristics, *psychographic* segmentation based on peoples' beliefs in or attitudes toward a topic, and *behavioral* segmentation based on variables covered (e.g., information or communication behavior).

Although segmentation analyses are a useful methodological approach to investigating individuals' varying degrees of conspiracy beliefs, studies employing this approach are rare. One notable exception is Harambam and Aupers' (2017) attempt to identify different groups of people in the Dutch “conspiracy theory milieu” (p. 113). Based on qualitative interviews, the authors reconstructed three groups—“activists, retreaters, and mediators”—that differ in their worldviews, conspiracy beliefs, and related practices. Quantitative research designs are equally scarce. Agle and Xiao (2021) are an exception. They applied latent profile analysis to online survey data from the United States and identified four distinct “profiles” who believe in similar conspiratorial narratives.

Our study adds to this research, using segmentation analysis to identify subgroups among those harboring conspiracy beliefs along psychographic characteristics (i.e., people with different degrees of COVID-19-related conspiracy beliefs). In addition, we analyze whether individuals in these segments differ with respect to sociodemographic characteristics, attitudes toward science, politics, and the coronavirus, as well as perceived knowledge about COVID-19. Thus, our second research question is:

*RQ2: Which segments exist among people harboring COVID-19-related conspiracy beliefs?*

### ***Assessing Individuals' Information and Communication Patterns***

Apart from sociodemographic and attitudinal factors, the use of specific *sources of information* such as news, online, and social media were found to be associated with conspiracy beliefs. Research points to short-term (Warner & Neville-Shepard, 2014) and long-term (Kim & Cao, 2016) impacts of exposure to conspiratorial media content on such beliefs, albeit the impact depends on the specific source of information: While exposure to non-“mainstream” media such as blogs and tabloids (Stempel et al., 2007) or “alternative” information sources (Bessi, Scala, Rossi, Zhang, & Quattrociocchi, 2014) seems to increase conspiracy beliefs, the use of “mainstream” sources like legacy newspapers or network TV was found to be negatively associated with conspiracy beliefs (Meirick, 2013). Studies also confirmed these findings with respect to the COVID-19 pandemic: Exposure to “mainstream” broadcast and print media is positively associated with accurate knowledge about the prevention of COVID-19 infection (Allington, Duffy, Wessely, Dhavan, & Rubin, 2020; Romer & Jamieson, 2020) and negatively with the endorsement of conspiracy beliefs. Using social media as a main source of information, by contrast, was found to be positively linked to holding COVID-19-related conspiracy beliefs, and negatively associated with health-protective behaviors (Allington et al., 2020).

But although information sources have received much attention, we know little about the differences between groups with varying degrees of conspiracy beliefs. Therefore, our third research question is:

*RQ3: What are the sources of information for different segments of people holding conspiracy beliefs?*

In addition, scholarship found that social media offer fertile ground for the dissemination of conspiracy theories (e.g., Mahl et al., 2021; Theocharis et al., 2021), helping to facilitate a faster propagation of misinformation and conspiratorial narratives across multiple platforms (Vosoughi, Roy, & Aral, 2018) by circumventing traditional gatekeepers (Wood & Douglas, 2015). This, in turn, enables users to disseminate and interact with conspiratorial content, and the increased visibility of such claims can encourage more individuals to publicly share their support and connect with like-minded people (cf., DeWitt, Atkinson, & Wegner, 2018)—which, in turn, enhances exposure to conspiratorial content online and might reinforce related beliefs. Therefore, *individuals' engagement with conspiratorial content on social media* (e.g., liking, sharing, or commenting on such content) merits closer investigation. Eberl and Lebernegg's (2022) study on COVID-19-related social media use in Austria, for instance, suggests that writing posts and liking or sharing content on social media—but not reading posts—is positively associated with conspiracy beliefs. But more research on this question is needed. Therefore, our fourth research question is:

*RQ4: How do different segments of people holding conspiracy beliefs use social media to disseminate their beliefs?*

In answering these four research questions, our study contributes to the field in multiple ways: It advances our understanding of groups of people harboring different degrees of conspiracy beliefs and enable scientists, politicians, and civil society initiatives to develop tailored communication strategies to reach these groups. In addition, our segmentation approach might help overcome the pejorative use of the label

"*conspiracy theorists*"—a label that, first, indicates that people holding conspiracy beliefs can be seen as a monolithic group and, second, that can be—and in fact is—used as a discursive weapon to exclude and delegitimize groups of people (Bjerg & Presskorn-Thygesen, 2017).<sup>3</sup>

In addition, the present study focuses on Switzerland, an underresearched country within the field (Mahl et al., 2022). It is also a country that has been found to be more resilient to deceptive content like disinformation and conspiratorial narratives than other nations (Humprecht, Esser, & Van Aelst, 2020). The current pandemic, however, seems to paint a different picture: COVID-19 vaccination rates have stagnated at a comparatively low level in Switzerland (Ritchie et al., 2020), and the country has experienced (sometimes violent) protests against pandemic measures (Swissinfo, 2022). This renders Switzerland a significant case to examine peoples' beliefs in COVID-19-related conspiracy theories.

## **Data and Method**

### ***Data and Measurements***

Our analysis is based on a national online survey asking the Swiss population about their knowledge, perceptions, and attitudes toward COVID-19 as well as their patterns of related information and media use—the "COVID-19 Edition" of the "Science Barometer Switzerland." A total of 1,072 respondents with Internet access aged 15 and older were recruited based on interlocked quotas for age, gender, and linguistic region. Respondents' data were additionally weighted according to their education levels to mirror the Swiss population. The survey was conducted in November 2020 by polling company Demoscope and its online partner Dynata.

The questionnaire built on a recurring representative survey on attitudes toward science in Switzerland (the "Science Barometer Switzerland") and was adapted to capture ten dimensions primarily through Likert scales (see Table 1 for detailed information): sociodemographics (four items), conspiracy beliefs about COVID-19 (five items), trust in science/scientists (two items), attitudes toward the relationship between science and politics during COVID-19 (five items), perceived knowledge about COVID-19 (two items), contact with the topic of COVID-19 via legacy media (six items) and online media (seven items), trust in journalists (one item), assessment of media coverage of COVID-19 (two items), and communicative behavior on social media (four items).

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<sup>3</sup> Such pejorative stances also appear in scholarly discourses in two archetypal forms: The sociopathological approach explains conspiracy beliefs as a form of pathology or "paranoid style" (Hofstadter, 1965) in a social psychological or political sense. The epistemological approach discusses "conspiracy theorists'" irrationality, cognitive flaws, and logical defects (Sunstein & Vermeule, 2009).

