Agenda-Setting Effects During Times of Social Disruption: The Influence of Mass Media and Personal Experiences on Societal Concerns

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Using an 8-wave panel survey of German citizens, the present study investigates the media's agenda-setting power in the context of the disruptive coronavirus pandemic. By examining how societal concerns are influenced by mass media and personal experiences, this study shows differences regarding the health, political, and economic dimensions of the crisis. Only health-related societal concerns were influenced by the perceived issue salience in the media. Societal concerns regarding the economy were shaped by individuals' evaluation of the adequacy of the perceived issue salience in the media and thus not by the media agenda per se. In contrast, societal concerns regarding restrictions on fundamental rights were strongly influenced by people's personal experiences. Variations in the role of mass media and personal experiences over the course of the pandemic can be traced back to changes in the severity of the crisis and its different phases.

Keywords: crisis, societal concerns, agenda setting, mass media experiences, personal experiences, COVID-19 pandemic

Times of social disruption mostly arise from sudden emerging crisis events, such as armed conflicts, pandemics, or economic crashes. They cause serious damage, which, in turn, affects the regular functioning of various social systems, such as politics, health, and the economy (Perry, 2018). Therefore, disruptive times are often turning points in the political process (Stevens & Vaughan-Williams, 2016). To understand such developments, people's societal concerns during crises—that is, concerns about the situation of society (Mutz, 1998)—must be investigated because they can influence political attitudes, policy support, and finally, the functioning of democracy (Cho & Kuang, 2015). Therefore, we aim to analyze the factors influencing the public's societal concerns in disruptive times.

Societal concerns are based on direct and indirect experiences made during a crisis (Boomgaarden, van Spanje, Vliegenthart, & Vreese, 2011; Mutz, 1998). A central source of indirect experiences is the mass media as they provide the public with important information and assessments of the current situation

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(Sellnow & Seeger, 2021). According to agenda-setting theory (McCombs & Shaw, 1972), people's societal concerns are shaped by the amount of issue-related media coverage (Vliegenthart & Damstra, 2019) and its evaluation (Fahmy & Johnson, 2007). However, when crises disrupt everyday life, not only media experiences but also people's personal experiences can influence societal concerns (Mutz, 1998; Yang et al., 2021). As such perceptions of direct impact make disruptive times more obtrusive (McCombs & Reynolds, 2002), the consideration of personal experiences becomes important for understanding the occurrence of agenda-setting effects. However, they have often been neglected in the crisis context so far.

A recent example of such a crisis is the coronavirus pandemic. This multifaceted crisis has challenged not only the health-care system, the normal functioning of politics, and the economy but also people's everyday lives in an unprecedented way. Thus, this specific context allows us to examine the validity of the agenda-setting hypothesis during times of severe social disruption. In particular, we investigate the effects of indirect (mass media) and direct (personal) experiences on societal concerns in the context of the coronavirus pandemic.

Besides this conceptual contribution, we add to the current state of agenda-setting research in three ways: (a) Methodologically, we address the challenge of capturing people's exposure to the media agenda in an environment in which different media are used highly individually and selectively. We do this by examining the effects of the perceived amount of coverage of the issue (i.e., perceived issue salience in the media; Geiß, 2022) on the individually used information sources and the evaluation of the adequacy of the volume. (b) To gain additional insights into the role of obtrusiveness in the crisis context, we compare three different aspects of the coronavirus pandemic, which vary in their level of personal tangibility. Specifically, we consider experiences and concerns regarding the threat of the virus (health aspect), restrictions on fundamental rights (political aspect), and financial consequences (economic aspect). (c) Using an eight-wave panel survey, we examine the changing relevance of mass media and personal experiences over the course of the coronavirus pandemic. Previous researchers (Li, Wei, Lo, Zhang, & Zhu, 2021) primarily focused on the very beginning of the crisis, which was—due to uncertainty being extremely high—a very formative phase. However, considering the up- and downturns (Vliegenthart & Damstra, 2019) and the different phases of a crisis (initial, maintenance, and resolution; Reynolds & Seeger, 2005) may be crucial for a more sophisticated understanding of agenda-setting effects on societal concerns during long-lasting disruptive times.

The Role of Mass Media Experiences in Shaping Societal Concerns

Disruptive times (Damstra & Boukes, 2021) and the coronavirus pandemic in particular (Maurer, Wagner, & Weiß, 2021) have evoked a large amount of media coverage. The influence of such increasing media coverage on the public is expounded by the agenda-setting theory (McCombs & Shaw, 1972; Vliegenthart & Damstra, 2019). Following this strand of research, mass media experiences should strongly affect the public's societal concerns, especially in situations of uncertainty such as periods of social disruption.

Agenda-Setting Effects

The agenda-setting theory (McCombs & Shaw, 1972) explains how the media affect the importance that people attach to different issues and, thus, how concerned they are about a certain problem.

Accordingly, researchers have applied the agenda-setting theory to examine media effects on recipients' concerns in the context of multiple disruptive events (Fahmy & Johnson, 2007; Vliegenthart & Damstra, 2019). The rationale is generally that when issue-related media coverage increases, so do societal concerns (Vliegenthart & Damstra, 2019).

Previous researchers have examined these relationships from different methodological perspectives. Some researchers (Vliegenthart & Damstra, 2019) examined agenda-setting effects in a crisis context at the aggregate level by comparing the amount of coverage of a certain issue (content analysis) with people's related societal concerns (survey), as originally suggested by agenda-setting studies (McCombs & Shaw, 1972). To examine effects at the individual level (Erbring, Goldenberg, & Miller, 1980), other studies additionally investigated recipients' media use of the information sources analyzed in content analysis (Boomgaarden et al., 2011). However, since the beginning of agenda-setting research, the media landscape has become increasingly fragmented (Naser, 2020). Information is made available through an almost unmanageable number of sources. Consequently, it is practically impossible to capture the content of people's entire media repertoire with content analysis.

Therefore, it is unsurprising that most communication researchers investigating societal concerns in a crisis context focus on the effects of individuals' mass media exposure without taking content into account. However, these survey-based studies have generated mixed results (Entradas, 2021; Oh, Paek, & Hove, 2015; Wirz, Mayorga, & Johnson, 2021). For example, regarding the coronavirus pandemic, Yang and colleagues (2021) found that high exposure to the crisis via mass media amplified societal risk perceptions among Chinese but not U.S. college students. In contrast, Entradas (2021) revealed that high exposure to print media coverage about COVID-19 weakened such concerns among Portuguese citizens, while Li and colleagues (2021) found no significant relationship between news attention to COVID-19 and Chinese residents' risk perceptions at the societal level.

