FULL PAPER

In a reciprocal relationship? Examining the development and relationship between media trust and satisfaction with the government's Coronavirus policy in Germany over time

In einer wechselseitigen Beziehung? Eine Untersuchung der Entwicklung und der Beziehung zwischen Medienvertrauen und Zufriedenheit mit der Corona-Politik der Regierung in Deutschland im Zeitverlauf

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Abstract: Given the political consequences of the Coronavirus crisis, the present study examined the reciprocal relationship between satisfaction with the government's Coronavirus policy and media trust in Germany during the first year of the Coronavirus pandemic. Using data from a panel survey conducted between April 2020 and April 2021, a random intercept cross-lagged panel model was applied to explore the reciprocal relationship over time. The findings revealed strong correlations between the random intercepts, indicating that people who were generally more satisfied with the government's Coronavirus policy also showed higher levels of media trust than the average and vice versa. On the within-person level, however, the results clearly show just one cross-lagged effect at a very specific point in time during the pandemic: within-person changes in policy satisfaction in November 2020 caused within-person changes in media trust in April 2021. No reciprocal influence over time was found.

Keywords: Media trust, satisfaction with the government's Coronavirus policy, reciprocal relationship, panel data, random intercept cross-lagged panel model.

Zusammenfassung: Angesichts der politischen Folgen der Corona-Krise untersuchte die vorliegende Studie die wechselseitige Beziehung zwischen der Zufriedenheit mit der Corona-Politik der Bundesregierung und Medienvertrauen während des ersten Jahres der Corona-Pandemie in Deutschland. Auf Basis von Daten einer Panelbefragung, die zwischen April 2020 und April 2021 durchgeführt wurde, wurde ein Random Intercept Cross-Lagged Panel Modell berechnet, um die wechselseitige Beziehung im Zeitverlauf zu untersuchen. Die Befunde zeigen einen starken Zusammenhang zwischen den Random Intercepts, d.h. Personen, die generell zufriedener mit der Corona-Politik der Regierung waren, haben auch generell ein höheres Medienvertrauen als der Durchschnitt und andersherum. Auf der Ebene der Einzelpersonen zeigte sich hingegen nur ein zeitverzögerter Effekt zu einem bestimmten Zeitpunkt während der Coronapandemie, nämlich, dass Veränderungen in der Zufriedenheit mit der Corona-Politik innerhalb einer Person im November 2020 zu Verän-

derungen im Medienvertrauen im April 2021 führen. Es wurde kein wechselseitiger Einfluss über die Zeit gefunden.

Schlagwörter: Medienvertrauen, Zufriedenheit mit der Corona-Politik der Regierung, reziproke Beziehung, Paneldaten, Random Intercept Cross-Lagged Panel Model.

1. Introduction

The Coronavirus pandemic has been one of the most disruptive events in recent history and has rapidly developed into multiple crises across the globe that have placed politics and society in a state of emergency. To contain the pandemic, governments have taken extraordinary policy measures (e.g., nationwide lockdowns, physical distancing, stay-at-home restrictions) (Engler et al., 2021; Popic & Moise, 2022) that have greatly limited personal liberties and that, in some cases, have been adopted through unusual means.[1] Political measures and decision-making processes have been taken that, before the Coronavirus pandemic, would have been almost inconceivable outside of a wartime situation and have had far-reaching consequences for the political system itself. For example, several studies examined the effect of governments' handling of the Coronavirus crisis on trust in politics (e.g., Baekgaard et al., 2020; Davies et al., 2021; Esaiasson et al., 2021; Kritzinger et al., 2021; Schraff, 2021). In this context, the present study focused on (dis-)satisfaction with the German government's Coronavirus policy, here examining the specific political support concerning the government's performance and outcomes in relation to a precise political issue, in the present case the Corona issue. Nevertheless, policy dissatisfaction (Farah et al., 1979) has the potential to affect attitudes toward the political system (Easton, 1975). Especially in the context of the Coronavirus pandemic, such spill-over effects seem plausible because many of the Coronavirus-specific political decisions had strong implications for the fundamental design of political processes in a democracy in times of crisis.

The Coronavirus pandemic, as well as the related political events and developments, were covered intensively by the mass media. Content analysis findings prove that, since the outbreak of the pandemic, the news media has reported extensively and nearly monothematically about Coronavirus. At least for a while, almost all other political issues were pushed off the media's agenda. As a result, Coronavirus coverage was clearly politicized, with a strong focus on political issues and actors (Hart et al., 2020; Neves & Massarani, 2022; Tejedor et al., 2020); even the health crisis was primarily viewed from a political perspective (Crabu et al., 2021). Likewise, there was a strong focus on the political aspects, especially regarding German politics, of German Coronavirus coverage (Maurer, Wagner, & Weiß, 2021). Moreover, initial findings revealed that the leading German media outlets covered the competences of political actors in a predominantly negative

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1 In Germany, for example, many decisions were made and implemented in so-called federal-state conferences: bodies that are not provided for in the constitution. The meetings were attended by members of the federal government and the governors of the federal states. This "bypassing" of parliaments was considered unconstitutional by some actors, especially by the parliaments themselves.

way and that the image of politicians worsened dramatically over time (Maurer, Reinemann, & Kurschinski, 2021). Likewise, over the course of 2020, the German Coronavirus policy came under intense criticism on political talk shows on public television stations (Degen, 2021).

Although the population had direct experience with the pandemic, the news media was a very significant source of information for German citizens about all the events related to the pandemic, including political ones (Faas et al., 2022; Viehmann et al., 2020; Wolling et al., 2021). Especially during lockdown times when people were encouraged to avoid personal contact, people's dependence on the media (Ball-Rokeach & DeFleur, 1976) can be considered as having been particularly strong. Accordingly, it seems reasonable that the information provided by the media played a significant role in shaping people's satisfaction with the government's handling of Coronavirus pandemic. However, because in most cases – including the Coronavirus pandemic – people cannot verify the veracity and appropriateness of the information disseminated by the media, "they have to trust journalistic media, their news selection, and their production to provide them with the relevant information in an adequate manner" (Fawzi et al., 2021, p. 1). As a result, the trust that people placed in the media and their reporting became particularly important in the context of the Coronavirus pandemic. For example, several studies have shown that media trust is related to political trust (Adam et al., 2023; Nielsen et al., 2020) and compliance with Coronavirus hygiene rules and preventative policies (Adam et al., 2023; Neureiter et al., 2021; Schumann & Arlt, 2023; Zhao et al., 2020).