**Table 1. Survey Items Used in Our Study.**

Dimension	Items	<i>N</i>	<i>M</i>	<i>SD</i>
<b>Sociodemographics</b>	Age (years)	1,072	48.74	18.07
	Gender (female)	1,072	.50	.50
	Education (tertiary)	1,057	.35	.47
	Political orientation (1 = "left" to 7 = "right")	935	3.93	1.38
<b>Conspiracy beliefs</b> (1 = "strongly disagree" to 5 = "strongly agree")	The pandemic is being blown up into a bigger issue than it is.	1,053	2.47	1.41
	The number of people dying from COVID-19 is deliberately exaggerated by authorities.	1,027	2.21	1.34
	There is no genuine evidence that the novel coronavirus exists.	1,046	1.62	1.11
	Certain groups want the pandemic to continue because they benefit from it.	1,007	2.49	1.43
	The pandemic has been planned by powerful individuals.	983	1.90	1.30
<b>Trust in science/scientists</b> (1 = "very low" to 5 = "very high")	How high is your trust in science in general?	1,062	3.79	.80
	How high is your trust in scientists?	1,059	3.74	.84
<b>Attitudes toward the relationship between science and politics during COVID-19</b> (1 = "strongly disagree" to 5 = "strongly agree")	When dealing with COVID-19, we should rely more on common sense rather than scientific studies.	1,064	2.47	1.31
	The knowledge of scientists is important to slow down the spread of COVID-19 in Switzerland.	1,069	4.10	.95
	Political decisions in dealing with COVID-19 should be based on scientific knowledge.	1,064	3.97	.93
	It is not the job of scientists to interfere with politics in dealing with COVID-19.	1,044	2.47	1.22
	Scientists should actively participate in political debates about COVID-19.	1,046	3.75	1.11

<b>Perceived knowledge about COVID-19</b> (1 = "strongly disagree" to 5 = "strongly agree")	Science and research on COVID-19 are so complicated that I don't understand a lot about it.	1,053	2.94	1.13
	I know a lot about the novel coronavirus.	1,062	3.05	1.05
<b>Legacy media contact with the topic of COVID-19</b> (1 = "never" to 5 = "very often")	Since the start of the pandemic, how often do you come in contact with the topic of COVID-19 via . . .			
	TV without online media libraries?	1,067	4.28	1.09
	radio without online media libraries or podcasts?	1,049	3.46	1.42
	printed daily/weekly newspapers or magazines?	1,062	3.65	1.39
	science magazines?	981	1.90	1.26
	Internet?	1,060	3.91	1.21
	talking about COVID-19 with friends and acquaintances?	1,071	3.93	1.11
<b>Online contact with the topic of COVID-19</b> (1 = "never" to 5 = "very often")	Since the start of the pandemic, how often do you come in contact with the topic of COVID-19 via . . .			
	newspaper and magazine websites or apps?	994	3.58	1.38
	online libraries of television and radio broadcasters?	966	2.74	1.51
	websites of scientific institutions, authorities, and organizations?	986	3.08	1.35
	Facebook, Twitter, or other social networks?	981	2.72	1.55
	blogs or message boards?	971	1.93	1.26
	Wikipedia?	974	1.98	1.26
	YouTube or similar video platforms?	973	2.24	1.38
<b>Trust in journalists</b> (1 = "very low" to 5 = "very high")	How high is your trust in journalists?	1,066	2.58	1.02
<b>Assessment of media coverage of COVID-19</b>	Media coverage of COVID-19 since the beginning of the corona pandemic has generally been . . .			



(1 = "strongly disagree"  
to 5 = "strongly agree")

	trustworthy.	1,044	3.16	1.05
	exaggerated.	1,057	3.18	1.31
<b>Communication behavior on social media</b>	Since the start of the pandemic, how often do you . . .			
(1 = "never" to 5 = "very often")				
	post or share information or opinions about COVID-19 on the Internet?	997	1.83	1.21
	like or favor information or opinions about COVID-19 on the Internet?	993	1.95	1.25
	comment on information or opinions about COVID-19 on the Internet?	998	1.73	1.16
	exchange information about COVID-19 in messengers like WhatsApp?	997	2.37	1.38

*Note.* *N* = sample size. *M* = mean. *SD* = standard deviation.

### **Method**

To answer RQ1, we identified the subset of the population with conspiracy beliefs by checking whether they agreed to at least one of the five COVID-19 conspiracy belief items (see Table 1). To investigate and compare groups of people holding different degrees of conspiracy beliefs (RQ2), this subset ( $n_{\text{subset}} = 445$ ) was further segmented using the same five items, this time as fully ordinal variables, in latent class analyses (Chapman & Feit, 2015). Model-based approaches like LCA are recommended over other clustering analyses for segmenting populations because they are, among other reasons, better equipped to predict classes despite single missing values and lend themselves to solutions that can be replicated and adapted by future research (Füchslin, 2019). Although it is worthwhile to use multiple segmentation techniques to assess the robustness of solutions, we were not able to use distance-based clustering methods such as k-means because some items contained too many missing values.

We compared cluster solutions differentiating between two and eight segments, using the poLCA package in R (Linzer & Lewis, 2014), and compared the quality of the solutions via model descriptors such as Akaike information criterion (AIC), Bayesian information criterion (BIC), and the clarity of respondents' classification. We set 5,000 random starting seeds for the algorithm to find robust solutions and avoid finding local minima and maxima. BIC values favored the three-cluster solution, while AIC values suggested six groups as optimal. This is in line with BIC having a higher penalty coefficient for more complex models (i.e., AIC being more forgiving for models that might overfit the data; Stoica & Selen, 2004). The three-cluster solution suggests a simple hierarchy of weak, medium, and strong "believers," while the six-segment solution detects three similar, but smaller groups and unveils three additional groups that break the hierarchical pattern while still offering clear and informative interpretations.

Since both criteria can be considered as heuristics in the context of an exploratory analysis, we focused on the solution suggested by AIC values because it led to clusters with more informative and distinct interpretations (i.e., higher face-validity). In addition, this solution could classify respondents into one of the six groups with high distinction: For more than 96.6% of respondents, the likelihood of belonging to one segment exceeded 50%, while the sample mean of all respondents' posterior probabilities (Gollwitzer, 2012) reached 86%, meaning that survey respondents had an 86% average likelihood to belong to one specific segment. We use the modal attribution of respondents to present our results, classifying each respondent into his or her most likely cluster.

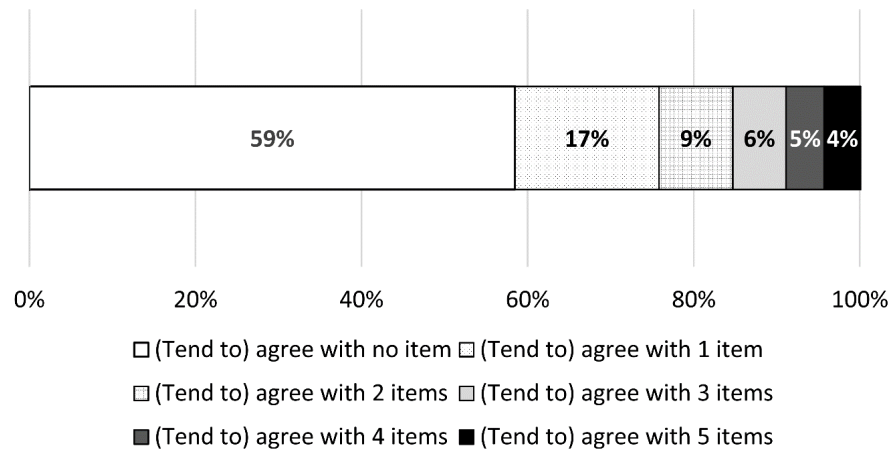
As a last step, we compared the six segments holding different degrees of conspiracy beliefs with all other individuals in the sample, who were excluded before segmentation, representing most of the Swiss population that does not agree with any of the five conspiracy belief items ( $n = 627$ ). To describe these segments in more detail, we investigated their sociodemographic characteristics, attitudes toward science, politics, and the coronavirus, as well as perceived knowledge about COVID-19.

