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Fears, Pandemic, and the Shaping of Social Trust: A Three-Wave Panel Study in Sweden

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ABSTRACT

This study examines the dynamics of social trust and its interaction with different fears during the COVID-19 pandemic, using a three-wave longitudinal dataset from Sweden (2020-2022). We investigate the stability of social trust across different phases of the pandemic and assess the impact of health, economic, and resource scarcity fears on changes in social trust over time. Our findings suggest that social trust remained relatively stable, supporting theories that view it as an enduring trait. In addition, the study identified significant bidirectional relationships: higher health fears were associated with lower trust in the early stages of the pandemic, while fears of resource scarcity had a more pronounced effect in the later stages. Conversely, individuals with higher levels of social trust were less likely to experience heightened fears, although this protective effect diminished over time. In addition, factors such as education, trust in institutions and satisfaction with government communication positively influenced social trust. These findings highlight the complex interplay between social trust and fear, providing insights into how societies can maintain cohesion during crises and informing policies for effective crisis communication and management.

1 | Introduction

Social trust—the confidence in the honesty, integrity, and reliability of others—is a cornerstone in fostering a well-functioning society (Luhmann 2017) and has been linked to various positive outcomes, including economic prosperity, well-being, and health (Helliwell and Aknin 2018; Uslaner 2002). Conversely, a lack of social trust impedes cooperation and collective efforts, thereby constraining the initiatives of individuals and communities (Bierman and Schieman 2020).

Following the COVID-19 pandemic, research has primarily focused on political trust as governments implemented various kind of public health measures (cf. Delhey et al. 2023). Many studies emphasize the “rally-around-the-flag” effect, where crises tend to increase trust in political leaders and institutions. Also, among the Nordic countries, political and institutional trust rose significantly

during the onset of pandemic (Esaiasson et al. 2021; Johansson et al. 2023b; Organisation for Economic Co-operation and Development OECD 2021). However, social trust has received less attention in this context, despite its importance. One notable exception is Esaiasson et al. (2021), who observed a rise in Sweden's social trust in early 2020. Still, given its reputation as a stable and enduring trait (Erikson 1950; Rosenberg 1956), social trust requires further examination over time and in relation to fluctuations over the course of the pandemic. As much of the literature has focused on the resilience of social trust, we believe that insights from Sweden as a high-trust society with a distinct pandemic response—emphasizing personal responsibility and voluntary adherence - can contribute to understanding the resilience and dynamics of social trust.

Focusing on social trust is crucial also given the dynamics of the pandemic as such. A pandemic tends to increase anxiety and

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vulnerability in society, with individuals perceiving others as health threats, fostering suspicion and weakening cohesion (cf. Siegrist et al. 2021). Alternatively, this kind of crises may also enhance solidarity, activating compassion and strengthening interpersonal trust (Aldrich 2012; Steinkopf 2017). While research has examined how health and economic fears influence compliance with protective measures (Jørgensen et al. 2021a, 2021b), the link between various types of fears and social trust remains underexplored. To our knowledge, only Delhey et al. (2023) have studied this relationship and found that health fears increased social trust in Germany, whereas economic fears did not. Similar research in the Nordic context is lacking. This study addresses that gap by examining various kinds of fears and social trust in Sweden across three longitudinal waves (2020–2022). In addition to health and economic fears, our study also includes fear of resource scarcity, a crucial aspect during times of crisis. Fears of scarcity can intensify competition for limited resources, leading to behaviors such as panic buying and hoarding that reflect a “scarcity mindset”, where personal needs are prioritized over collective well-being (Bavel et al. 2020). Research suggests that when resources are perceived as limited, people’s willingness to share may decline, fostering mistrust and social tension within communities (Sim et al. 2020). Therefore, understanding how fear of resource scarcity relates to social trust is essential for promoting cooperation and solidarity during crises.