The media can be a powerful source of political legitimacy when people have confidence in the media and when media criticism of government policies is not destructive. However, when distrust of the media increases and some people even begin to accuse the media of being state propaganda tools and a "lying press," this support dwindles. Nevertheless, this effect can also work in the opposite way. If people are dissatisfied with the government's policies and find that the media portrays these policies too positively, it can raise doubts about the media's independence and have a negative effect on trust in the media. Taken together, it seems plausible that media trust and satisfaction with the government's Coronavirus policy are closely linked and can reciprocally influence each other over time. However, the question of causality has remained largely unanswered in previous research because most studies on the relationship between media trust and attitudes toward political systems have been based on cross-sectional data. Furthermore, no studies have examined the extent to which these constructs are linked over time because of stable differences between individuals or temporal variations within individuals. The current study addresses this gap. Using data from a panel survey carried out in Germany between April 2020 and April 2021, the present study examined the development and reciprocal relationship between people's satisfaction with the government's Coronavirus policy and media trust over time.

2. Literature review

2.1 Coronavirus policy satisfaction: Conceptualization and empirical findings

The starting point for the theoretical foundation of people's satisfaction with the government's Coronavirus policy is the concept of political dissatisfaction (Inglehart, 1977; Farah et al., 1979). In general, political dissatisfaction has been defined as "the attitudinal expression of unhappiness or lack of satisfaction based on the belief that the government […] and their outcomes are falling short of the citizen's preferences or expectations […]" (Torcal, 2011, p. 688). With reference to Easton's (1975) concept of political support, political dissatisfaction can be seen as an expression of a lack of specific political support meaning dissatisfaction with the governments' performance and the outcomes of political processes regarding specific political issues or policy areas (policy dimension). In this context, some scholars have specifically spoken of policy dissatisfaction (Farah et al., 1979), policy malaise (Arlt et al., 2020), or, in a positive sense, policy area satisfaction (de Blok et al., 2022). Transferred to the present study, (dis)satisfaction with the government's Coronavirus policy refers to a positive or negative evaluation of the government's handling of the Coronavirus issue. The consideration of policy-specific satisfaction is particularly important because it can influence diffuse political support, which is expressed through satisfaction with the political system or trust in politics (de Blok et al., 2022; Easton, 1975; Norris, 2011).

Looking at the literature, some conclusions about Coronavirus policy satisfaction can also be drawn from studies examining how trust in politics and governmental support developed over the course of the pandemic in relation to the political handling of the crisis. First, various studies have shown that, especially in the initial phase of the pandemic, an increase in political trust and governmental support can be observed (e.g., Baekgaard et al., 2020; Esaiasson et al., 2021; Kritzinger et al., 2021), which is a reaction to the government's handling of the crisis, such as the implementation of lockdown measures (Bol et al., 2021; Oude Groeniger et al., 2021; Schraff, 2021).

Overall, however, these positive effects were rather short-lived because, as the pandemic continued general trust in politics, belief in governments' ability to manage the crisis, and satisfaction with the governments' performance greatly declined (Davies et al., 2021; Johansson et al., 2021; Nida-Rümelin, 2021; Unzicker, 2022; Weinberg, 2022).

Hence, to gain more insights into how satisfaction with the Coronavirus policy developed during the Coronavirus pandemic in Germany, the first research question is the following:

> *(RQ1) How did satisfaction with the government's Coronavirus policy evolve over time during the Coronavirus pandemic in Germany?*

2.2 Media trust: Conceptualization and development in the course of the Coronavirus pandemic

Despite the extensive and still growing body of research, no uniform definition of media trust has been established (Fawzi et al., 2021; Strömbäck et al., 2020). One challenge in this area is that several different concepts are used, such as trust in

journalism (Kohring & Matthes, 2007), media skepticism (Tsafti, 2003), or media distrust (Ladd, 2010), which cannot be clearly distinguished from each other. Nevertheless, there is broad agreement in communication research that, at the conceptual level, media trust refers to the relationship between trustor (citizen) and trustees (news media) (Kohring & Matthes, 2007; Strömbäck et al., 2020; Tsafti & Capella, 2003), in which citizens are willing "to be vulnerable to news content based on the expectation that the media will perform in a satisfactory manner" (Hanitzsch et al., 2018, p.5; see also Fawzi et al., 2021, p. 3) and that journalists will "put aside their political views and create unbiased news stories" in agreement with journalistic principles (Ardèvol-Abreu & Gil de Zúñiga, 2017, p. 704).

In research practices, media trust is measured at very different levels (for an overview, see Fawzi et al., 2021; Strömbäck et al., 2020). This also applies to studies that have explored media trust in relation to the Coronavirus pandemic.

When looking at the different measurements of media trust, it becomes apparent that there is no uniform concept applied. The media objects for which trust is being examined vary greatly and can be located at different levels of analysis (for an overview, see Fawzi et al., 2021; Strömbäck et al., 2020). Although on a more abstract level, "trust in the press" (Hanitzsch et al., 2018; Tsfati & Ariely, 2014) or "trust in the news" (Newman et al., 2020) has been considered, at a subordinate level, media trust refers to different media types (e.g., public and commercial broadcasting, Fawzi, 2019) or specific news outlets and media brands (e.g., BBC News or Fox News; Newman et al., 2020). At the lowest level, media trust refers to trust in media content or media coverage about specific topics (e.g., politics or economics) or about concrete issues, such as refugees or climate change (e.g., Blöbaum, 2018; Strömbäck et al., 2020). In research practice, trust in media content is primarily assessed using quality perceptions, such as fairness, correctness, trustworthiness, or impartiality (e.g., Arlt, 2018; Fawzi, 2019), as indicator variables.