To explore the final two research questions, we described the six segments' use of information sources including legacy, online, and social media, as well as their interpersonal communication via conversations with friends and family (RQ3) and their communication behavior on social media (RQ4) about COVID-19 (see Table 1).

## Results

### ***How Common are COVID-19-Related Conspiracy Beliefs Among the Swiss Population? (RQ1)***

Across all survey questions and the entire population, our study shows that COVID-19-related conspiracy beliefs are widespread among the Swiss population. Overall, 445 respondents—representing 41.5% of the population—agreed or tended to agree with at least one of the five conspiracy belief items (while the other 627 who did not indicate any such beliefs were interpreted as *Non-Believers*). In turn, however, only 47 respondents—accounting for 4.4%—agreed or tended to agree with all five conspiracy belief items (see Figure 1). This shows that although conspiracy beliefs may be widespread, strong conspiracy believers are rare in the Swiss population.



**Figure 1. Agreement with conspiracy belief items.**

Note.  $N = 1,072$ .

In addition, respondents' answers differ considerably between the analyzed conspiracy belief items (see Table 1). Overall support is strongest for the item "The pandemic is being blown up into a bigger issue than it is," to which 27% of respondents agree or tend to agree, but is lower, e.g., for "The number of people dying from COVID-19 is deliberately exaggerated by authorities" (21%) or "There is no genuine evidence that the novel coronavirus exists" (9%).

#### **Which Segments Exist Among People Harboring COVID-19-Related Conspiracy Beliefs? (RQ2)**

Latent class analysis suggested that among respondents agreeing to at least one conspiracy belief item, six segments can be distinguished (Figure 2 shows the means of the segments along the five COVID-19-related conspiracy belief items):

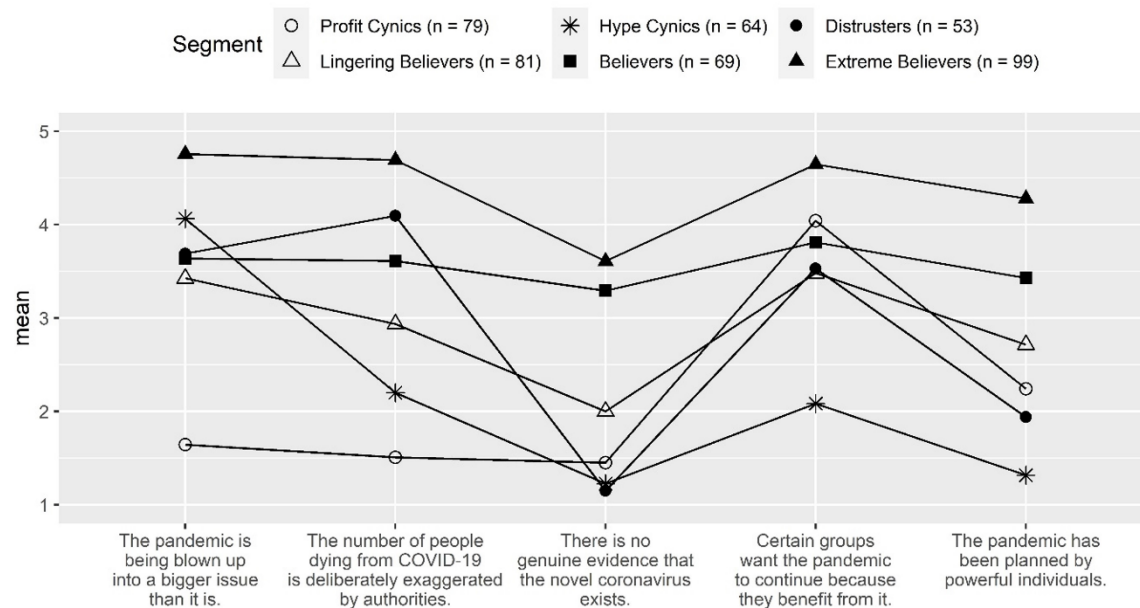
1. The *Extreme Believers* ( $n = 99$ ) form the largest segment, representing 9.3% of the Swiss population and 22.2% of those holding any conspiracy beliefs. Respondents in this segment show the strongest agreement with all five variables measuring conspiracy beliefs. They strongly believe that the pandemic is overhyped, that the number of people dying of COVID-19 is being deliberately exaggerated, that certain societal groups are profiting from the pandemic, and that powerful people have planned the pandemic. They also agree with the statement that there is no proof that the coronavirus actually exists, even though this agreement is less pronounced compared with the other items.
2. *Believers* ( $n = 69$ ) make up 6.4% of the sample and 15.5% of those holding conspiracy beliefs. They show a similar distribution in their responses to the conspiracy items; however, their agreement is generally about one scale-point lower than for the *Extreme Believers*. They also agree that COVID-19 is overhyped, that death tolls are exaggerated, and that certain groups profit from the pandemic. But they agree less that there is no clear proof for the existence of the virus, and that the pandemic was planned by powerful people.

The other four segments differ from the aforementioned two in that they do not agree with all of the five items measuring conspiracy beliefs—they disagree with some of them:

3. The group that still agrees with three of the five conspiracy belief items are the *Distrusters* ( $n = 53$ ). They are the smallest segment with 5.0% of the Swiss population, representing 11.9% of those holding conspiracy beliefs. Respondents belonging to this segment do not doubt that the coronavirus exists and do not believe that powerful elites have planned the pandemic. However, they have doubts about the reported extent of the pandemic, believe that death tolls are exaggerated, and that certain societal groups profit from it.
4. Similarly, the *Lingering Believers* ( $n = 81$ ) agree, albeit on a lower level, that the pandemic is overhyped and that certain groups have an interest in continuing the pandemic because they profit from it. They are undecided on whether the number of people dying of COVID-19 is exaggerated. Also, they disagree with the items that there is no proof that the coronavirus actually exists, and that powerful people planned the pandemic—but this is less pronounced than with the *Distrusters*. The means for the conspiracy belief items for this segment range from a maximum of 3.6 to a minimum of 2.0 around the mean of the five-point scales. This segment is the second largest one, representing 7.5% of the population and 18.2% of those holding conspiracy beliefs.

In contrast to these four groups, the final two segments agree with only one conspiracy belief item each:

5. The *Hype Cynics* ( $n = 64$ ), representing 5.9% of the Swiss population and 14.4% of those with any conspiracy beliefs, believe only that the corona pandemic is overhyped. But even so, they do not doubt the death tolls, are convinced that the virus exists, and “do not agree” with the other two conspiracy items either.
6. In contrast, the *Profit Cynics* ( $n = 79$ ) do not doubt anything about the pandemic, and they do not think that powerful elites have planned it. But they believe that the pandemic leads to certain groups benefiting from it and that these groups have an interest in extending the pandemic. This segment makes up 7.4% of the population and 17.8% of those with conspiracy beliefs.



**Figure 2. Means of the six segments' answers to the conspiracy belief items.**

After identifying these six segments, we calculated mean values as descriptives and checked for significant differences based on two-tailed *t*-tests for equality for column means to assess the sociodemographic characteristics (see Table 2). It is striking that the *Extreme Believers* are the youngest segment, significantly younger than the *Hype Cynics*, the *Lingerers Believers*, and those not holding conspiracy beliefs. *Extreme Believers* are also the cluster with the lowest average education—being significantly less educated than *Non-Believers*—while among the six segments, the *Hype Cynics* are the highest educated. Men are particularly prevalent among *Believers* and *Distrusters*, while the other segments appear to be more balanced in this respect. The *Extreme Believers* and the *Believers* also differ from the *Non-Believers* in that their political ideology is significantly more right-wing.