Our study has two main goals. *First*, it aims to examine the malleability of social trust during different phases of the COVID-19 pandemic. *Second*, adopting a longitudinal approach and by accounting for demographic factors, institutional trust, as well as satisfaction with government communication and management, it aims to examine the impact of three types of fears: health fears, economic fears, and resource scarcity fears. Accordingly, the study aims to answer the following two main research questions:

1. How did social trust fluctuate during different phases of the COVID-19 pandemic?
2. What is the longitudinal relationship between various types of fear and social trust during the COVID-19 pandemic?

2 | Theory

2.1 | Perspectives on Stability and Change of Social Trust

Over the decades, scholars across various disciplines have investigated the nature and essence of social trust. Two contrasting perspectives have attracted notable attention (Uslaner 2008). The first is the *cultural perspective*, suggesting that social trust is an integral component of enduring cultural norms, thus displaying relative stability (Dinesen 2012). Within this framework, social trust is closely linked to an individual’s personality and associated with traits that remain relatively enduring throughout one’s life (Dinesen et al. 2014), changing only gradually in response to subsequent experiences. Accordingly, social trust represents a social reality or a “sticky”

structure with significant stability over time (Uslaner 2002; Trägårdh 2013).

Conversely, the *experiential perspective* argues that social trust is less a fixed social fact or inherent personality trait, but rather a product shaped by our surroundings and life experiences, subject to modification in response to evolving circumstances (Putnam 2000; Hardin 1992). Political psychology refers to the “lifelong openness model”, which suggests that attitudes remain adaptable throughout life, allowing individuals to adjust based on new experiences. Dinesen (2013) supports this by studying first-generation immigrants from low-trust countries, like Turkey and Poland, who adjusted their trust levels in response to the high-trust environments in Northern Europe. Additionally, external factors affect social trust. For instance, Laurence (2015) found that job displacement between ages 33 and 50 significantly reduces generalized trust, with effects persisting for years. Transparent, fair, and efficient political institutions also positively influence social trust (Rothstein and Stolle 2003; Sonderskov and Dinesen 2014).

The strength of the cultural and experiential perspectives in the context of crisis provides a mixed picture. Scholars have, for example, considered the effect of public crisis on social trust in the context of the global financial crisis 2008, and the terrorist attacks in the United States 2001, London 2005, and Norway 2011 (e.g. Wollebæk et al. 2012; Lindström and Giordano 2016). Wu et al. (2022) outline three distinct perspectives suggesting increasing, decreasing, and stable trends of trust respectively.

First, a *crisis-to-negative experiences model* proposes that crises and individuals’ adverse experiences during such times can erode trust. During crises, people typically react with fear or emotional paralysis. Consequently, fear and anxiety diminish individuals’ inclination to engage with others, form connections, and extend trust (Ross and Mirowsky 2009). In the face of a crisis, factors such as misinformation, bureaucratic hurdles, political censorship, and instances of corruption or government mishandling can provoke public outrage (Blair et al. 2017). When governmental failures occur, or are perceived to occur, trust in political institutions tends to decline. This loss of confidence in political institutions may further weaken trust in others.

Second, a *crisis-to-solidarity model* argues that crises can foster a sense of solidarity, thereby increase bonding among individuals, who typically rally to assist one another in recovery efforts (Aldrich 2012). For instance, during national crises, citizens often unite in solidarity and express greater trust in their government and political leaders (Chanley 2002). The increasing support and trust in political leaders can subsequently enhance trust among individuals (Rothstein and Eek 2009).

Third, consistent with the cultural perspective discussed above, a *stability model* suggests that trust is a stable trait that is largely unaffected by life experiences, although temporary changes may still occur (Dawson 2019). While extreme events can affect trust (Uslaner 2002), Bjørnskov et al. (2022) found that institutional turmoil has little long-term effect, but can temporarily shock social trust positively. Thus, while trust is often established early, it remains vulnerable to fluctuations from events such as a pandemic.

Studies of changes in social trust during the COVID-19 pandemic show mixed results. In Sweden and South Korea, trust increased (Esaiasson et al. 2021), while in the United Kingdom and Canada it decreased (Borkowska and Laurence 2021; Bierman and Schieman 2020). These mixed findings may be due to research focusing on limited snapshots of change. We argue that the relevance of different perspectives varies across populations and crisis phases, suggesting that social trust follows different trajectories depending on the type of fear.