In light of these inconsistent findings, the question arises as to whether a pure focus on media usage is meaningful. Rather, it seems important to understand how intensively people are exposed to certain content in individually and selectively used media. Therefore, we argue that when examining agenda-setting effects, an investigation of individuals' perception of issue salience in the media (Geiß, 2022) that they actually use may be a more appropriate approach to capture how intensively people come in contact with a certain issue. Thus, referring to the assumption that increased coverage of an issue leads to stronger societal concerns, we hypothesize the following regarding the perceived salience of an issue in the media:

H1:   *The higher the perceived issue salience in the mass media, the stronger the corresponding societal concerns.*

Relevance of Media Evaluations in Agenda-Setting Effects

Several studies have shown that not only the perception of the media agenda but also recipients' individual evaluations of the news media and their performance (Fahmy & Johnson, 2007; Tsfati, 2003)—such as the adequacy, accuracy, or trustworthiness of coverage—cause agenda-setting effects. For example, agenda-setting effects are stronger among people who perceive media coverage as accurate than among

those who consider it exaggerated (Fahmy & Johnson, 2007). Furthermore, in the context of the coronavirus pandemic, researchers have recently shown that higher trust in news coverage leads to stronger media effects on crisis-related outcomes (Gehrau, Fujarski, Lorenz, Schieb, & Blöbaum, 2021; Wu & Shen, 2022).

Considering the immense media coverage of the coronavirus crisis, particularly the evaluation of whether the media covered the issue adequately or not, namely "too much" or "too little" (Friemel, Geber, Egli, & Lindards, 2020), might be crucial for agenda-setting effects. In particular, when people consider issue-related information too much, intensive media coverage can not only have positive consequences but also elicit defensive reactions, such as issue fatigue (Schumann & Arlt, 2023) or reactance behaviors (Neureiter, Stubenvoll, Kaskeleviciute, & Matthes, 2021). Thus, if people evaluate the perceived salience of the coronavirus pandemic in the media as too much, classic agenda-setting effects—in which recipients use the media agenda as a valid indicator of a justified level of societal concern—are less likely. Specifically, compared with individuals' consideration that such coverage is adequate, the impact of the media's agenda setting on societal concerns may be weaker (Fahmy & Johnson, 2007) or even reversed (Neureiter et al., 2021). Thus, regarding people who thought that the perceived coverage of the coronavirus pandemic in the media was too much, we hypothesize the following:

H2:   The societal concerns of people who evaluate the perceived issue salience in the mass media as too much are lower than the concerns of people who evaluate the perceived issue salience in the media as adequate.

In contrast, how the evaluation of perceiving too little media coverage of an issue influences societal concerns remains unclear—although this criticism is also present regarding COVID-19 media coverage (Friemel et al., 2020), for example. The literature suggests that the effect of perceiving that the media coverage is insufficient is different from perceiving that the coverage is excessive (Beyer & Matthes, 2015; Friemel et al., 2020). Previous empirical researchers, however, focused on the consequences of the latter. To clarify how recipients' evaluation of the amount of media coverage as too little shapes societal concerns, we propose the following research question:

RQ1:   How does evaluating the perceived salience of the coronavirus pandemic in the mass media as too little affect people's corresponding societal concerns?

The Role of Personal Experiences in Shaping Societal Concerns

When examining agenda-setting effects during a crisis, it is crucial to consider that not only the media but also personal experiences are a source of societal concerns. In this context, agenda-setting research (Vliegenthart & Damstra, 2019) often draws on the concept of issue obtrusiveness (Demers, Craff, Choi, & Pessin, 1989). Unobtrusive issues are difficult to experience directly (e.g., foreign affairs or political corruption) and thus are experienced mainly secondhand through the media. In contrast, when people can rely on personal experiences, issues become obtrusive (Demers et al., 1989; McCombs & Reynolds, 2002). In this case, not only do media experiences shape people's societal concerns but inferences from personal experiences, including one's own situation or the situation of closely related persons, to concerns at the societal level are likely to do so as well (Mutz, 1998).

Regarding disruptive events, obtrusiveness varies strongly. Some crises occur far from an individual's living environment and therefore remain distant, whereas others disrupt peoples' everyday lives. Because the coronavirus pandemic—unlike many other crises—has been experienced directly by almost everyone, it can be considered an obtrusive issue in some ways. In particular, the health threat of infection by the virus, restrictions on personal contacts, the wearing of masks, and the closure of educational institutions and companies were personally perceivable. Consequently, we argue that in the context of the coronavirus pandemic, a generalization from personal experiences to societal concerns is very plausible.

Only a few studies have empirically tested this association (e.g., Yang et al., 2021), but they support our assumption by showing that not only media exposure but also perceived personal health risks regarding COVID-19 are positively correlated with societal concerns. Thus, we hypothesize the following:

H3:   *The higher the number of personal experiences regarding the coronavirus pandemic, the higher the corresponding societal concerns.*

Changing Relevance of Mass Media and Personal Experiences

Although direct and indirect experiences may shape societal concerns during disruptive times, the following question remains open: What actually matters more—media or personal experiences? According to previous researchers (Shafi, 2017), a more obtrusive issue decreases agenda-setting effects because personal experience outweighs indirect exposure via the media. Therefore, researchers have repeatedly argued that in disruptive periods, stronger media effects are more likely as personal experiences are limited, and they are accompanied by high levels of uncertainty, which boost people's information needs (Buturoiu & Gavrilsecu, 2021). However, for a complex and long-lasting dynamic crisis, such as the coronavirus pandemic, this rationale falls short.

It can be argued that the effects of mass media and personal experiences on societal concerns can change over time for two different reasons. On the one hand, during a long-lasting crisis, the obtrusiveness and thus agenda-setting effects can strongly differ depending on the up- and downturns of a crisis in the real world. For instance, during the financial crisis (since 2008), agenda-setting effects decreased when the economic situation worsened and, consequently, became more obtrusive (Vliegenthart & Damstra, 2019). On the other hand, when a crisis becomes more severe, uncertainty and thus information needs may increase while the amount of media coverage also grows (Damstra & Boukes, 2021). Under such circumstances, it is equally plausible that people rely more on mass media experience than on personal experiences when they make judgments about the societal situation.