In addition, the segments differ in their attitudes toward science, politics, and COVID-19. *Extreme Believers* and *Believers* trust science the least, and the *Extreme Believers* show significantly lower trust in science than the *Distrusters*, *Profit Cynics*, *Hype Cynics*, and those not holding conspiracy beliefs. The same is true for trust in scientists. When asked about the role of science in the COVID-19 pandemic, *Extreme Believers* also hold critical attitudes. They agree significantly more than the other segments (except the *Believers*) and the *Non-Believers* that we should rely more on common sense when dealing with COVID-19 and significantly less that the knowledge of scientists is important to slow down the spread of the pandemic in Switzerland. When it comes to political decisions on COVID-19, the *Believers* think significantly less than the *Distrusters* and the *Non-Believers* that such decisions should be based on scientific knowledge and agree significantly more than the *Profit Cynics* and the *Non-Believers* with the statement that "It is not the job of scientists to interfere with politics in dealing with COVID-19."

The segments also differ in their self-assessed knowledge about the virus. While *Believers* believe most—and significantly more strongly than the *Distrusters* and *Non-Believers*—that science and research on COVID-19 are so complicated that they do not understand a lot about it, the *Extreme Believers* are significantly more strongly convinced than the *Lingering Believers* and the *Non-Believers* that they know a lot about the virus.

**Table 2. Means of Sociodemographics and Attitudinal Variables Across Segments.**

	Extreme Believers (n = 99)	Believers (n = 69)	Distrusters (n = 53)	Lingering Believers (n = 81)	Hype Cynics (n = 64)	Profit Cynics (n = 79)	Non-Believers (n = 627)
<b>Sociodemographics</b>							
Age (years)	38.60 <sup>a</sup>	45.20 <sup>a,b,d</sup>	44.70 <sup>a,b,d</sup>	47.80 <sup>b,c,d</sup>	50.10 <sup>b,d</sup>	43.20 <sup>a,b</sup>	51.80 <sup>d</sup>
Gender (female)	.59 <sup>b</sup>	.33 <sup>a</sup>	.28 <sup>a</sup>	.54 <sup>a,b</sup>	.41 <sup>a,b</sup>	.42 <sup>a,b</sup>	.55 <sup>b,c</sup>
Education (tertiary)	.22 <sup>a</sup>	.25 <sup>a,b</sup>	.34 <sup>a,b</sup>	.27 <sup>a,b</sup>	.40 <sup>a,b</sup>	.24 <sup>a,b</sup>	.41 <sup>b</sup>
Political orientation	4.30 <sup>a</sup>	4.40 <sup>a</sup>	4.30 <sup>a,b</sup>	4.10 <sup>a,b</sup>	4.10 <sup>a,b</sup>	4.20 <sup>a,b</sup>	3.70 <sup>b</sup>
<b>Trust in science/scientists</b>							
Trust in science generally	3.50 <sup>d</sup>	3.57 <sup>a,d,e,f</sup>	3.98 <sup>a,b,c</sup>	3.74 <sup>a,c,d</sup>	3.93 <sup>b,c,e</sup>	4.03 <sup>c</sup>	3.82 <sup>b,c,f</sup>
Trust in scientists	3.04 <sup>a</sup>	3.20 <sup>a,d</sup>	3.85 <sup>b,e,f</sup>	3.51 <sup>d,e</sup>	3.90 <sup>b,e,f</sup>	4.18 <sup>b,c</sup>	4.05 <sup>c,f</sup>
<b>Attitudes toward the relationship between science and politics during COVID-19</b>							
When dealing with COVID-19, we should rely more on common sense rather than scientific studies.	4.03 <sup>a</sup>	3.74 <sup>a</sup>	2.93 <sup>b</sup>	2.82 <sup>b</sup>	2.98 <sup>b</sup>	2.18 <sup>c</sup>	2.00 <sup>c</sup>
The knowledge of scientists is important to slow down the spread of COVID-19 in Switzerland.	3.34 <sup>c</sup>	3.66 <sup>a,c,d</sup>	4.03 <sup>a,b,d</sup>	3.88 <sup>d,e</sup>	3.91 <sup>d</sup>	4.40 <sup>b</sup>	4.29 <sup>b,f</sup>
Political decisions in dealing with COVID-19 should be based on scientific knowledge.	3.71 <sup>a,b</sup>	3.51 <sup>a</sup>	4.03 <sup>b,c</sup>	3.80 <sup>a,b,c</sup>	3.93 <sup>a,b,c</sup>	3.96 <sup>a,b,c</sup>	4.09 <sup>c</sup>

It is not the job of scientists to interfere with politics in dealing with COVID-19.	2.84 <sup>a,b</sup>	3.15 <sup>a</sup>	2.62 <sup>a,b,c</sup>	2.64 <sup>a,b,c</sup>	2.71 <sup>a,b,c</sup>	2.36 <sup>b,c</sup>	2.31 <sup>c</sup>
Scientists should actively participate in political debates about COVID-19.	3.55 <sup>a,b</sup>	3.51 <sup>a,b</sup>	3.83 <sup>a,b</sup>	3.54 <sup>a,b</sup>	3.42 <sup>b</sup>	4.03 <sup>a</sup>	3.84 <sup>a,b</sup>

**Perceived knowledge about COVID-19**

Science and research on COVID-19 are so complicated that I don't understand a lot about it.	3.33 <sup>a,b</sup>	3.53 <sup>a</sup>	2.88 <sup>b,c</sup>	3.03 <sup>a,b,c</sup>	3.03 <sup>a,b,c</sup>	3.07 <sup>a,b,c</sup>	2.79 <sup>c</sup>
I know a lot about the novel coronavirus.	3.44 <sup>a</sup>	3.08 <sup>a,b</sup>	3.12 <sup>a,b</sup>	2.93 <sup>b</sup>	2.94 <sup>a,b</sup>	2.99 <sup>a,b</sup>	3.02 <sup>b,c</sup>

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*Note.* Values in the same row for which the superscript is not identical differ significantly with  $p < .05$  in the two-tailed  $t$ -test for equality for column means. Tests assume equality of variance.<sup>1,2</sup>

**What are the Sources of Information for Different Segments of People Holding Conspiracy Beliefs? (RQ3)**

About the (offline) use of legacy media, almost no differences exist between the segments (see Table 3). Even *Extreme Believers* use television and printed newspapers as often as the other segments, including respondents not believing in any conspiracy item. This is surprising since *Extreme Believers* also have the lowest trust in journalists—trusting them significantly less than people not holding conspiracy beliefs—and find news media coverage on the pandemic less trustworthy than the *Hype Cynics*, *Profit Cynics*, and *Non-Believers* and more exaggerated than all the other segments except the *Distrusters*.

For other media, however, clear differences are visible. *Extreme Believers* and *Believers* read science magazines significantly more often when looking for information about COVID-19 than other segments. However, while *Extreme Believers* generally use the Internet most frequently to inform themselves and talk about COVID-19 most often in interpersonal discussions, most of these differences are not significant compared with the other segments. Online, the *Extreme Believers* use social media, blogs and message boards, and video platforms such as YouTube significantly more than all the other segments, except for the *Believers*.