However, according to Strömbäck et al., the most important point of reference for exploring people's trust in the media is that the focus is "trust in the information coming from news media at different levels of analysis […]" (2021, p. 149) because this enables the examination of the extent to which the news media are perceived as fulfilling their functions in democratic societies. Therefore, building on the previous explanations, the present paper examines media trust in terms of trust in the information coming from the media at the content level and, more specifically, trust in media coverage of the Coronavirus pandemic.

Looking at the current state of research on developments in trust in media coverage of the Coronavirus in Germany, a few studies have documented changes over time. Based on a three-wave panel survey carried out in the initial phase of the Coronavirus pandemic, Viehman et al. (2021) observed a slight decline in Germans' trust in crisis reporting from March 2020 to July 2020. The findings of a two-wave panel survey that went beyond the first Coronavirus year also show that the proportion of those who perceived reports on the pandemic as credible and had the impression that the reports mostly reflected the facts correctly declined slightly from April 2020 to February 2021 (Maurer, Reinemann, & Kuschinski, 2021, p. 18). Similar developments can also be observed at the societal level. Whereas, in 2020,

around 63% of Germans had trust in the reporting on the Coronavirus pandemic, in 2022 this figure was only 43% (Schultz et al., 2023, p. 4).

Based on these findings on changes in trust in media coverage over the course of the Coronavirus pandemic, the second research question of this paper is derived:

> *(RQ2) How did trust in media coverage of the Coronavirus issue evolve over time during the Coronavirus pandemic in Germany?*

2.3 Interrelations between Coronavirus policy satisfaction and media trust: Theoretical considerations and empirical findings

The starting point for considering the relationship between media trust and Coronavirus policy satisfaction is the research on the relationship between media trust and political trust or distrust and disenchantment toward politics. In principle, the relationship can be viewed from two perspectives, which are also referred to as a kind of trust paradox (Fawzi & Steindl, 2019; Kohring, 2008).

From the one perspective, referring to Bentele's (1994) theory of public trust, the media play a significant role in building trust in primarily publicly perceivable persons, organizations, and systems. Through the selection, classification, and evaluation of information in their reporting, the media enables the public to build trust in other objects such as politics. However, the media are not only the mediators of trust, but also the objects of trust themselves (Bentele, 1994). Hence, the building of trust is, to a certain extent, linked to trust in the media and their messages itself. As a result, trust in journalism itself becomes a prerequisite for trust in politics (Kohring, 2004, 2008; Matthes et al., 2010). In other words, "without trust in the conduit of political information, trust in the fairness of collective decision-making is likely to be undermined" (Tsfati & Cohen, 2005, p. 32). Nevertheless, scholars have also postulated an inverse relationship (Fawzi & Steindl, 2019). With reference to the "spiral of cynicism" (Cappella & Jamieson, 1997), it is assumed that the predominantly negative reporting about politics leads to an increase in political cynicism, which, in turn, leads to cynicism toward the media.

From another perspective, a negative relation also seems reasonable. Following from the fact that media trust refers to people's "expectation that the media will perform in a satisfactory manner" (Hanitzsch et al., 2018, p. 5), the media is also expected to fulfill their critical function appropriately and, if necessary, question the appropriateness and legitimacy of political decisions. As a result, trust in the media is implicitly linked to the fact that the media can cast doubt on trust in politics through negative reporting, which, in the case of trust in this negative reporting, should lead to a loss of political trust (Fawzi & Steindl, 2019; Jackob, 2012; Kohring, 2008). Otherwise, "one might suspect that a close relationship between media trust and political trust is not in fact desirable because it might raise suspicions about the role of the media as a watchdog" (Ariely, 2015, p. 364).

Considering the state of the literature, scholars have consistently found evidence for a positive relation based on both primary analyses and secondary analyses: people expressing higher levels of media trust also show higher levels of trust in

politics and vice versa (Ariely, 2015; Bennett et al., 1999; Gronke & Cook, 2007; Jones, 2004; Lee, 2010; Matthes et al., 2010; Tsfati & Cohen, 2005). Similarly, those trusting the media exhibit lower levels of political cynicism (Prochazka, 2020; van Eimeren et al., 2017), political dissatisfaction (Arlt, 2018; Schultz et al., 2017; Ziegele et al., 2018), and policy malaise (Arlt et al., 2020).

However, most of the studies cited above were based on cross-sectional data, so the relations were only proven for certain points in time, and their direction cannot be clearly determined. However, how these constructs are interrelated over time has been studied much less frequently. One example is Hanitzsch et al.'s (2018) study. Using longitudinal data from the World Value Survey, the scholars concluded "that changes in political trust were strongly related to changes in trust in the press over time" (Hanitzsch et al., 2018, p. 14). Furthermore, the findings reveal that, although in some countries a downward process of decreasing trust in one of the two systems can be observed, an upward spiral of increasing trust was apparent in other countries. In addition, there has been initial evidence that changes in trust in political information from traditional media were related to changes in political trust in Switzerland in the initial phase of the Coronavirus pandemic (Adam et al., 2023).

In the context of the current study, the empirical evidence suggests a positive correlation, that is, higher trust in media coverage should be related to higher satisfaction with the government's handling of the Coronavirus issue and vice versa. Moreover, it can be assumed that changes in media trust are associated with changes in satisfaction with the Coronavirus policy. However, it is not clear to what extent they reciprocally influence each other over time. Thus, to give more insights into this open question, the third research question is as follows:

> *(RQ3) To what extent can a reciprocal relationship between satisfaction with the government's Coronavirus policy and media trust be observed over time during the Coronavirus pandemic in Germany?*

3. Methods

3.1 Data

To answer the research questions, the present study used data from a nationwide panel survey implemented by a commercial online access panel (ISO-certified, 20252:2019). The sampling was based on a quota selection stratified by gender, age, and education of the German population aged at least 18 years. The current paper is based on data from four waves, which were conducted from April 2020 to April 2021. The first survey wave was conducted at the beginning of the pandemic between April 1 and April 9, 2020. The initial sample included a total of 1,458 persons (50.4% female) between 18 and 82 years old (average age = 46.9 years; *SD* = 15.9). Concerning formal education, 32 percent of the participants had the lowest German school degree or no degree, 32 percent had medium education levels, and 36 percent had the highest German education degree. In the subsequent panel waves, *n* = 1,014 (July 21–28, 2020), *n* = 822 (November 4–10, 2020), and *n* = 709 (April 1–13, 2021) participated from the original sample.