2.2 | Trust and Fears in Times of Crisis

Focusing on fears is crucial because they shape social dynamics during crises and influence whether individuals perceive others as threats or develop solidarity (Siegrist et al. 2021; Aldrich 2012). While Delhey et al. (2023) found that health fears increased social trust in Germany, the impact of other fears on social trust remains underexplored, particularly in the Nordic context. This study examines how health, economic, and resource scarcity fears are related to social trust overtime during the COVID-19 pandemic. For this purpose, we take our point of departure from the Protection Motivation Theory (PMT), which explains how individuals protect themselves from perceived threats. Proposed by Rogers (1975), PMT suggests that individuals' assessment of a particular risk engages two cognitive processes: threat appraisal and coping appraisal. In the phase of threat appraisal, individuals evaluate both the severity of encountering a specific threat (threat severity) and the probability of experiencing it (threat vulnerability). The subsequent coping appraisal involves individuals' confidence in the effectiveness of adopting adaptive responses to mitigate and prevent the risk (response efficacy), along with their cognitive evaluation of their capability to execute proactive health behaviors and coping mechanisms (self-efficacy).

During crises such as COVID-19, individuals may perceive threats to their health, finances, and access to essential resources (Lohiniva et al. 2020). Based on the PMT, factors such as viral mortality, health care burden, and long-term effects may be expected to increase threat severity, while risks of infection or financial hardship may increase vulnerability. Preventive measures (e.g., masks, hygiene, vaccination) and coping strategies (e.g., financial planning, social support) help manage risks. Large-scale threats disrupt security and encourage proactive behavior. Similarly, in economic and resource-related contexts, individuals may use coping mechanisms such as financial planning, seeking assistance from social support networks, or adjusting consumption patterns to ensure access to essential resources. Large-scale threats, such as the COVID-19 pandemic, have the capacity to reduce citizens' usual sense of security in various aspects of life and motivate people to engage in proactive behavior to manage perceived threats (cf. Montgomery et al. 2008).

How do different fears affect social trust? In times of threat, individuals may perceive others as a risk. Such perceptions affect social interactions, fostering mistrust and potentially weakening community cohesion (Siegrist et al. 2021; Misztal 2011). Studies show that fear of financial and health risks, such as during COVID-19, reduces trust and participation

in collective efforts (Van Fossen et al. 2022; Delhey et al. 2023). These coping mechanisms are logical because, during a pandemic, everyone around us could potentially be a carrier of the virus. Following this line of reasoning, it has been suggested that higher levels of fear are *negatively* associated with social trust (Delhey et al. 2023).

From an opposite perspective, however, trust can be seen as an “adaptive response” to uncertainty, helping people cope with fear by relying on others (Misztal 2011). This shift from forced to chosen vulnerability (Montgomery et al. 2008) is consistent with the “rally around the flag” effect observed early in the pandemic, where trust increased in several countries, including Sweden (Esaiasson et al. 2021). Studies also link fear to higher trust in institutions during the COVID-19 surge (Foa and Welzel 2023) and show that rising health fears increased both social and institutional trust (Delhey et al. 2023), suggesting a positive relationship between fear and trust. Thus, from this perspective, a *positive* relationship between fear and social trust would be expected.

In sum, this overview highlights both positive and negative links between fear and social trust during a pandemic. However, the literature suggests that positive associations are more linked to political and institutional trust – for example, trust in the government and the healthcare system – since these institutions are expected to be part of the solution and have the resources to protect individuals. In contrast, when it comes to social trust, it seems more plausible from a PMT perspective to *expect a negative impact from various types of fears* in the pandemic context. Put differently, since anyone could potentially be infected and pose a threat to the individual, increasing distrust towards other people in general might be reasonable.

Finally, we need to consider the inverse relationship between our main variables, namely that social trust may influence different types of fears during a pandemic. Social trust promotes resilience, influences risk perception, and reduces fears related to health, finances, and resources (Song and Yoo 2020; Sønderskov and Dinesen 2016). Thus, higher social trust is associated with lower anxiety about potential threats. In other words, individuals with greater trust in others are less likely to experience heightened anxiety. We therefore have reason to expect that higher levels of social trust will be associated with lower health fear, economic fear, and fear about essential resources.