**Table 3. Means of Information and Media Variables Across Segments.**

	Extreme Believers (n = 99)	Believers (n = 69)	Distrusters (n = 53)	Lingering Believers (n = 81)	Hype Cynics (n = 64)	Profit Cynics (n = 79)	Non-Believers (n = 627)
<b>Legacy media contact with the topic of COVID-19</b>							
TV	4.30 <sup>a,b</sup>	4.10 <sup>a,b</sup>	4.10 <sup>a,b</sup>	4.00 <sup>a</sup>	4.00 <sup>a,b</sup>	4.30 <sup>a,b</sup>	4.40 <sup>b</sup>
Radio	3.80 <sup>a</sup>	3.60 <sup>a</sup>	3.30 <sup>a,b</sup>	3.50 <sup>a,b</sup>	3.40 <sup>a,b</sup>	2.90 <sup>b</sup>	3.50 <sup>a</sup>
Printed daily/weekly newspapers, or magazines	3.60 <sup>a</sup>	3.70 <sup>a</sup>	3.50 <sup>a</sup>	3.30 <sup>a</sup>	3.50 <sup>a</sup>	3.30 <sup>a</sup>	3.80 <sup>a</sup>
Science magazines	2.60 <sup>a</sup>	2.90 <sup>a</sup>	1.90 <sup>b</sup>	1.80 <sup>b</sup>	1.50 <sup>b</sup>	1.90 <sup>b</sup>	1.70 <sup>b</sup>
Internet	4.30 <sup>a</sup>	3.80 <sup>a,b</sup>	3.90 <sup>a,b</sup>	3.90 <sup>a,b</sup>	3.70 <sup>a,b</sup>	4.10 <sup>a,b</sup>	3.90 <sup>b</sup>
Talking about COVID-19 with friends and acquaintances	4.20 <sup>b</sup>	3.60 <sup>a</sup>	3.70 <sup>a,b</sup>	4.00 <sup>a,b</sup>	3.90 <sup>a,b</sup>	3.70 <sup>a,b</sup>	4.00 <sup>a,b</sup>
<b>Online contact with the topic of COVID-19</b>							
Newspaper and magazine websites or apps	3.70 <sup>a</sup>	3.60 <sup>a</sup>	3.70 <sup>a</sup>	3.70 <sup>a</sup>	3.00 <sup>a</sup>	3.50 <sup>a</sup>	3.60 <sup>a</sup>
Online libraries of TV and radio broadcasters	3.30 <sup>a</sup>	3.50 <sup>a</sup>	2.60 <sup>a,b,e</sup>	3.00 <sup>a,d,e</sup>	1.90 <sup>b,c</sup>	2.60 <sup>b,d,e</sup>	2.60 <sup>e</sup>



Websites of scientific institutions, authorities, and organizations	3.50 <sup>a</sup>	3.40 <sup>a</sup>	3.30 <sup>a</sup>	2.90 <sup>a</sup>	2.80 <sup>a</sup>	2.90 <sup>a</sup>	3.10 <sup>a</sup>
Facebook, Twitter, or other social networks	4.00 <sup>d</sup>	3.40 <sup>a,d,f</sup>	2.90 <sup>a,b,e</sup>	2.70 <sup>b,c,e,f</sup>	2.20 <sup>e</sup>	2.80 <sup>a,c,e</sup>	2.50 <sup>e,g</sup>
Blogs or message boards	3.00 <sup>a</sup>	2.70 <sup>a</sup>	1.90 <sup>b</sup>	1.90 <sup>b</sup>	1.70 <sup>b</sup>	1.50 <sup>b</sup>	1.80 <sup>b</sup>
Wikipedia	2.70 <sup>a</sup>	2.80 <sup>a</sup>	2.30 <sup>a,b</sup>	1.90 <sup>b,d</sup>	1.70 <sup>b,c</sup>	1.80 <sup>b</sup>	1.80 <sup>b,e</sup>
YouTube or similar video platforms	3.60 <sup>c</sup>	3.00 <sup>a,c</sup>	2.40 <sup>a,b</sup>	2.10 <sup>b,e</sup>	2.10 <sup>b,d</sup>	2.20 <sup>b</sup>	2.00 <sup>b,f</sup>
<b>Trust in journalists</b>	2.18 <sup>a</sup>	2.530 <sup>a,b</sup>	2.21 <sup>a</sup>	2.25 <sup>a</sup>	2.49 <sup>a,b</sup>	2.29 <sup>a</sup>	2.77 <sup>b</sup>
<b>Assessment of media coverage of COVID-19</b>							
trustworthy	2.50 <sup>c</sup>	2.80 <sup>a,c,d</sup>	2.80 <sup>a,c,d</sup>	2.80 <sup>a,c,d</sup>	3.00 <sup>b,d,e</sup>	3.00 <sup>a,b</sup>	3.40 <sup>e</sup>
exaggerated	4.60 <sup>c</sup>	3.70 <sup>a</sup>	4.10 <sup>a,c</sup>	3.70 <sup>a</sup>	3.80 <sup>a</sup>	2.90 <sup>b</sup>	2.70 <sup>b</sup>

Note. Values in the same row for which the superscript is not identical differ significantly with  $p < .05$  in the two-tailed  $t$ -test for equality for column means. Tests assume equality of variance.<sup>1,2</sup>

It seems that individuals holding conspiracy beliefs—at least when they score high on all conspiracy belief items, as *Believers* and *Extreme Believers* do—get a considerable part of their information diet about COVID-19 from social media.

#### ***How do Different Segments of People Holding Conspiracy Beliefs Use Social Media to Disseminate Their Beliefs? (RQ4)***

The segments differ not only in their sources of information but also in how they use social media to endorse, comment on, or disseminate conspiratorial content.

Again, *Believers* and *Extreme Believers* are the most active on social media (see Table 4). Those two segments differ significantly from respondents not holding conspiracy beliefs, and also from most other segments with conspiracy beliefs. Respondents belonging to the *Believers* and *Extreme Believers* post or share as well as like or favor information or opinions about COVID-19 most frequently, and also comment on them most often. These differences are mostly significant (except for the difference for liking or favoring and for commenting between the *Believers* and the *Distrusters*). With regard to exchanging information about the pandemic in messengers like WhatsApp, the *Extreme Believers*, *Believers*, and *Distrusters* exchange information in messengers significantly more often than *Non-Believers*.

**Table 4. Means of Communication Variables on Social Media Across Segments.**

	Extreme Believers (n = 99)	Believers (n = 69)	Distrusters (n = 53)	Lingering Believers (n = 81)	Hype Cynics (n = 64)	Profit Cynics (n = 79)	Non-Believers (n = 627)
<b>Communication behavior on social media</b>							
Post or share information or opinions about COVID-19 on the Internet	2.90 <sup>a</sup>	2.70 <sup>a</sup>	2.00 <sup>b</sup>	1.70 <sup>b</sup>	1.60 <sup>b</sup>	1.60 <sup>b</sup>	1.60 <sup>b</sup>
Like or favor information or opinions about COVID-19 on the Internet	3.00 <sup>c</sup>	2.50 <sup>a,c</sup>	1.90 <sup>a,b</sup>	1.80 <sup>b,e</sup>	1.60 <sup>b,d</sup>	1.80 <sup>b</sup>	1.80 <sup>b,f</sup>
Comment on information or opinions about COVID-19 on the Internet	2.80 <sup>c</sup>	2.40 <sup>a,c</sup>	2.00 <sup>a,b</sup>	1.70 <sup>b,e</sup>	1.70 <sup>b,d</sup>	1.60 <sup>b</sup>	1.50 <sup>b,f</sup>
Exchange information about COVID-19 in messengers like WhatsApp	3.20 <sup>a</sup>	2.80 <sup>a,b</sup>	2.80 <sup>a,b</sup>	2.50 <sup>b,c,d</sup>	2.20 <sup>b,d</sup>	2.60 <sup>a,b,d</sup>	2.10 <sup>d</sup>

Note. Values in the same row for which the superscript is not identical differ significantly with  $p < .05$  in the two-tailed  $t$ -test for equality for column means. Tests assume equality of variance.<sup>1,2</sup>

## Discussion

Research on conspiracy beliefs and the people holding them has at least three blind spots: Few studies assess how many people in a given population harbor conspiracy beliefs at all; few scholars have attempted to differentiate these individuals into groups with varying degrees and different kinds of conspiracy beliefs, and studies examining the information and communication patterns of these groups are lacking. The study at hand used survey data to assess COVID-19-related conspiracy beliefs among the Swiss population, aiming to fill these gaps.