3.2 Context information

To interpret the findings, it is important to consider that the real-world situation varied significantly between the panel waves (see also Figure S1 and Table S1 in the supplementary material). The first survey wave was conducted during the first German lockdown, which was associated with numerous restrictions on public life. Although the infection figures then were very low from today's perspective, the death toll was quite high. Accordingly, the time was marked by great uncertainty and insecurity among the population and in politics. The July survey wave took place at a time that could be described as a kind of "corona summer slump." Most restrictions had been lifted, and normality returned to many areas of public life; the incidence of infection was comparatively low. After a relaxed summer, the situation was much more tense again in autumn. The infection figures rose significantly, and Germany experienced the second Coronavirus wave. Nevertheless, despite massive criticism from the scientific community, the government only reacted very hesitantly with a so-called "lockdown light," which started on November 2. The field phase of the November survey wave began immediately after this. Over the entire winter, the infection figures did not decrease by much, and although a new Coronavirus infection wave was already approaching in Germany, the first relaxations took place from March onwards, despite scientific warnings. The survey wave in April 2021 took place in the midst of the third Coronavirus wave, shortly after the German chancellor had withdrawn the previously decided "Osterruhe"; a kind of short lockdown over Easter.

3.3 Measures

The descriptive statistics, scales, and reliability values were based on the 709 panel participants who participated in all survey waves.

Satisfaction with the government's Coronavirus policy. Based on previous research that explored public (dis-)satisfaction with a specific policy field (Arlt et al., 2020), people's satisfaction with the government's Coronavirus policy was measured using a total of three items on a 4-point scale (1 = totally disagree to 4 = totally agree). The items described people's satisfaction with the government's handling of the Coronavirus issue in terms of general performance ("One can be satisfied with the decisions of the federal government concerning Coronavirus"), efficiency ("The federal government is overstrained in handling Coronavirus"; scale reversed), and responsiveness ("The government's Coronavirus policy takes the fears and concerns of the German population seriously"). For all measurement points, the reliability analysis revealed high scale reliability (α between .81 and .86). Hence, the mean indices were calculated for each wave, where high mean values indicate greater satisfaction with the government's Coronavirus policy. Table 1 provides a detailed overview of the descriptive statistics, scales, and reliability values.

Media trust. In the present study, media trust was assessed at the content level or, more precisely, the trust in media coverage regarding the Coronavirus (see similar measurement in relation to refugee issue: Arlt et al., 2020). The participants were asked to assess the coverage regarding the Coronavirus in the news media on a 4-point scale (1 = do not agree at all to 4 = totally agree) using the following two items: (a) "News coverage about Coronavirus is trustworthy" and (b) "News coverage

about Coronavirus is correct." Across all survey waves, the items were strongly correlated with each other (r between .73 and .79). For further analysis, the mean indices were created for each wave, where high mean values indicate greater trust in the media coverage of the Coronavirus. See Table 1 for a detailed overview of the descriptive statistics, scales, and correlations between the two items.

Table 1. Measurements and descriptive statistics of satisfaction with the government's Coronavirus policy and media trust

Time of survey wave		April 16–20, 2020	July 21–28, 2020	November 4–10, 2020	April 1–13, 2021
One can be satisfied with the decisions of the federal government concerning Coronavirus.	*M (SD)*	3.0 (0.8)	3.0 (0.8)	2.8 (0.9)	2.2 (0.9)
The federal government is overstrained in handling Coronavirus. (scale reversed)	*M (SD)*	2.7 (1.0)	2.8 (0.9)	2.5 (1.0)	1.9 (0.9)
The government's Coronavirus policy takes the fears and concerns of the German population seriously.	*M (SD)*	2.9 (0.9)	2.7 (0.9)	2.7 (0.9)	2.3 (0.9)
Satisfaction with government's Coronavirus policy (mean index)	*M (SD)*	2.9 (0.8)	2.8 (0.8)	2.7 (0.9)	2.1 (0.8)
	α	.85	.84	.82	.81
News coverage about Coronavirus is trustworthy.	*M (SD)*	3.0 (0.7)	3.0 (0.7)	2.9 (0.8)	2.6 (0.8)
News coverage about Coronavirus is correct.	*M (SD)*	3.0 (0.7)	3.0 (0.7)	3.0 (0.8)	2.7 (0.9)
Media trust (mean index)	*M (SD)*	3.0 (0.7)	3.0 (0.7)	2.9 (0.7)	2.7 (0.8)
	r	.73	.73	.78	.79

Note. Scale (1 = do not agree at all to 4 = totally agree), *n* = 709 panel participants.

3.4 Analysis strategy

To answer RQ1 and RQ2, the development of satisfaction with the Coronavirus policy and media trust between April 2020 and April 2021 was descriptively examined at the aggregate level based on the 709 panel participants. To explore the reciprocal relationship between these two variables over time and, hence, to answer RQ3, not only longitudinal data were required, but an analytical approach that could separate between-person associations from within-person associations (Slater et al., 2020; Thomas et al., 2021a, 2021b). One way of doing this is to employ a *random intercept cross-lagged panel model* (RI-CLPM), which is an extension of the traditional cross-lagged panel model (Hamaker et al., 2015).[2]

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2   As can be seen in the correlation matrix in Table S2 in the supplementary material, satisfaction with Coronavirus policy and media trust were strongly correlated, both within each wave (*r* between .55 and .70; *p* < .001) and across waves (*r* between .44 and .67; *p* < .001), which was also a relevant prerequisite for studying their relationship over time.