So far, however, previous communication researchers focused on the very beginning of the coronavirus pandemic and accordingly, provide no insights into the changing role of mass media and personal experiences as influential factors in societal concerns from a longitudinal perspective. Therefore, we pose the following research question:

RQ2:   *How do the effects of mass media and personal experiences on corresponding societal concerns develop over time?*

In addition*,* some crises come along with concerns regarding more than one aspect (Choi, Yoo, Noh, & Park, 2017). This is especially true for the coronavirus pandemic. The crisis was accompanied not only by a major health threat due to the spread of the virus (health aspect) but also by restrictions on fundamental rights (political aspect) and severe economic consequences (economic aspect). It can be argued that the degree of obtrusiveness of these different crisis aspects might differ (McCombs & Reynolds, 2002; Shafi, 2017) over time and in general. While restrictions on personal freedom were noticeable for almost everyone, the personal health-related and economic threats varied substantially across individuals. Furthermore, models of crisis communication (e.g., crisis and emergency risk communication; Reynolds & Seeger, 2005) support the need to differentiate between distinct crisis aspects as well. The models suggest that in media coverage as well, the prominence of different crisis issues changes over time depending on the specific phase of the crisis, namely, among the initial, maintenance, and resolution phases (Jin & Spence, 2020). Therefore, we expect that the relevance of mass media and personal experiences in shaping societal concerns differs among specific aspects of the coronavirus pandemic (health, politics, and the economy), but how these relationships develop in the context of such a long-lasting crisis remains unclear. Thus, we pose the final research question:

RQ3:   *How do the effects of mass media and personal experiences on corresponding societal concerns develop with respect to specific crisis aspects (health, politics, and the economy)?*

Methods

We tested the hypotheses and answered the research questions based on data from an eight-wave online panel survey of German citizens conducted between April 2020 and April 2022. The data collection took place at different time points of the coronavirus pandemic, following the scientifically forecast up- and downturns of German infection rates, but post hoc data collection was assigned to about three major stages of the crisis (Reynolds & Seeger, 2005; see Figure 1).

Procedure and Participants

The panel study was implemented by the online access panel of respondi AG (ISO certified, 20252:2019). The first survey wave (t_1) was fielded at the beginning of the pandemic between April 1 and April 9, 2020. Based on a quota selection stratified by gender, age, and education, the initial sample included a total of 1,458 individuals in the German population aged at least 18 years; 50.4% of the participants were female, while 49.5% were male. The mean age was 46.9 years ($SD = 15.9$). In addition, 35.6% of the respondents had the highest German education degree, 32.2% had a medium education degree, and 32.2% had the lowest education degree or no degree. Due to the decreasing response rate (panel mortality) in the following waves (see Appendix A), in April 2021 (t_5) a new sample of 1,320 persons based on the same quota selection criteria was added. Thus, a total of 2,029 respondents were surveyed at t_5. The final survey of the panel study was fielded between April 1 and April 8, 2022 (t_8); 856 people were interviewed.
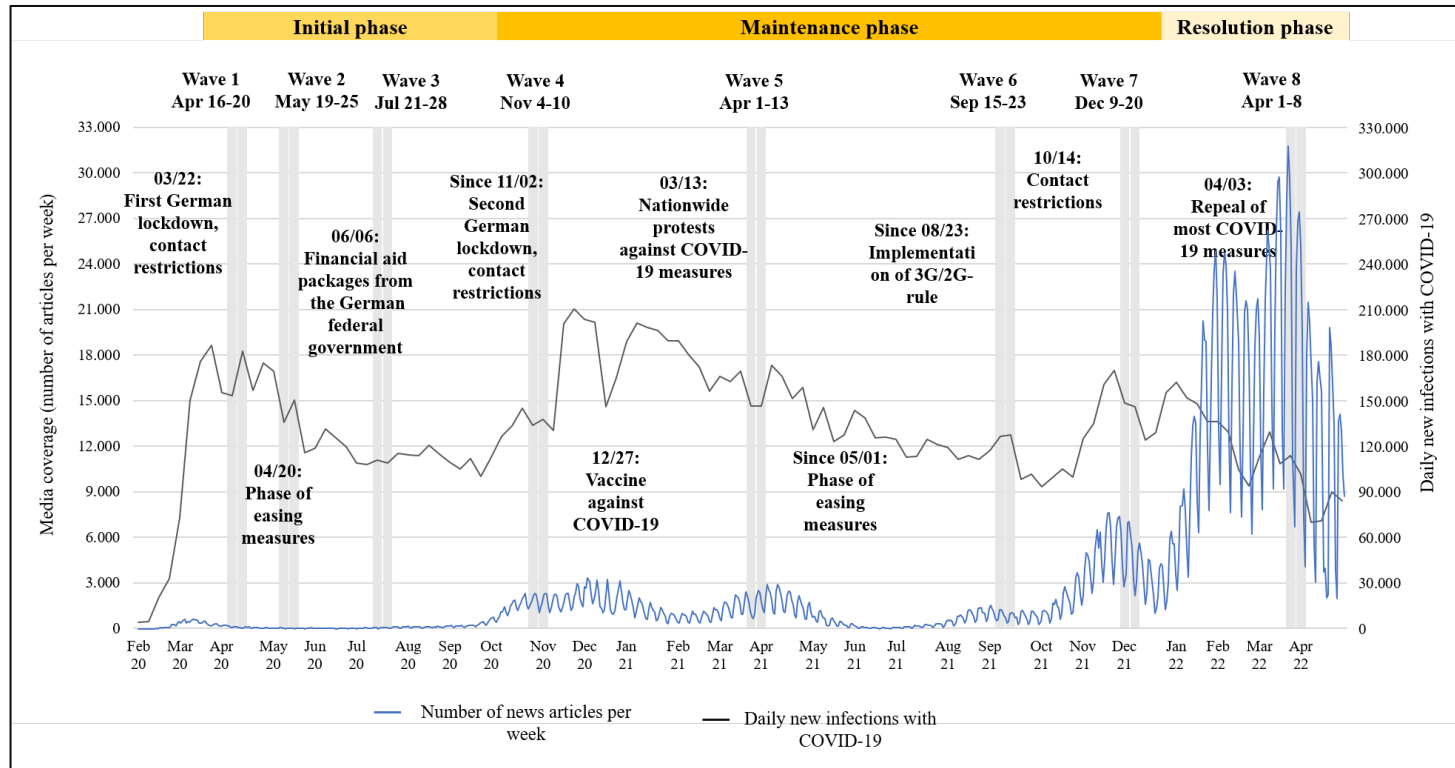
Figure 1. Real–world developments of the coronavirus pandemic in Germany.