It showed that, first, many of the Swiss—more than 40%—harbor conspiracy beliefs, even though only a small minority supports conspiracy beliefs related to COVID-19 fully. Compared with countries such as Romania and Poland (where high levels of conspiracy beliefs were shown) or Belgium and Italy (moderate levels; Theocharis et al., 2021), the Swiss population shows a low tendency toward conspiracy beliefs.

Second, it made clear that people holding conspiracy beliefs are not a homogeneous group. We reconstructed six groups of people harboring different degrees and different kinds of conspiracy beliefs: from *Extreme Believers*, who believe in all facets of COVID-19-related conspiracy beliefs over *Believers*,

*Distrusters*, and *Lingering Believers* all the way to *Hype Cynics* and *Profit Cynics*, who agree with only one of the measured items. This heterogeneity is consistent with other studies showing that people believe in conspiracies theories to varying degrees. For example, Agle and Xiao (2021) asked U.S. citizens about COVID-19-related conspiratorial narratives and identified four distinct “belief profiles” that were distinguished by concomitant belief or disbelief in conspiratorial claims.

Third, our study demonstrated that these segments differ sociodemographically and attitudinally. For example, *Extreme Believers* are the youngest group with the lowest average education. This mirrors research reporting that younger people (e.g., Galliford & Furnham, 2017) or with lower levels of education (e.g., van Prooijen, 2017) are more likely to hold conspiracy beliefs, albeit it has to be noted that other studies have not been able to confirm this relationship (e.g., Enders & Smallpage, 2019). Together with the *Believers*, *Extreme Believers* are significantly more right-wing than *Non-Believers*. With respect to attitudes toward science and politics, *Extreme Believers* and *Believers* trust science and scientists the least and hold critical attitudes toward the relationship between science and politics. This is consistent with Agle and Xiao’s (2021) study, who showed that trust in science was a significant predictor of group membership, with lower trust being associated with groups that indicated the highest believability of conspiratorial claims.

Fourth, results showed that the six segments differ in their patterns of information use. With the (offline) use of legacy media, almost no differences appear among the segments—which is surprising considering that *Extreme Believers* have the lowest trust in journalists. For other media, however, clear differences emerge. *Believers* and *Extreme Believers* get a lot of their information about COVID-19 from social media, which mirrors Allington and colleagues (2020), who found that using social media as an information source is positively linked to COVID-19-related conspiracy beliefs. In addition, both segments are by far the most active on social media (cf. Eberl & Lebernegg, 2022).

Although this heterogeneity among the Swiss population echoes the few other existing analyses of heterogeneity among supporters of conspiracy theories (Agle & Xiao, 2021; Harambam & Aupers, 2017), our study extends this research by not only identifying groups of people with varying degrees of conspiracy beliefs, but also by shedding light on important behavioral characteristics, that is, individuals’ use of information sources and social media to engage with (conspiratorial) content. Given that previous research has found that both the use of certain information sources (e.g., “alternative” sources, see Stempel et al., 2007) and certain communicative activities on social media (e.g., liking or sharing content, see Eberl & Lebernegg, 2022) are positively associated with conspiracy beliefs, it is critical to examine the extent to which this holds true across different groups of people.

Prior research has shown that to effectively counteract conspiracy theories, an understanding of their social and cultural contexts is necessary (Chandler et al., 2015; Lewandowsky, Ecker, Seifert, Schwarz, & Cook, 2012). We believe that our findings are an important step in this direction, demonstrating where decision makers, stakeholders, and communicators should look when developing and assessing communicative strategies to reach these segments and to combat conspiracy beliefs related to the current pandemic, but also to potential future crises. Our results underline, for instance, that *Extreme Believers* may not be susceptible to counter-messaging using established news or “mainstream” social media because their conspiracy beliefs are considerably stronger and because they do not trust such sources (even though

they seem to use some of them), which is regrettable given that this group is the largest among all segments. But, in turn, other groups might be targeted more effectively and efficiently, such as the *Lingering Believers* (whose conspiracy beliefs are not (yet) as firm, who trust “mainstream” sources considerably more and who also represent a large group), the *Hype Cynics* (who do not believe many aspects of conspiracy narratives other than that the pandemic is being systematically exaggerated, but who still trust science and scientists), or the *Profit Cynics* (who very strongly trust science and scientists even though they assume that some societal groups profit from the pandemic).

Our study, as all studies, also has limitations. First, it looks only at one country, Switzerland, which is interesting because it has not often been analyzed yet about conspiracy theories and adds a novel case to the field. But future studies should apply the approach presented here to compare different sociopolitical and national contexts (similar to Theocharis et al., 2021) to verify whether similar groups of conspiracy believers emerge elsewhere as well. Similarly, it would be interesting to see how findings changed if we focused on conspiracy beliefs not related to COVID-19 or on generic conspiracy beliefs, especially as individuals have often been shown to hold several conspiracy beliefs at once (Douglas et al., 2019). It would also be promising to track changes in the makeup and size of the identified segments over time to assess the role of crisis situations for the prevalence and characteristics of conspiracy beliefs in specific populations—but these additional analyses were beyond the scope of this study.

Second, it should be noted that the results of our study are explorative. LCA is suitable for unveiling structural characteristics in data sets (i.e., potential groupings of cases) but cannot prove that these structures are indeed impactful. In addition, scholars have highlighted that LCA solutions provide likelihoods for each case of belonging to each group and that fully assigning a case to its most likely group—as practiced in this study—leads to information loss.

Third, the measurements of conspiracy beliefs, while being derived from prior research and representing different aspects of COVID-19-related conspiracy beliefs, consist of only five items and should be further substantiated. Subsequently, it is subject to discussion whether the identified *Profit Cynics* can be seen as conspiracy believers as they agree only to one of the conspiracy items, which argues that certain societal groups profit from the pandemic. It will be up to future studies to remedy these shortcomings and develop the field further in this respect.