2.3 | Sweden During the COVID-19 Pandemic

Sweden's response to COVID-19 differed significantly from other Nordic countries and international practices (Nielsen and Lindvall 2021). While Denmark, Finland, and Norway implemented strict measures, Sweden focused on “soft power”, emphasizing personal responsibility (Petridou 2020). Although it adopted more restrictive measures over time, Sweden's “flattening the curve” strategy relied on voluntary guidelines and solidarity. In April-May 2020, the number of deaths spiked, particularly among the elderly, making Sweden's death rate higher than that of its neighbors. Critics argued that Sweden's response was delayed and relied too much on the Public Health

Agency, with poor crisis communication (SOU Swedish Government Official Reports 2022). However, keeping schools open was considered a success. Two years later, Sweden had one of Europe's lowest excess mortality rates (Eurostat 2022), but its death toll exceeded that of all other Nordic countries combined, demonstrating the regional limitations of the strategy (Johansson et al. 2023b).

Sweden, like other Nordic countries, has high levels of social and institutional trust (Bengtsson and Brommesson 2022). Described as a *state-oriented risk culture* (Cornia et al. 2016), Sweden views crises as preventable and the state as responsible for managing risks. People trust authorities and expect the state to handle crisis preparedness, with citizens following the guidance of experts (Johansson et al. 2023a). Sweden's high level of trust allowed for voluntary compliance during the pandemic. Initially, public support was strong (Esaiaasson et al. 2021; Jørgensen et al. 2021b), but declined by late 2020 due to rising mortality and stricter policies (Bengtsson and Brommesson 2022; Organisation for Economic Co-operation and Development OECD 2021). While this study focuses on how fear relates to social trust, it's reasonable to assume that factors such as Sweden's high death toll in 2020-2021 and the government's increasingly restrictive pandemic strategy may have influenced the intensity and dynamics of different types of fear.

In sum, Sweden's distinctive approach during the COVID-19 pandemic, with its emphasis on personal responsibility and compliance with recommendations, as well as its comparatively high levels of social and institutional trust, makes it a compelling case for this study. In addition, to the extent that the literature on the pandemic in Sweden has focused primarily on political and institutional trust, this study adds insights specifically on social trust.

3 | Methods

3.1 | Data

In this study, we use a three-wave longitudinal data set that is part of a research project entitled "Values in Crisis: A Crisis of Values? Moral Values and Social Orientations under the Imprint of the Corona Pandemic". This project aims to measure people's values and responses to the COVID-19 pandemic. For this study, we have access to the data for Sweden, where participants were recruited from a nationally representative sample covering individuals aged 20–80 years. The selection was made from the Novus Sweden Panel, which consists of ~50,000 randomly selected members. This panel has been widely used across various research domains and has been featured in empirical studies published in international journals (e.g., Abdelzadeh and Sedelius 2024; Svedsäter et al. 2021).

Data collection consisted of sending an online questionnaire and study information to a target sample of 2,554 randomly selected panel members at three different points in time, approximately 12 months apart. Thus, during the first wave of data collection, if a respondent chose not to participate, additional panel members were randomly selected and invited

to participate in the study. The initial data collection (T1) occurred from April to May 2020, followed by the second data collection (T2) from February to March 2021, and the third data collection (T3) in June 2022. The analytical sample for the present study comprised participants who took part in the survey at a minimum of two measurement points. The average age of the 2,034 participants in the analytical sample was 51.11 years ($SD_{age} = 16.67$) and about 53% were females. Most of the participants were born in Sweden (94.1%), and approximately 56% of them had finished their higher education.