In contrast to the CLPM, the RI-CLPM separates variances at the between-person level from the within-person level, thus accounting for stable differences that exist between people (between-person stability) and temporal, within-person variations (temporal deviations) over time (Burns et al., 20120; Mulder & Hamaker, 2021; Thomas et al., 2021a). This separation is particularly important for the subject under investigation because it allows for an unbiased analysis of the reciprocal relationships, unlike the CLPM (Lucas, 2023), hence providing more nuanced insights into the relations between media trust and satisfaction with the Coronavirus policy over time.

The conceptual depiction of the RI-CLPM applied in the present study using the R lavaan package (Mulder & Hamaker, 2021) is presented in Figure 1.[3] The white rectangles represent the observed scores for media trust and satisfaction with the Coronavirus policy at the respective time points. The random intercepts, as illustrated through gray ellipses, represent the stable between-person component. They were formed as latent variables using the repeated measures as indicators and constraining their factor loadings to 1.

The correlation between the random intercepts reflects the stable relation among between-person differences in media trust and between-person differences in satisfaction with the Coronavirus policy. The within-person level is illustrated in the light gray rectangle. The within-person components, as represented by white ellipses, were formed as latent variables regressed by the observed scores of media trust and satisfaction with Coronavirus policies at each measuring point, with factor loadings being fixed to 1. Furthermore, the relationships between these within-person components are specified.
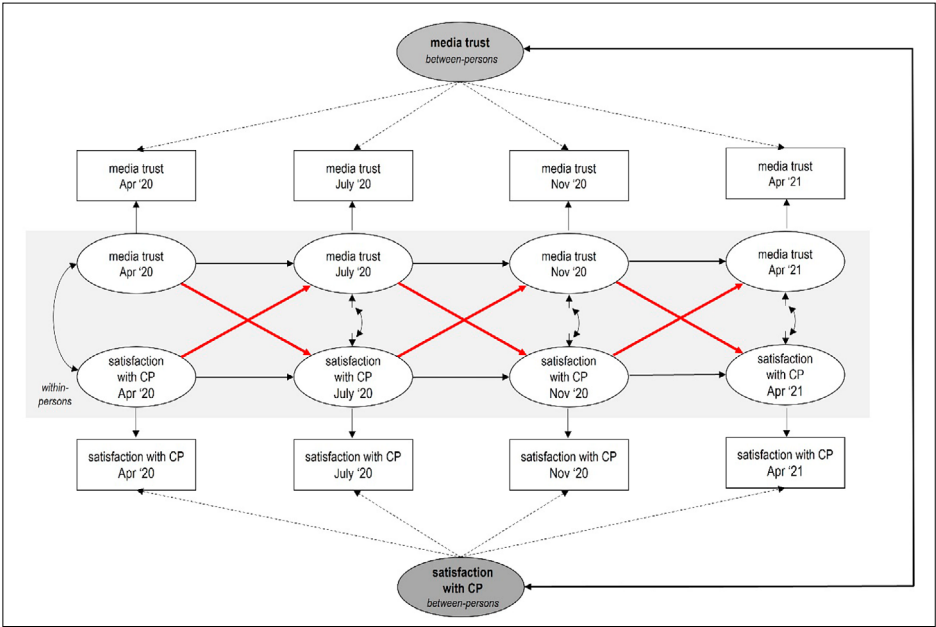
The autoregressive effects, as illustrated using black directional arrows, reflect the amount of "within-person carry-over effect" in media trust and in satisfaction with Coronavirus policy (Mulder & Hamaker, 2021, p. 640). Hence, a positive autoregressive path means that, if a person scores higher (lower) on a variable compared with their expected baseline at one point in time, this person is likely to also score higher (lower) on that variable compared with their baseline at the following point in time. The cross-lagged paths are illustrated using red directional arrows. These paths reflect "whether changes from an individual's expected score on one variable are predicted from preceding deviations on a second variable and are an average of the within-person change" (Burns et al., 2020, p. 79). If such cross-lagged effects can be observed in both directions at one point in time, this reveals the extent to which constructs are reciprocally related over time. If, in the present case, a cross-lagged path is positive, this indicates that a positive (negative) deviation in satisfaction with Coronavirus policy at one point in time leads to a positive (negative) deviation in media trust at the following point in time or vice versa. Furthermore, the correlation between the within-person-centered variables at wave one and the residual correlations at the subsequent waves are represented by vertical arrows. These correlations indicate to what extent deviations from individuals' expected scores on media trust are related to deviations from indivi-

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3   See for R code the additional material to the article of Mulder and Hamaker (2021): https://jeroendmulder.github.io/RI-CLPM/

duals' expected scores on satisfaction with the Coronavirus policy at the same point in time.

To assess model fit, a combination of absolute and relative fit measures was used: the chi-square measure of exact fit, the comparative fit index (*CFI*), the root mean square error of approximation (*RMSEA*), and the standardized root mean square residual (*SRMR*). While *CFI* values ≥ .95 and *RMSEA* values ≤ .05 indicated a good model fit, *CFI* values ≥ .09 and *RMSEA* values ≤ .08 indicated a satisfactory fit (Hu & Bentler, 1999; Kline, 2016).

Figure 1. Simplified RI-CLPM over four measurement points with the standardized maximum likelihood parameter estimates for the between-persons correlation and the within-persons relationships between media trust and satisfaction with the government's Coronavirus policy [CP]
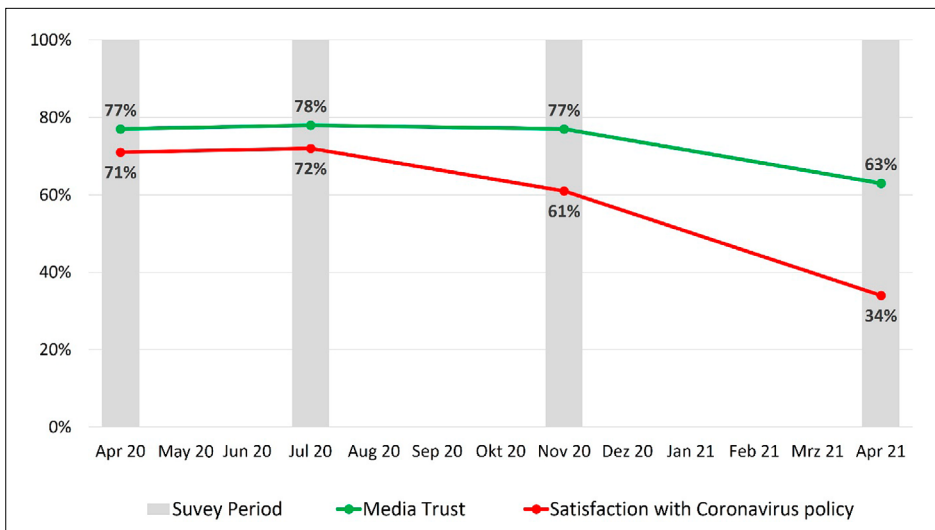