## References

- Agley, J., & Xiao, Y. (2021). Misinformation about COVID-19: Evidence for differential latent profiles and a strong association with trust in science. *BMC Public Health, 21*(89), 1–12. <https://doi.org/10.1186/s12889-020-10103-x>
- Allington, D., Duffy, B., Wessely, S., Dhavan, N., & Rubin, J. (2020). Health-protective behaviour, social media usage and conspiracy belief during the COVID-19 public health emergency. *Psychological Medicine, 51*(10), 1–7. <https://doi.org/10.1017/S003329172000224X>

- Aupers, S. (2012). 'Trust no one': Modernization, paranoia and conspiracy culture. *European Journal of Communication, 27*(1), 22–34. <https://doi.org/10.1177/0267323111433566>
- Ballová Mikušková, E. (2018). Conspiracy beliefs of future teachers. *Current Psychology, 37*(3), 692–701. <https://doi.org/10.1007/s12144-017-9561-4>
- Bessi, A., Scala, A., Rossi, L., Zhang, Q., & Quattrociocchi, W. (2014). The economy of attention in the age of (mis)information. *Journal of Trust Management, 1*(1), 1–13. <https://doi.org/10.1186/s40493-014-0012-y>
- Bjerg, O., & Presskorn-Thygesen, T. (2017). Conspiracy theory: Truth claim or language game? *Theory, Culture & Society, 34*(1), 137–159. <https://doi.org/10.1177/0263276416657880>
- Brotherton, R., French, C. C., & Pickering, A. D. (2013). Measuring belief in conspiracy theories: The generic conspiracist beliefs scale. *Frontiers in Psychology, 4*, 1–15. <https://doi.org/10.3389/fpsyg.2013.00279>
- Chandler, C., Fairhead, J., Kelly, A., Leach, M., Martineau, F., Mokuwa, E., . . . Wilkinson, A. (2015). Ebola: Limitations of correcting misinformation. *The Lancet, 385*(9975), 1275–1277. [https://doi.org/10.1016/S0140-6736\(14\)62382-5](https://doi.org/10.1016/S0140-6736(14)62382-5)
- Chapman, C., & Feit, E. M. (2015). *R for marketing research and analytics*. Cham, Switzerland: Springer. Retrieved from <https://link.springer.com/book/10.1007/978-3-030-14316-9>
- DeWitt, D., Atkinson, M., & Wegner, D. (2018). How conspiracy theories spread. In J. E. Uscinski (Ed.), *Conspiracy theories and the people who believe them* (pp. 319–336). New York, NY: Oxford University Press.
- Douglas, K. M., Uscinski, J. E., Sutton, R. M., Cichocka, A., Nefes, T., Ang, C. S., & Deravi, F. (2019). Understanding conspiracy theories. *Political Psychology, 40*(S1), 3–35. <https://doi.org/10.1111/pops.12568>
- Eberl, J.-M., & Lebernegg, N. (2022). The pandemic through the social media lens: correlates of COVID-19-related social media use in Austria. *MedienJournal, 45*(3), 5–15. <https://doi.org/10.24989/medienjournal.v45i3.2037>
- Enders, A. M., & Smallpage, S. M. (2019). Who are conspiracy theorists? A comprehensive approach to explaining conspiracy beliefs. *Social Science Quarterly, 100*(6), 2017–2032. <https://doi.org/10.1111/ssqu.12711>
- Enten, H. (2021, July 18). Half of the U.S. believes a deadly conspiracy theory. *CNN*. Retrieved from <https://edition.cnn.com/2021/07/17/politics/conspiracy-theories-election-vaccines-analysis/index.html>

- Freeman, D., & Bentall, R. P. (2017). The concomitants of conspiracy concerns. *Social Psychiatry and Psychiatric Epidemiology*, *52*(5), 595–604. <https://doi.org/10.1007/s00127-017-1354-4>
- Füchslin, T. (2019). Science communication scholars use more and more segmentation analyses: Can we take them to the next level? *Public Understanding of Science*, *28*(7), 854–864. <https://doi.org/10.1177/0963662519850086>
- Galliford, N., & Furnham, A. (2017). Individual difference factors and beliefs in medical and political conspiracy theories. *Scandinavian Journal of Psychology*, *58*(5), 422–428. <https://doi.org/10.1111/sjop.12382>
- Goertzel, T. (1994). Belief in conspiracy theories. *Political Psychology*, *15*(4), 731–742. <https://doi.org/10.2307/3791630>
- Gollwitzer, M. (2012). Latent-class-analysis. In H. Moosbrugger & A. Kelava (Eds.), *Testtheorie und Fragebogenkonstruktion* [Test theory and questionnaire construction] (2nd ed., pp. 295–323). Berlin, Heidelberg: Springer. [https://doi.org/10.1007/978-3-642-20072-4\\_12](https://doi.org/10.1007/978-3-642-20072-4_12)
- Goreis, A., & Voracek, M. (2019). A systematic review and meta-analysis of psychological research on conspiracy beliefs. *Frontiers in Psychology*, *10*, 1–13. <https://doi.org/10.3389/fpsyg.2019.00205>
- Harambam, J., & Aupers, S. (2017). 'I am not a conspiracy theorist': Relational identifications in the Dutch conspiracy milieu. *Cultural Sociology*, *11*(1), 113–129. <https://doi.org/10.1177/1749975516661959>
- Hine, D. W., Reser, J. P., Morrison, M., Phillips, W. J., Nunn, P., & Cooksey, R. (2014). Audience segmentation and climate change communication. *Wiley Interdisciplinary Reviews: Climate Change*, *5*(4), 441–459. <https://doi.org/10.1002/wcc.279>
- Hofstadter, R. (1965). *The paranoid style in American politics and other essays*. New York, NY: Random House.
- Humprecht, E., Esser, F., & Van Aelst, P. (2020). Resilience to online disinformation: A framework for cross-national comparative research. *The International Journal of Press/Politics*, *25*(3), 493–516. <https://doi.org/10.1177/1940161219900126>
- Ichino, A., & Räikkä, J. (2021). Non-doxastic conspiracy theories. *Argumenta—Journal of Analytic Philosophy*, *13*, 1–18. Retrieved from <https://www.argumenta.org/article/non-doxastic-conspiracy-theories>
- Keeley, B. L. (1999). Of conspiracy theories. *The Journal of Philosophy*, *96*(3), 109–129.

- Kim, M., & Cao, X. (2016). The impact of exposure to media messages promoting government conspiracy theories on distrust in the government. *International Journal of Communication*, *10*, 3808–3827.
- Lewandowsky, S., Ecker, U. K. H., Seifert, C. M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, *13*(3), 106–131. <https://doi.org/10.1177/1529100612451018>
- Linzer, D., & Lewis, J. (2014). *poLCA: Polytomous variable Latent Class Analysis (V 1.4.1)* [Computer software]. Retrieved from <https://CRAN.R-project.org/package=poLCA>
- Mahl, D., Schäfer, M. S., & Zeng, J. (2022). Conspiracy theories in online environments: An interdisciplinary literature review and agenda for future research. *New Media & Society*. Advance online publication. <https://doi.org/10.1177/14614448221075759>
- Mahl, D., Zeng, J., & Schäfer, M. S. (2021). From “Nasa Lies” to “Reptilian Eyes”: Mapping communication about 10 conspiracy theories, their communities, and main propagators on Twitter. *Social Media & Society*, *7*(2), 1–12. <https://doi.org/10.1177/20563051211017482>
- Maibach, E. W., Weber, D., Massett, H., Hancock, G. R., & Price, S. (2006). Understanding consumers’ health information preferences: Development and validation of a brief screening instrument. *Journal of Health Communication*, *11*(8), 717–736. <https://doi.org/10.1080/10810730600934633>
- Meirick, P. C. (2013). Motivated misperception? Party, education, partisan news, and belief in “death panels.” *Journalism & Mass Communication Quarterly*, *90*(1), 39–57. <https://doi.org/10.1177/1077699012468696>
- Metag, J., Fuchslin, T., & Schäfer, M. S. (2017). Global warming’s five Germanys: A typology of Germans’ views on climate change and patterns of media use and information. *Public Understanding of Science*, *26*(4), 434–451. <https://doi.org/10.1177/0963662515592558>
- Metag, J., & Schäfer, M. S. (2018). Audience segments in environmental and science communication. *Environmental Communication*, *12*(8), 995–1004. <https://doi.org/10.1080/17524032.2018.1521542>
- Miller, J. M., Saunders, K. L., & Farhart, C. E. (2016). Conspiracy endorsement as motivated reasoning: The moderating roles of political knowledge and trust. *American Journal of Political Science*, *60*(4), 824–844. <https://doi.org/10.1111/ajps.12234>
- Milošević Đorđević, J., Mari, S., Vdović, M., & Milošević, A. (2021). Links between conspiracy beliefs, vaccine knowledge, and trust: Anti-vaccine behavior of Serbian adults. *Social Science & Medicine*, *277*, 1–8. <https://doi.org/10.1016/j.socscimed.2021.113930>