3.2 | Attrition Analysis

We conducted a logistic regression to compare dropouts and retained participants, using attrition (0 = retention, 1 = dropout) as the dependent variable. Of 2554 participants, 520 (20.4%) dropped out after T1, while 2034 (79.6%) remained. Age was the only significant predictor of attrition (Wald = 44.3, $p < 0.001$, $Exp(B) = 0.97$, Nagelkerke $R^2 = 0.072$), with older participants less likely to drop out. The effect size was small (Cohen's $d = 0.02$), suggesting minimal impact on results.

3.3 | Analytical Strategy

Analyses were performed in two steps. *First*, we assessed the stability of social trust using Pearson's r for correlation and an exact cell-wise contingency table analysis using EXACON in SLEIPNER (Bergman and El-Khoury 1987). EXACON provides a detailed analysis of variable associations beyond standard correlations by identifying patterns in contingency tables. Patterns that occur more frequently than expected are classified as "types", indicating a stronger than expected association between certain variable combinations. Conversely, patterns that occur less frequently than expected are called "antitypes", indicating a negative association between those combinations.

Second, we conducted a cross-lagged panel model (CLPM) to longitudinally examine the relationship between our dependent variable, namely social trust, and different types of fears, while controlling for several important covariates. The CLPM analysis was conducted using Mplus (Muthén and Muthén 1998-2017) and focuses on three key components: *autoregressive effects*, *cross-lagged effects*, and *zero-order and residual correlations* at each time point. Autoregressive effects indicate the extent to which each variable is predicted by its own prior value, reflecting stability or consistency over time. Cross-lagged effects assess how one variable affects another at a later point in time, controlling for the prior values of both variables. Zero-order and residual correlations represent the contemporaneous relationships between the variables, considering the common variance measured at each time point. Together, CLPM is well-suited for longitudinal data, allowing us to analyze the reciprocal relationships between variables over time. Figure 1 illustrates the structure of the CLPM model of this study.

Given the categorical nature of our data, we adapted the CLPM with categorical outcomes, using the WLSMV estimator. Model fit was assessed using several indices: chi-squared, CFI,