Note. The data for German media coverage (online and print) per week were collected from the LexisNexis database, using the search terms "corona" and "covid." Data for daily COVID-19 infections were based on calculations by the Robert Koch Institute (2023). More detailed information on the search strategy and real-world developments is available on OSF (Schaller, Arlt, & Wolling, 2023)

Measures

Considering the multiple aspects of the coronavirus pandemic, societal concerns, personal experiences, and mass media experiences were examined for health threats, political restrictions, and economic consequences in all panel waves (see Appendix B).

Societal Concerns

Societal concerns regarding the coronavirus pandemic were measured with statements referring to the situation in Germany at large (1 = *does not apply*, 5 = *fully applies*; Boomgaarden et al., 2011; Mutz, 1998). Health-related concerns were assessed with two items: "COVID-19 is a serious health threat for the German population" and "I am afraid that many people in Germany will become infected." Furthermore, we developed two statements for measuring political concerns regarding restrictions on fundamental rights ("The measures against the spread of COVID-19 severely restrict the fundamental rights in Germany" and "I''m angry that people in Germany are not allowed to do a lot of things that they usually do") and one item to investigate respondents' economic concerns ("The German economy is strong enough to fully recover from the damage caused by COVID-19"; reverse coded).

Personal Experiences

Personal experiences were assessed using similar statements, but they referred explicitly to the pandemic's impact on the respondent's personal life (1 = *does not apply*, 5 = *fully applies*). To measure health-related experiences, we used four items indicating the extent to which the coronavirus was perceived as a risk for the individual personally or for people close to the respondent, such as "COVID-19 is a health threat for me personally" and "COVID-19 is a health threat for people close to me." We also developed two statements to measure personal experiences related to economics (e.g., "People in my personal environment suffer financial disadvantages due to COVID-19") and political aspects (e.g., "Due to the measures taken to combat COVID-19 at my place of residence, my fundamental rights are severely restricted").

Mass Media Experiences

Perceived issue salience in the media was assessed by asking participants how often (1 = *never*, 5 = *very frequently*) they perceived information on the different aspects of the coronavirus pandemic in the mass media they used.[1] In terms of the health aspect, people were asked about the perceived salience of the "spread of COVID-19 in Germany" and the "situation in medical practices and hospitals in Germany" in the media they use. Similarly, we assessed the perceived salience of the economic aspect ("consequences of COVID-19 measures for the German economy") and the political aspect ("current restrictions of fundamental rights in Germany") with one item each. For the *evaluation of the adequacy of the perceived*

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[1] Before they indicated how often they viewed related information in the mass media, participants were asked which information sources they used. The information sources considered were television, newspapers, and radio.

issue salience in the media, respondents were asked regarding all previous statements whether they rated the extent of information as adequate, too much, or too little. We built two dummy variables for each issue, indicating whether perceived media salience was considered too much or adequate (too much = 1 vs. not too much = 0) or too little or adequate (too little = 1 vs. not too little = 0). A detailed overview of all measurements is available on OSF (Schaller et al., 2023).

Results

Figure 2 shows the development of societal concerns, personal experiences, and perceived media salience at the aggregate level. Societal health concerns developed relatively parallel to the perceived amount of media coverage and personal experiences. The perceived amount of economic and political aspects in media coverage, however, decreased over time, whereas corresponding societal concerns and personal experiences showed up- and downturns over the course of the pandemic.
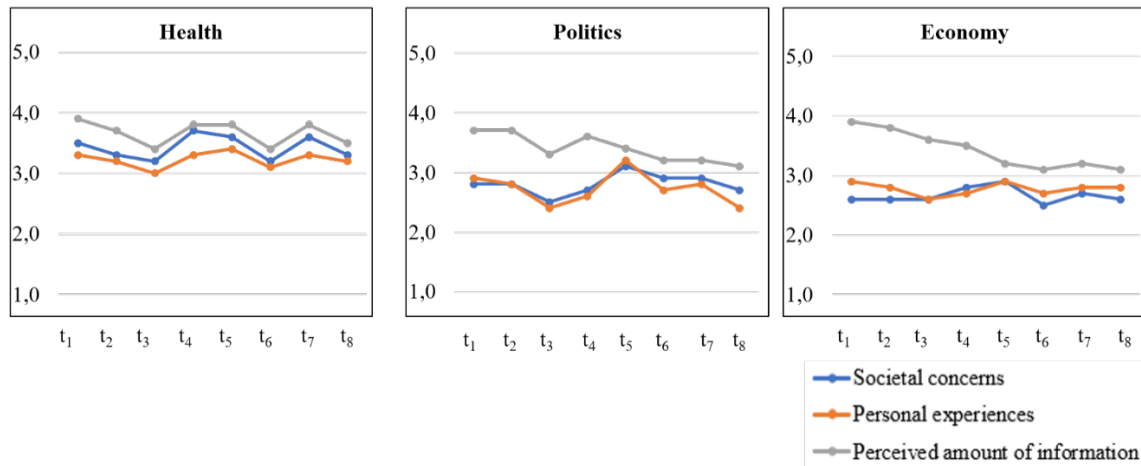
Figure 2. Descriptive development of societal concerns, perceived media salience, and personal experiences.

To examine the hypotheses and the research questions, we ran hierarchical regression analyses. Societal concerns regarding the coronavirus crisis in terms of health, politics, and the economy served as dependent variables, whereas the corresponding mass media and personal experiences were used as independent variables. We controlled for autoregression by first including the lagged version of the dependent variable (t−1) in each model. We then included all independent and sociodemographic variables (age, gender, and education level). As the control for autoregressive effects accounted for stable individual differences, the sociodemographic variables had only a small impact. All analyses were performed using weighted data.[2]

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[2] Data were weighted based on the original distribution of age (t1).