- Ritchie, H., Mathieu, E., Rodés-Guirao, L., Appel, C., Giattino, C., Ortiz-Ospina, E., . . . Roser, M. (2020). *Coronavirus pandemic (COVID-19)*. Retrieved from <https://ourworldindata.org/covid-vaccinations#citation>
- Romer, D., & Jamieson, K. H. (2020). Conspiracy theories as barriers to controlling the spread of COVID-19 in the U.S. *Social Science & Medicine (1982)*, *263*, 1–8. <https://doi.org/10.1016/j.socscimed.2020.113356>
- Schäfer, M. S., Füchslin, T., Metag, J., Kristiansen, S., & Rauchfleisch, A. (2018). The different audiences of science communication: A segmentation analysis of the Swiss population's perceptions of science and their information and media use patterns. *Public Understanding of Science*, *27*(7), 836–856. <https://doi.org/10.1177/0963662517752886>
- Schneider, J., Schmitt, J. B., & Rieger, D. (2020). Wenn die Fakten der Anderen nur eine Alternative sind—"Fake News" in Verschwörungstheorien als überdauerndes Phänomen [When the facts of others are only an alternative—"Fake news" in conspiracy theories as an enduring phenomenon]. In R. Hohlfeld, M. Harnischmacher, & E. Heinke (Eds.), *Fake News und Desinformation [Fake news and disinformation]* (1st ed., pp. 283–294). Baden-Baden, Germany: Nomos. <https://doi.org/10.5771/9783748901334-283>
- Smallpage, S. M., Drochon, H., Uscinski, J. E., & Klofstad, C. (2020). Who are the conspiracy theorists? Demographics and conspiracy theories. In M. Butter & P. Knight (Eds.), *Routledge handbook of conspiracy theories* (pp. 263–277). London, UK: Routledge Taylor & Francis Group.
- Stempel, C., Hargrove, T., & Stempel, G. H. (2007). Media use, social structure, and belief in 9/11 conspiracy theories. *Journalism & Mass Communication Quarterly*, *84*(2), 353–372. <https://doi.org/10.1177/107769900708400210>
- Stoica, P., & Selen, Y. (2004). Model-order selection: A review of information criterion rules. *IEEE Signal Processing Magazine*, *21*(4), 36–47. <https://doi.org/10.1109/MSP.2004.1311138>
- Sunstein, C. R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures. *Journal of Political Philosophy*, *17*(2), 202–227. <https://doi.org/10.1111/j.1467-9760.2008.00325.x>
- Sutton, R. M., & Douglas, K. M. (2020). Conspiracy theories and the conspiracy mindset: Implications for political ideology. *Current Opinion in Behavioral Sciences*, *34*, 118–122. <https://doi.org/10.1016/j.cobeha.2020.02.015>
- Swami, V., Chamorro-Premuzic, T., & Furnham, A. (2010). Unanswered questions: A preliminary investigation of personality and individual difference predictors of 9/11 conspiracist beliefs. *Applied Cognitive Psychology*, *24*(6), 749–761. <https://doi.org/10.1002/acp.1583>



- Swami, V., Voracek, M., Stieger, S., Tran, U. S., & Furnham, A. (2014). Analytic thinking reduces belief in conspiracy theories. *Cognition*, *133*(3), 572–585.  
<https://doi.org/10.1016/j.cognition.2014.08.006>
- Swissinfo. (2022, January 8). *Protest in Zurich against Covid measures as expert calls for more*. Retrieved from <https://www.swissinfo.ch/eng/protest-in-zurich-against-covid-measures-as-expert-calls-for-more/47247288>
- Theocharis, Y., Cardenal, A., Jin, S., Aalberg, T., Hopmann, D. N., Strömbäck, J., . . . Štětka, V. (2021). Does the platform matter? Social media and COVID-19 conspiracy theory beliefs in 17 countries. *New Media & Society*, 1–26. <https://doi.org/10.1177/14614448211045666>
- Uscinski, J. E. (2018). What is a conspiracy theory? In J. E. Uscinski (Ed.), *Conspiracy theories and the people who believe them* (pp. 47–52). New York, NY: Oxford University Press.  
<https://doi.org/10.1093/OSO/9780190844073.001.0001>
- Uscinski, J. E., DeWitt, D., & Atkinson, M. D. (2018). A web of conspiracy? Internet and conspiracy theory. In A. Dyrendal, D. G. Robertson, & E. Aspren (Eds.), *Handbook of conspiracy theory and contemporary religion* (pp. 106–130). Leiden, The Netherlands: Brill.  
[https://doi.org/10.1163/9789004382022\\_007](https://doi.org/10.1163/9789004382022_007)
- van Prooijen, J.-W. (2017). Why education predicts decreased belief in conspiracy theories. *Applied Cognitive Psychology*, *31*(1), 50–58. <https://doi.org/10.1002/acp.3301>
- van Prooijen, J.-W., & Douglas, K. M. (2017). Conspiracy theories as part of history: The role of societal crisis situations. *Memory Studies*, *10*(3), 323–333.  
<https://doi.org/10.1177/1750698017701615>
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, *359*(6380), 1146–1151. <https://doi.org/10.1126/science.aap9559>
- Warner, B. R., & Neville-Shepard, R. (2014). Echoes of a conspiracy: Birthers, truthers, and the cultivation of extremism. *Communication Quarterly*, *62*(1), 1–17.  
<https://doi.org/10.1080/01463373.2013.822407>
- Wheeldon, T. (2021, July 18). Conspiracy theories fuel French opposition to Covid-19 'health pass'. *France24*. Retrieved from <https://www.france24.com/en/france/20210718-conspiracy-theories-fuel-french-opposition-to-covid-19-health-pass>
- Wood, M. J., & Douglas, K. M. (2015). Online communication as a window to conspiracist worldviews. *Frontiers in Psychology*, *6*, 1–8. <https://doi.org/10.3389/fpsyg.2015.00836>

World Health Organization. (2020). *Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation*. Retrieved from <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>

YouGov. (2020). *YouGov Cambridge globalism 2020*. Retrieved from <https://docs.cdn.yougov.com/msvke1lg9d/Globalism2020%20Guardian%20Conspiracy%20Theories.pdf>