4. Results

4.1 Development of satisfaction with Coronavirus policy and media trust over time

Regarding the question of how satisfaction with the federal government's Coronavirus policy (RQ1) and trust in the media's Coronavirus reporting (RQ2) developed over time, the findings are depicted in Figure 2. For satisfaction with the Coronavirus policy, the majority of the population was quite satisfied with the government's crisis management in the first months of the Coronavirus pandemic. However, there were already initial signs of a slight decline in satisfaction in November 2020 (61%) that reached its absolute low point in the entire study period

in April 2021; around one-third of the population was satisfied with the federal government's Coronavirus policy at that point.

At the aggregate level, media trust was at a consistently high level throughout the first Coronavirus year, with approval ratings between 77 percent and 78 percent. However, a noticeable loss of trust can also be observed between November 2020 and April 2021. Although 63 percent of the respondents still expressed trust in the media, this was 14 percent less than before. If we compare the two curves, they run similarly at the beginning of the Coronavirus pandemic and over the summer. Afterwards, a decline can be observed in both cases; however, a decline in satisfaction with Coronavirus policy seems to have started earlier and to have been more pronounced than the decline in media trust.

Figure 2. Satisfaction with the government's Coronavirus policy and media trust between April 2020 to April 2021

Note. Percentage of those who expressed agreement.

4.2 Reciprocal relations between satisfaction with the Coronavirus policy and media trust over time

The model that was used to explore the reciprocal relationships over time achieved an adequate model fit ($\chi2(9) = 42.05$, p = <.001; *CFI* = .99, *RMSEA* = .08 (90% *CI* = [.06, .11]) *SRMR* = .05). The results of the RI-CLPM are summarized in Figure 3.
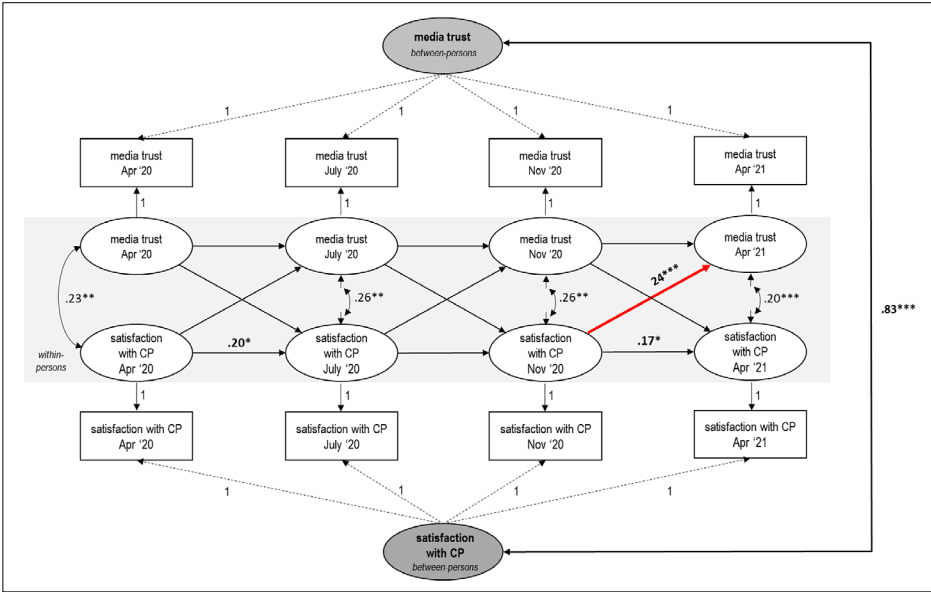
Looking at the findings at the between-person level, we see a strong positive correlation between satisfaction with the Coronavirus policy and media trust (β = .83, *SE* = .02, *p* < .001), meaning that people who were generally more satisfied with the government's Coronavirus policy also showed higher levels of media trust compared with the average.

At the within-person level, there were two positive autoregressive paths in the case of satisfaction with the Coronavirus policy from April to July 2020 and from November 2020 to April 2021, indicating that people who scored higher (lower) on policy satisfaction (relative to their expected baseline) on one occasion were also more likely to show higher (lower) levels of policy satisfaction on the following occasion. More concretely, against the background of the descriptive findings over time, it can be assumed that the first case involved positive deviations from one's own mean, while the second case was more likely to involve negative deviations.

In addition, there were weak positive correlations at each point of time, indicating that a within-person change in media trust was positively related to a within-person change in satisfaction with Coronavirus policy.

Finally, regarding the cross-lagged paths, only one effect was significant: within-person changes in Coronavirus policy satisfaction from July to November 2020 were followed by within-person changes in media trust from November 2020 to April 2021. Against the background of the descriptive findings, it can be strongly assumed that the decline in satisfaction with corona politics (negative deviation) was followed by a loss of media trust (negative deviation). Conversely, no cross-lagged effects occurred from media trust on satisfaction with Coronavirus policy over time. Hence, regarding RQ3, there was no reciprocal influence over time at the within-person level.

Figure 3. Random intercept cross-lagged panel with the standardized maximum likelihood parameter estimates for the between-persons correlation and the within-persons relationships between media trust and satisfaction with the government's Coronavirus policy [CP]

Note. *p < .05, **p < .01, ***p< .001.; n = 548.