Effects of Mass Media and Personal Experiences on Societal Concerns

Health Concerns

In line with H1, we found in four of the seven models that a higher perceived salience of the health aspect in COVID-19 media coverage was significantly associated with increased societal concerns. Compared with individuals who perceived that the media salience was adequate, for respondents who considered it too much, a lower agenda-setting effect was observed in almost all models. Hypothesis 2 was therefore supported. In contrast, the evaluation of the media salience as too little lifted the agenda-setting effect slightly but significantly at a higher level at two points in time. Thus, the answer to RQ1 is not straightforward. A slight effect was observed but only in some cases. The results are visualized for the first model (t_2) in Figure 3 as an exemplary case.
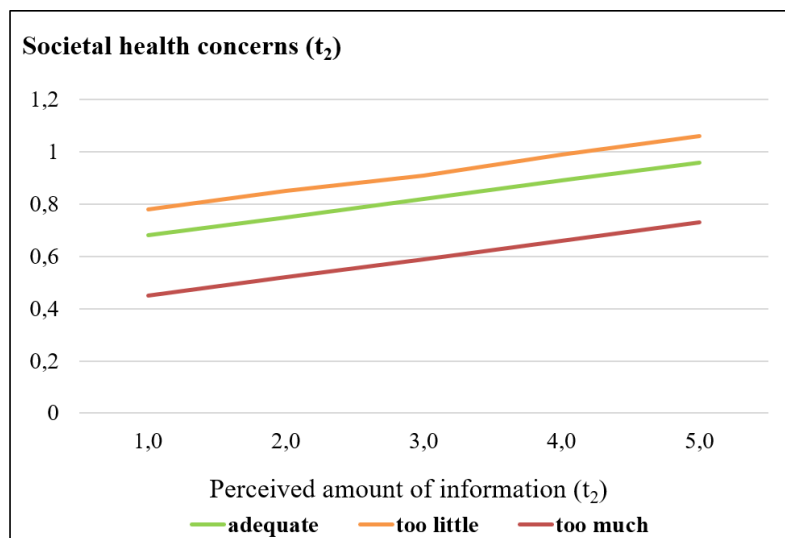

Figure 3. Example of the effects of mass media experiences on societal concerns.
Note. The effects of the other independent and sociodemographic variables remained constant.

Concerning personal experiences, we found that negative health-related personal experiences strongly increased corresponding societal concerns in all survey waves and phases of the pandemic. Therefore, H3 was supported.

Regarding developments over time (RQ2), notable agenda-setting effects were observed only at the very beginning of the crisis and in the first part of the maintenance phase, when the second infection wave of the pandemic struck the country hard. Beginning at t_7, however, this observation did not continue although the third German infection wave was at its peak. Accordingly, at the end of the maintenance phase and the resolution phase, only the diminishing effects on societal concerns of considering media salience as too much were observed. Personal experiences influenced societal health concerns to a relatively constant amount, showing the strongest effects at t_4, t_6, and t_8, when the COVID-19 infection rates increased.

Political Concerns

For politics, the analyses showed no significant relationship between societal concerns about restrictions on fundamental rights and the perceived salience of this issue in the media coverage in all survey waves. Thus, H1 was not supported. Moreover, contrary to H2, respondents who evaluated the perceived media salience of the political aspect as too much constantly showed higher concerns than recipients who thought that the issue was adequately covered. Similar but somewhat stronger effects were observed for individuals who evaluated the perceived media salience as too little. Accordingly, for the political dimension, RQ1 can be clearly answered: People who considered that the media should have covered the political aspects of COVID-19 more intensively were more concerned than other respondents.

People's personal experiences were strongly related to their political concerns at the societal level in all survey waves and phases of the pandemic. In accordance with H3, the more respondents personally experienced restrictions on fundamental rights, the higher their related societal concerns. Notably, the effects were substantially higher than in the context of health.

Regarding developments over time (RQ2), the effects of personal experiences on societal concerns were strongest at t_2, t_4, and t_5, and even higher than the autoregressive effects of societal concerns. Similar to the observation in the health context, at these time points, the political situation in Germany was particularly tense. The impact of the media evaluations on societal concerns was relatively stable in the different phases of the crisis and slightly higher at t_1, t_6, and t_8.

Economic Concerns

Regarding the economy, the perceived issue salience in the media coverage had no impact on the corresponding societal concerns. Accordingly, similar to the political dimension, no agenda-setting effects were observed in any of the survey waves and phases of the coronavirus pandemic. Therefore, H1 was not supported for the economic aspect. However, the results for people who thought that the COVID-19 media coverage regarding the economy was too much differed from those related to politics and health. This media evaluation had no effect on societal economic concerns at any point in time. Therefore, for the economy, H2 was not supported. In this case, the societal concerns of people who considered that the perceived salience of the economic aspect in the media was too much did not differ significantly from those who evaluated it as adequate. In contrast, respondents who thought that the salience of the economic aspect in the media coverage was too little constantly reported higher societal concerns regarding the economy. Thereby, the effects on societal concerns were considerably stronger than for the political aspect. Accordingly, concerning RQ1, the answer is unequivocal: The perception that an economic problem was covered too little in the media made people consider the issue more severe at the societal level.

In line with H3, pronounced personal experiences of economic consequences were associated with stronger societal concerns regarding the economic situation in all survey waves and phases of the pandemic. Compared with the other crisis aspects, the effects of personal experiences were considerably weaker, whereas the autoregressive effects of societal concerns were strongest here.

Regarding developments over time (RQ2), the results indicated that the impact of evaluating that economic aspects of COVID-19 were covered too little was particularly influential during the survey waves when the overall crisis situation worsened (e.g., t_2, t_4, and t_7). At the same time, the effects of personal experiences on societal economic concerns were slightly weaker. Results of all regression analyses are presented in Tables 1–3. Differences between the specific patterns of the effects concerning the three crisis aspects (RQ3) are addressed in more detail in the Discussion section.