5. Discussion

In the context of the Coronavirus pandemic, the present paper examines the development and interplay between satisfaction with the government's Coronavirus policy – an indicator of political support – and trust in the media – the most central source of information about the Coronavirus policy. Both considered individually, but especially their relation, have a great potential to affect the outcome of managing the Coronavirus pandemic in negative and positive ways.

Using data from a panel survey conducted in Germany between April 2020 and April 2021, the present study examined the development of satisfaction with the government's Coronavirus policy and media trust over time. In addition, applying an RI-CLPM across four waves, the present study explored the reciprocal relationship between satisfaction with the government's Coronavirus policy and media trust over time.

Overall, the present study has revealed two major findings. First, at the aggregate level, media trust remained stable at a high level in the first year of the Coronavirus pandemic. Only from November 2020 to April 2021 did the data reveal a notable decline. Likewise, satisfaction with the government's Coronavirus policy turned out to be stable in the first months of the pandemic, illustrating general support for the Coronavirus policy in the initial phase of the pandemic. However, already in November 2020, a decline in Coronavirus policy satisfaction can be seen, which reached a dramatically low point in April 2021. One plausible explanation for this massive decline could be that, with rising infection rates and a second and third wave of Coronavirus infections, the population was observing that the federal government was obviously failing in its handling of the Coronavirus pandemic, despite the many measures and restrictions that included a second hard lockdown. What probably also contributed to a considerable loss of confidence during this time was the inconsistent behavior of the federal government in relation to the so-called "Osterruhe." Initially, on 22 March 2021, the federal and state governments had decided a kind of short lockdown over Easter, meaning that shops would have had to remain closed on both Maundy Thursday and Easter Saturday. Though, after massive criticism from various sides, Chancellor Merkel withdrew this decision on 24 March 2021, admitting that it had been a mistake. Second, the findings of the RI-CLPM provide deeper insights into the relationship between satisfaction with Coronavirus policy and media trust over time. On the one hand, there was a strong positive correlation at the between-person level, indicating that there was a stable relation among between-person differences regarding these constructs. In other words, time-invariant and, thus, to a certain extent, independent of the course of the Coronavirus pandemic, those who were generally more satisfied with the government's Coronavirus policy also showed higher levels of media trust compared with the average. This finding is strongly in line with the findings of previous cross-sectional studies finding positive correlations at very different points in time and in very different study contexts.

On the other hand, at the within-person level, changes in media trust were related to changes in satisfaction with Coronavirus politics at the same point in time. However, with one exception, there were hardly any causal and certainly no reciprocal effects over time. In a very specific phase within the Coronavirus pandemic,

a decline in satisfaction with the Coronavirus policy was followed by a decline in media trust at the individual level. Consequently, these findings call into question the assumption often made in communication studies that media trust influences attitudes toward political systems such as political trust.

Against the background of the previously listed theoretical considerations, two possible explanations for this effect can be put forward. First, in the sense of the "spiral of cynicism" thesis (Cappella & Jamieson, 1997), negative coverage of corona politics may have led to dissatisfaction with the government's handling of the crisis, in turn leading to disaffection with the media. Second, it seems plausible that the media – contrary to their expected critical function from an audience perspective – reported relatively uncritically on the federal government's Coronavirus policy because even the opposition, with the exception of the AfD, the right-wing populist political party in Germany, did not distinguish itself through harsh criticism of the corona policy. Nonetheless, the population was strongly dissatisfied with and critical of the Coronavirus policy at this time and did not see this adequately expressed by the media. This interpretation would also go hand in hand with Coronavirus critics accusing the media of being "state propaganda," which supports the development of a "corona dictatorship" in Germany. However, to say which of the two interpretations is more accurate, it is necessary to analyze the media coverage of Coronavirus politics during this period.

6. Limitations and future research directions

Although the present study has contributed to prior research on the relationship between media trust and attitudes toward politics, it can be improved upon and extended.

First, the current study has clearly underlined the relevance of longitudinal designs in future research that allow for a decomposition of the relationship between media trust and attitudes toward politics into stable, between-person differences and temporal, within-persons dynamics, because this allows for a deeper understanding of the interrelationships of these constructs over time. In very concrete terms, the observed strong, time-invariant relationship between policy satisfaction and media trust at the between-person level raises the question of to what degree and under what conditions changes within-persons are conceivable. A better understanding of these conditions offers possible starting points for influencing and improving the relation between attitudes toward politics and trust in the media, which is essential for democracy.

Second, the present study was conducted in the context of the Coronavirus pandemic, which was a unique context in many respects in terms of political reactions. Therefore, it is not possible to say with certainty the extent to which these results are Coronavirus specific or can be transferred to other contexts. Admittedly, this problem can be put into perspective to a certain extent by the fact that the Coronavirus pandemic was the dominant topic on both the political and media agendas during the period studied here; mechanisms that can also be observed in other crisis situations and events of extraordinarily important social significance (e.g., the refugee crisis).

Nevertheless, this research field would benefit from studies examining the relationships between media trust and policy satisfaction from a more comparative perspective in relation to different topics or policy fields (German energy transition, immigration, etc.). A more comparative perspective could also be used to examine whether the finding revealed here that attitudes toward the political system influence trust in media and not vice versa is also evident in other contexts or is a unique "corona-specific" finding.

In view of the relevance of "distinct growth sequences" for the occurrence of reciprocal influences (Thomas et al., 2021a), it seems important to compare issues or policy fields that differ in terms of political significance, intensity of coverage, and public attention.

Finally, the present study focused on the relationship between satisfaction with Coronavirus politics and trust in Coronavirus reporting, with findings suggesting that changes in satisfaction lead to changes in media trust within the same person. Looking at the state of research so far, above all, factors have been explored that are generally related to the level of media trust, such as social characteristics, political characteristics, or media usage patterns (Fawzi et al., 2021). Nevertheless, because many of these factors can be regarded as rather unchangeable over time, future research should more strongly focus on the question of which factors can cause changes in media trust, how permanent these changes are, and how they can be effectively counteracted – especially in the case of a loss of trust.