Table 1. Regression Analyses of Societal Health Concerns.

	t2		t3		t4		t5		t6		t7		t8	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
(Constant)	.61	.15	.32	.15	.73	.19	.05	.17	.24	.14	.63	.14	.29	.18
Societal concerns (previous wave)	.45***	.03	.51***	.03	.40***	.03	.55***	.03	.43***	.02	.46***	.02	.45***	.03
Personal experience	.34***	.03	.33***	.03	.42***	.03	.33***	.03	.38***	.02	.36***	.02	.41***	.03
Perceived media salience (agenda-setting effect)	.07*	.03	.05	.03	.11**	.03	.13***	.03	.04*	.02	.04	.02	.05	.03
Media evaluation too little	.10*	.05	.00	.05	.09	.06	−.01	.05	.10*	.04	.05	.05	.02	.06
Media evaluation too much	−.23***	.05	−.11	.06	−.38***	.07	−.15**	.06	−.14**	.05	−.31***	.05	−.21***	.06
Gender	−.01	.04	.02	.04	.02	.05	.07	.05	.05	.04	.09*	.04	.02	.05
Age	.00	.00	.00*	.00	.00	.00	.00	.00	.00*	.00	.01***	.00	.00	.00
Education	−.06**	.02	−.02	.02	−.07**	.03	−.02	.02	−.03	.02	−.02	.02	−.04	.02
n	1144		910		760		654		1201		1064		715	
R^2 (autoregress.)	.51		.56		.49		.66		.55		.58		.61	
R^2	.65		.64		.63		.74		.65		.68		.71	

Note. t1: April 16–20, 2020; t2: May 19–25, 2020; t3: July 21–28, 2020; t4: November 4–10, 2020; t5: April 1–13, 2021; t6: September 15–23, 2021; t7: December 9–20, 2021; t8: April 1–8, 2022. Societal concerns and personal experiences = 1–5; perceived media salience = 1–5; media evaluations (dummy coded): 0 = too little/too much, 1 = not too little/too much; gender (dummy coded): 0 = not female, 1 = female; age = 18–98 years; education = 1–5. *p < .05. **p < .01. ***p < .001.

Table 2. Regression Analyses of Societal Political Concerns.

	t_2		t_3		t_4		t_5		t_6		t_7		t_8	
	B	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
(Constant)	.57	.14	.42	.15	.17	.17	.51	.17	.40	.14	.47	.14	.13	.17
Societal concerns (previous wave)	.31***	.03	.44***	.03	.38***	.03	.40***	.03	.49***	.02	.47***	.02	.52***	.03
Personal experience	.58***	.02	.42***	.03	.57***	.03	.51***	.03	.41***	.02	.45***	.02	.45***	.03
Perceived media salience (agenda-setting effect)	−.02	.02	.03	.02	.03	.02	.00	.02	.04	.02	.00	.02	.03	.02
Media evaluation too little	.23***	.06	.19**	.07	.15*	.07	.21**	.07	.26***	.05	.15**	.05	.24***	.07
Media evaluation too much	.14**	.05	.11*	.05	.15*	.06	.02	.06	.17***	.05	.15**	.05	.19**	.06
Gender	−.02	.04	−.10*	.04	.03	.05	.03	.05	−.05	.04	−.02	.04	−.04	.05
Age	.00	.00	.00*	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Education	−.07***	.02	−.01	.02	−.03	.02	−.04	.02	−.06**	.02	−.04*	.02	−.04	.02
n	1115		891		740		634		1158		1041		690	
R^2 (autoregress.)	.45		.58		.55		.59		.63		.65		.67	
R^2	.67		.68		.73		.75		.73		.75		.78	

Note. t_1: April 16–20, 2020; t_2: May 19–25, 2020; t_3: July 21–28, 2020; t_4: November 4–10, 2020; t_5: April 1–13, 2021; t_6: September 15–23, 2021; t_7: December 9–20, 2021; t_8: April 1–8, 2022. Societal concerns and personal experiences = 1–5; perceived media salience = 1–5; media evaluations (dummy coded): 0 = too little/too much, 1 = not too little/too much; gender (dummy coded): 0 = not female, 1 = female; age = 18–98 years; education = 1–5. *p* < .05. **p* < .01. ***p* < .001.

Table 3. Regression Analyses of Societal Economic Concerns.

	t₂		t₃		t₄		t₅		t₆		t₇		t₈	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
(Constant)	1.00	.19	.64	.21	1.49	.24	1.44	.24	0.59	.18	1.47	.19	1.02	.27
Societal concerns (previous wave)	.54***	.03	.56***	.03	.55***	.03	.56***	.03	.50***	.02	.65***	.03	.51***	.03
Personal experience	.11***	.02	.16***	.03	.10**	.03	.10**	.03	.17***	.02	.09***	.02	.11**	.03
Perceived media salience (agenda-setting effect)	−.01	.03	.02	.03	−.05	.04	−.07	.03	−.02	.03	.01	.03	−.07	.04
Media evaluation too little	.40***	.07	.24**	.07	.37***	.08	.39***	.08	.17**	.06	.24***	.03	.47***	.08
Media evaluation too much	.09	.06	.01	.07	.01	.09	−.02	.09	.09	.07	−.08	.03	.04	.09
Gender	.10*	.05	.13*	.06	.20**	.06	.33***	.07	.07	.05	.13**	.05	.20**	.07
Age	.00	.00	.00	.00	−.01*	.00	.00	.00	.00	.00	−.01***	.00	.00	.00
Education	−.08**	.03	−.05	.03	−.06	.03	−.12***	.03	−.05*	.03	−.10***	.03	−.08*	.03
n	1039		838		695		612		1119		983		659	
R^2 (autoregress.)	.34		.39		.37		.43		.37		.47		.35	
R^2	.39		.42		.43		.50		.41		.51		.41	

Note. t₁: April 16–20, 2020; t₂: May 19–25, 2020; t₃: July 21–28, 2020; t₄: November 4–10, 2020; t₅: April 1–13, 2021; t₆: September 15–23, 2021; t₇: December 9–20, 2021; t₈: April 1–8, 2022. Societal concerns and personal experiences = 1–5; perceived media salience = 1–5; media evaluations (dummy coded): 0 = too little/too much, 1 = not too little/too much; gender (dummy coded): 0 = not female, 1 = female; age = 18–98 years; education = 1–5. *p < .05. **p < .01. ***p < .001.

Discussion

To examine agenda-setting effects during times of social disruption, in this study, we considered the impact of perceived mass media coverage and its evaluation as well as the influence of personal experiences on societal concerns during the coronavirus pandemic. Furthermore, we investigated the relationships over time, namely, during the up- and downturns of the crisis, as well as its different phases (initial, maintenance, and resolution). Instead of limiting the analysis to health threats, we also considered political (restrictions on fundamental rights) and economic (financial consequences) aspects of the pandemic.

Overall, the study results show the importance of differentiating among these three crisis aspects because we found issue-specific effects of media and personal experiences, which varied over time (RQ3). Regarding the media's role during the coronavirus pandemic, its agenda-setting power was limited to the health context. While perceiving a higher salience of health aspects in the media coverage increased related societal concerns until the end of the maintenance phase, the perceived media salience of economic and political aspects had no impact on respective concerns in all panel waves. One plausible reason for these results could be that the level of the perceived salience of the political and economic aspects of media coverage decreased almost steadily (Figure 2). In contrast, the perceived extent of health-related coverage showed several up- and downturns, which opened up more room for media effects. Another possible explanation could be that people do not follow the intensity of coverage of sub-aspects of crisis so closely that agenda-setting effects can occur. The dominant health aspect might have outweighed all other issue aspects of the coronavirus pandemic.

Much stronger effects than the perceived media salience showed individuals' evaluation of its adequacy, thus suggesting different patterns among the three crisis aspects as well. The perceived media salience of an issue as too much had the hypothesized negative effects only in the health context. This evaluation of the coverage consistently weakened the agenda-setting effects on societal concerns. In line with previous research, the perception that the mass media was exaggerating COVID-19 health risks may have triggered defensive reactions (Neureiter et al., 2021), which could have made the health crisis appear less threatening to society.

Concerning the two other crisis aspects, this consequence of too much media coverage was not observed. For the economy, no effects occurred, and for the political aspect, we found slight but—contrary to the theoretical expectations—increasing effects on societal concerns. Instead, evaluating the perceived salience of these issues in the media coverage as too little clearly increased societal concerns in all phases of the pandemic, particularly in the economic context. For health, similar but much smaller and only occasional relationships were observed. Accordingly, thinking that the media is neglecting a specific issue can amplify corresponding societal concerns during a crisis and not decrease them. This shows that not only too much but also too little media coverage of a specific crisis issue can have serious consequences. If people have the impression that important aspects of a crisis are being downplayed or suppressed by the media, they may become suspicious, assume that the situation is worse than reported, and therefore, show higher levels of societal concerns. The fact that the perceived amount of coverage decreased steadily (Figure 2) underpins this interpretation.

Concerning the role of personal experiences in societal concerns, the study results clearly demonstrate that they were highly significant in all phases of the crisis, regardless of which crisis aspect was scrutinized. However, regarding the strength of the influence, considerable differences among health, politics, and the economy were observed. Particularly for people's political concerns at the societal level, their personal experiences of restrictions on fundamental rights were clearly more significant than their media experiences. In line with research on the obtrusiveness hypothesis (Shafi, 2017), the different crisis aspects apparently vary in their personal tangibility, which has consequences for the media's role during such times. In the context of more obtrusive crisis aspects, such as restrictions on fundamental rights, personal experiences are more dominant than the role of the perceived media agenda and its evaluation. For less obtrusive issues, such as the health situation to some extent, but particularly economic consequences, the effects of personal experiences were substantially lower. Although we did not find agenda-setting effects for the economy, apparently, people observed and evaluated the amount of coverage and related their judgment of the societal situation to this evaluation. However, it may be not only the obtrusiveness that makes the difference but also the generalizability of personal experiences to societal concerns. In particular, the immediately experienced economic consequences of the pandemic, as well as the vulnerability to serious consequences of contracting the virus, varied considerably from person to person. In contrast, the restrictions on fundamental rights were perceivable for almost everyone and thus were not limited to specific groups. Therefore, this might also explain why in the context of economy and health, people inferred less from personal experiences to societal concerns than in the political field.

Regarding developments over the course of the coronavirus pandemic, the results show differences among the three crisis aspects as well. For health, the observed agenda-setting effects on societal concerns were stronger during the upsurges in COVID-19 infections in Germany. Regarding crisis research on the obtrusiveness hypothesis (Vliegenthart & Damstra, 2019), the opposite would have been expected, namely, that media effects are lower during times of high infection rates and accordingly higher personal experiences. Furthermore, these relationships occurred only in the initial phase—when uncertainty was particularly high—and in the first part of the maintenance phase. At the end of the maintenance phase in December 2022 (t_7), the perceived salience in the media and the corresponding societal concerns became dissociated although the positive rates of COVID-19 infections again increased. Therefore, it was not the perceived amount of coverage but rather the evaluation of too much prominence of the health aspect in the media that shaped societal concerns at the end of the maintenance phase and the resolution phase only. For health, this suggests that agenda-setting effects are limited to times of high uncertainty. Furthermore, the study results suggest that with the duration of the crisis and prolonged media coverage, people became increasingly fatigued by COVID-19 health news. This result is in line with other findings in the context of the coronavirus pandemic (Dan & Brosius, 2021). Concerning the economy, the patterns were not as different as they seem at first glance. Individuals who considered that the respective salience in the media was too little were even more strongly influenced by this evaluation when the infection rates increased, protection measures were stricter, and thus societal concerns about the economic situation were higher (e.g., t_2, t_4, and t_7). Similar to the health aspect, this suggests stronger media effects on societal concerns during times of economic uncertainty. In contrast to health, however, these developments were stable and did not diminish over time possibly because perceived media coverage almost constantly decreased, while information needs

did not. For the political crisis, a distinct development occurred. The effects of individuals' media evaluations were stable, regardless of the severity of protection measures and the different phases of the coronavirus pandemic.

Overall, the study results show complex and distinct dynamics regarding the role of the media and personal experiences during times of long-lasting social disruptions, which do not follow as explicitly the up- and downturns and the different phases of the crisis. Practically, the study results further point out the importance of balanced reporting, considering the multiple aspects of disruptive events to prevent unintended high or even low societal concerns—also in later phases of a crisis.

Limitations and Future Research

Although this study addressed several challenges of previous research, it has certain limitations. First, we considered only mass media experiences. Therefore, future research should also include the perceived content of other sources, especially social media, to examine how information shared on these platforms affects societal concerns during crises.

Second, we focused solely on the effects of perceived media salience and the evaluation of its adequacy. We did not consider the perceived tone and valence of the coverage or how the different aspects were framed. As these factors could also influence societal concerns, future research should address these media perceptions. This may contribute to a better understanding of media effects. Moreover, additional attitudes toward media coverage, such as media trust in particular, should be considered because they may be another important driver of agenda-setting effects on societal concerns during uncertain times of social disruption.

Finally, concerning the measurements, it must be reflected whether people observe the media agenda in such a differentiated way as we assumed and thus, if they are able to remember and indicate their media experiences precisely. Therefore, the null findings regarding potential agenda-setting effects in the context of politics and the economy might also be a result of overextending the respondents. It might be necessary to give respondents the opportunity to indicate that they cannot estimate the scope of coverage.