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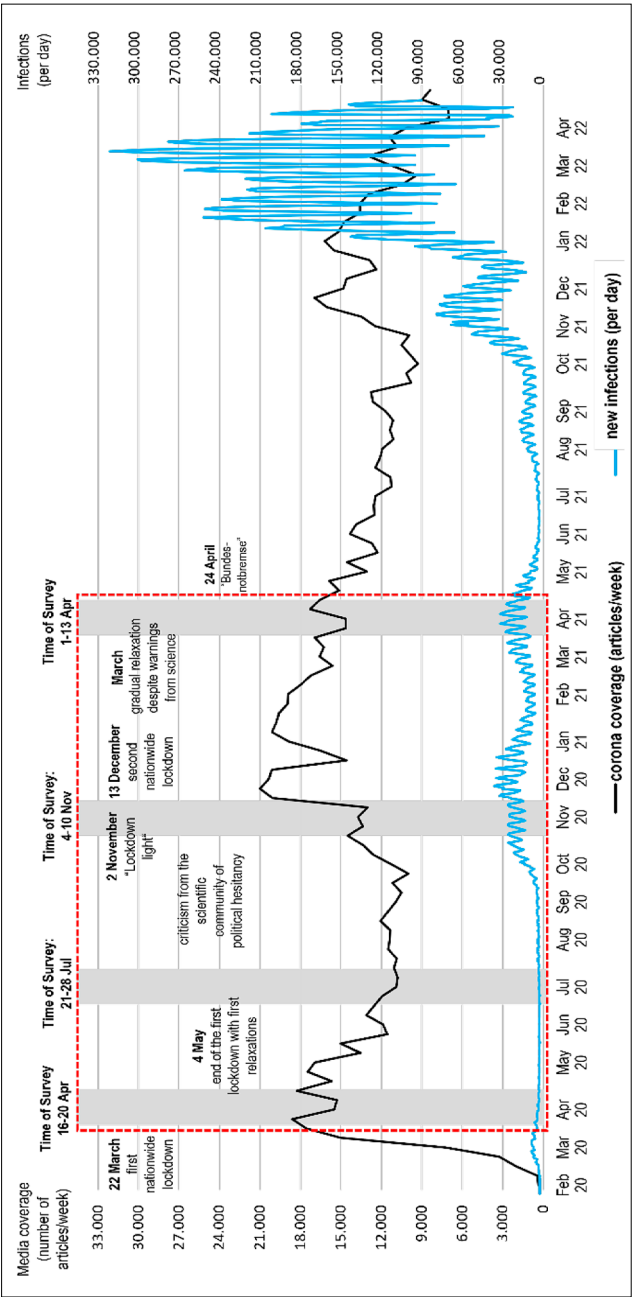
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Appendix

Figure S1. Real-world events and amount of media coverage in the context of this study

Note. Source: RKI (2023) and own illustration[4]

4   The data on the amount of German media coverage (online and print) were collected within the project Relevance of Communication during Corona Crises (RCCC) from the LexisNexis data base using the search terms "corona" and "covid". Search queries were conducted for the period February 2020 (shortly before the first survey wave) to April 2022 (end of the final survey wave within the project). For each calendar week during this period, the number of articles published in German print newspapers and online formats, which were available in the database, was recorded. Regarding print media, the LexisNexis database includes various regional and national daily and weekly newspapers, such as Rheinische Post, Stuttgarter Zeitung, Wiesbadener Kurier, Mitteldeutsche Zeitung, Kölnische Zeitung, Frankfurter Rundschau, Der Tagesspiegel, Die Welt, taz, BILD, Die Zeit, Der Spiegel. Regarding online formats the LexisNexis database includes, for example, Spiegel Online, Rheinische Post Online, ZEIT online, finanzen.net, Börse online, Business Insider Germany, LZ.net, manager magazin online.

Table S1. Real-world events and amount of media coverage in the context of this study

Time of Survey	Health situation	Political measures	Media coverage
April 16–20, 2020	• flattening infection rates after the first Coronavirus infection wave • high rates of mortality • still high uncertainty about the virus and its' transmission	• in the middle of April, the federal Chancellor and the heads of government of the federal states decided the gradual opening of public life after first German lockdown (March 22 – May 4, 2020)	• very intensive media coverage about "corona" and "covid"
July 21–28, 2020	• for about two months the number of new daily COVID-19 infections is at a very low level	• in this phase only very few restrictions still applied	• intensity of media coverage about "corona" and "covid" falls with low level of infections
November 4–10, 2020	• high level of COVID-19 infections; infection rate reached a new peak with about 23,000 new infections per day	• on November 2, 2020, the lockdown light began, including the closure of restaurants, hotels, and strict contact restrictions	• intensity of media coverage about "corona" and "covid" is rising again with growing level of infections
April 1–13, 2021	• very high level of COVID-19 infections (third German Coronavirus infection wave) • infection rate was even higher than in November 2020	• since March 8, 2021, the restrictions were relaxed, even though several measures still existed	• after several months of very intensive reporting about "corona" and "covid" over the winter months the intensity of reporting is slightly down; despite a high level of infections

Table S2. Pairwise correlations satisfaction with the government's Coronavirus policy and media trust for waves 1-5

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Media trust April '20	1.00						
(2) Media trust July '20	.66 ***	1.00					
(3) Media trust Nov '20	.65 ***	.70 ***	1.00				
(4) Media trust April '21	.53 ***	.62 ***	.63 ***	1.00			
(5) Satisfaction with CP April '20	.62 ***	.57 ***	.58 ***	.52 ***	1.00		
(6) Satisfaction with CP July '20	.57 ***	.66 ***	.60 ***	.56 ***	.77 ***	1.00	
(7) Satisfaction with CP Nov '20	.54 ***	.60 ***	.67 ***	.61***	.74 ***	.78 ***	1.00
(8) Satisfaction with CP April '21	.44 ***	.49 ***	.53 ***	.55 ***	.59 ***	.66 ***	.69 ***

Note. All entries are Pearson correlations. N = 578-670 for correlations involving all waves. CP = Coronavirus policy. *p < .05. **p < .01. ***p < .001

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