Conclusions

This panel study provides important insights into the media's agenda-setting power and how it can be investigated during times of social disruption. We show that communication researchers should consider not only indirect media experiences but also personal experiences to decipher the conditions under which agenda-setting effects on people's societal concerns in crisis contexts occur—or not. Additionally, the study results suggest that individual evaluations of the adequacy of media salience rather than the perceived media agenda per se shape people's societal concerns. Furthermore, we show that the effects depend not only on the up- and downturns but also on the specific phases of a crisis. Thereby, it becomes uniquely clear that researchers should consider multiple aspects of disruptive times. We found not only distinct temporal dynamics in the context of health, politics, and the economy but also strong differences regarding the

media's overall agenda-setting power possibly due to the competing influence of personal experience. Furthermore, we found crisis-specific effects for individuals' media evaluations, which suggest that previous findings in the health context cannot be transferred easily to other aspects of a crisis, such as politics or the economy. Therefore, when examining agenda-setting effects during times of severe social disruption, future longitudinal studies should be sensitive to the extraordinary characteristics of such periods and the implications for research practice.

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Appendices

Appendix A

Table A1. Sample Size and Distribution of Respondent's Demographics.

	t_1	t_2	t_3	t_4	t_5	t_6	t_7	t_8
Original sample *n*	1458	1233	1014	822	709	575	513	394
New sample *n*					1320	769	649	462
Age[1] *M* (*SD*)	46.9 (15.9)							
Gender								
female	50.4%	49.9%	50.8%	50.9%	50.9%	50.1%	49.4%	48.6%
male	49.5%	50.1%	49.2%	49.1%	49.0%	49.8%	50.5%	51.4%
Education[2]								
low	32.2%	32.7%	31.6%	32.3%	31.1%	30.6%	30.2%	30.1%
middle	32.2%	31.8%	32.2%	31.3%	32.6%	32.5%	32.3%	31.7%
high	35.6%	35.4%	36.2%	36.4%	35.9%	36.9%	37.5%	38.1%

Note. t_1: April 16–20, 2020; t_2: May 19–25, 2020; t_3: July 21–28, 2020; t_4: November 4–10, 2020; t_5: April 1–13, 2021; t_6: September 15–23, 2021; t_7: December 9–20, 2021; t_8: April 1–8, 2022.
[1] Data were weighted based on the distribution of age (t_1).
[2] low: lowest German school degree or no degree, middle: secondary-school/medium-level secondary school, high: at least highest German school degree.

Appendix B

Table B1. Measurements and Descriptive Statistics of Societal Concerns and Personal Experiences.

		t_1	t_2	t_3	t_4	t_5	t_6	t_7	t_8
Societal concerns									
Health (mean index)	r	.63	.68	.69	.77	.73	.69	.71	.68
	M (SD)	3.5 (1.0)	3.3 (1.0)	3.2 (1.0)	3.7 (1.1)	3.6 (1.1)	3.2 (1.0)	3.6 (1.1)	3.3 (1.1)
Political (mean index)	r	.48	.60	.58	.65	.64	.66	.65	.68
	M (SD)	2.8 (1.0)	2.8 (1.1)	2.5 (1.1)	2.7 (1.2)	3.1 (1.2)	2.9 (1.2)	2.9 (1.2)	2.7 (1.3)
Economic	M (SD)	2.6 (1.0)	2.6 (1.0)	2.6 (1.1)	2.8 (1.1)	2.9 (1.2)	2.5 (1.0)	2.7 (1.1)	2.6 (1.1)
Personal experiences									
Health (mean index)	a	.85	.86	.88	.88	.89	.90	.89	.88
	M (SD)	3.3 (1.0)	3.2 (1.0)	3.0 (1.1)	3.3 (1.1)	3.4 (1.1)	3.1 (1.1)	3.3 (1.1)	3.2 (1.1)
Political (mean index)	r	.50	.57	.54	.62	.62	.64	.57	.60
	M (SD)	2.9 (1.1)	2.8 (1.1)	2.4 (1.0)	2.6 (1.2)	3.2 (1.2)	2.7 (1.2)	2.8 (1.2)	2.4 (1.2)
Economic (mean index)	r	.23	.30	.27	.26	.24	.19	.18	.15
	M (SD)	2.9 (1.0)	2.8 (1.0)	2.6 (1.0)	2.7 (1.0)	2.9 (1.1)	2.7 (1.0)	2.8 (1.0)	2.8 (1.0)

Note. t_1: April 16–20, 2020; t_2: May 19–25, 2020; t_3: July 21–28, 2020; t_4: November 4–10, 2020; t_5: April 1–13, 2021; t_6: September 15–23, 2021; t_7: December 9–20, 2021; t_8: April 1–8, 2022.

Table B2. Descriptive Statistics of Mass Media Experience Measurements.

Perceived Amount of Information

		t_1	t_2	t_3	t_4	t_5	t_6	t_7	t_8
Health aspect	*M (SD)*	3.9 (0.8)	3.7 (0.8)	3.4 (0.8)	3.8 (0.8)	3.8 (0.8)	3.4 (0.9)	3.8 (0.9)	3.5 (0.9)
adequate		50%	50%	53%	55%	46%	50%	48%	47%
too much		28%	25%	16%	21%	25%	24%	29%	29%
too little		22%	25%	31%	25%	29%	27%	24%	25%
Political aspect	*M (SD)*	3.7 (1.0)	3.7 (1.0)	3.3 (1.0)	3.6 (1.0)	3.4 (1.0)	3.2 (1.0)	3.4 (1.0)	3.1 (1.0)
adequate		66%	63%	70%	63%	55%	59%	60%	59%
too much		19%	23%	18%	21%	27%	23%	23%	24%
too little		15%	13%	12%	16%	18%	18%	18%	17%
Economic aspect	*M (SD)*	3.9 (0.9)	3.8 (0.9)	3.6 (0.9)	3.5 (0.9)	3.2. (1.0)	3.1 (1.0)	3.2 (1.0)	3.1 (1.0)
adequate		57%	56%	60%	57%	49%	57%	56%	55%
too much		22%	24%	21%	16%	16%	15%	15%	19%
too little		21%	20%	20%	28%	35%	28%	29%	26%

Note. t_1: April 16–20, 2020; t_2: May 19–25, 2020; t_3: July 21–28, 2020; t_4: November 4–10, 2020; t_5: April 1–13, 2021; t_6: September 15–23, 2021; t_7: December 9–20, 2021; t_8: April 1–8, 2022.