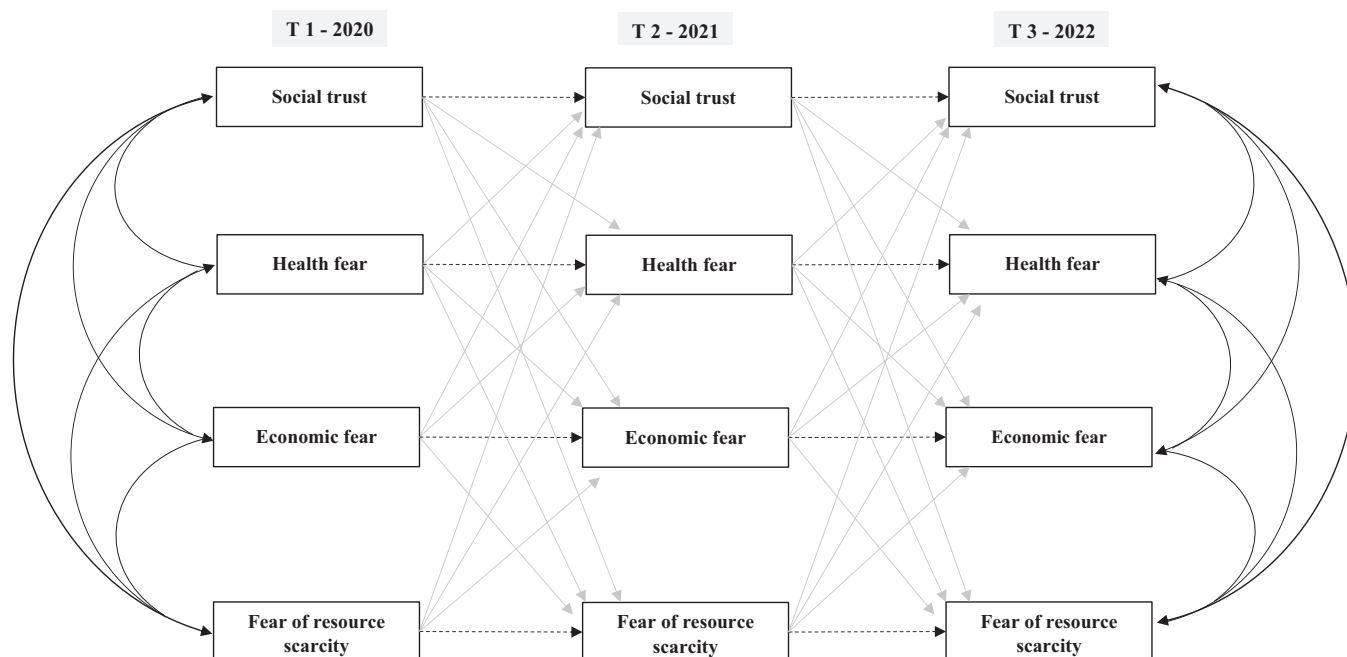


FIGURE 1 | The Structure of the Cross-lagged Panel Model. Notes. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$; Specification of the cross-lagged panel model. For ease of presentation, covariates, residual correlations, and T1 to T3 stability paths are not displayed.

RMSEA, and SRMR (Kline 2010). A good fit is indicated by a nonsignificant chi-square, $CFI \geq 0.95$, $RMSEA \leq 0.06$, and $SRMR \leq 0.08$ (Hu and Bentler 1999).

3.4 | Measures

3.4.1 | Social Trust and Fear

Generalized social trust, which is our dependent variable, was measured using the following question: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” This single item offered dichotomous response options: 0 (*need to be very careful*) and 1 (*most people can be trusted*). A “don’t know” option was also available but was treated as “missing data” in the forthcoming analyses.

We analyzed three types of COVID-19-related fear as independent variables in relation to social trust. *Health fear* was measured by: “How afraid are you that you or your loved ones will get sick and suffer severely from the coronavirus?” *Economic fear* was assessed with: “How afraid are you that you or your loved ones will suffer from an economic recession following the crisis?” The response scale for these two items ranged from 1 (*not at all afraid*) to 5 (*very afraid*). *Fear of resource scarcity* was measured by: “How worried are you that the healthcare system lacks resources, e.g., intensive care?” The response scale for this item ranged from 1 (*not at all worried*) to 4 (*very worried*).

3.4.2 | Control Variables

Studies during COVID-19 found sociodemographic differences in infections and deaths (Jessen et al. 2022). Other research

shows that older, higher-educated, and higher-income individuals tend to have greater trust in others (Putnam 2000; Uslaner 2002, 2008). To account for these factors, we include age, gender (0 = male, 1 = female), education (0 = *no formal education* to 3 = *university education*), income (after-tax household), and place of birth (0 = *outside Europe*, 1 = *European but non-Nordic*, 2 = *Sweden/Nordic countries*). Also, *life satisfaction* is positively linked to social trust, with happier individuals more likely to trust others (Uslaner 2002). In this study, life satisfaction was measured by the following question: “All things considered, how satisfied are you with your life these days?” (Scale: 1 = *completely dissatisfied* to 10 = *completely satisfied*).

We also examine the impact of *institutional trust*, which research from an experiential perspective suggests influences trust in people. Trust in institutions, shaped by perceptions of fairness and effectiveness, spills over into interpersonal trust (Rothstein and Uslaner 2005; Rothstein and Stolle 2008). This perspective is supported by several cross-sectional studies on the relationship between general social trust and political trust (Dinesen 2013; Sønderskov and Dinesen 2014; 2016). In contrast, the cultural perspective views social trust as a stable trait that is formed early in life (Erikson 1950; Putnam 2000). Others propose a bidirectional relationship in which both forms of trust influence each other (Whiteley 2000). Overall, research presents different perspectives on their causal relationship. In this study, institutional trust was measured by the following question: “Could you tell us how much confidence you have in our country’s (a) parliament, (b) government, and (c) government agencies?”. Responses to this question ranged on a Likert scale from 1 (*none at all*) to 4 (*a great deal*). A mean index was developed based on trust in the three institutions.

Moreover, we examine the role of people’s attitudes toward the government and the agencies’ *communication and management of the COVID-19 crisis*. Studies show that greater satisfaction with

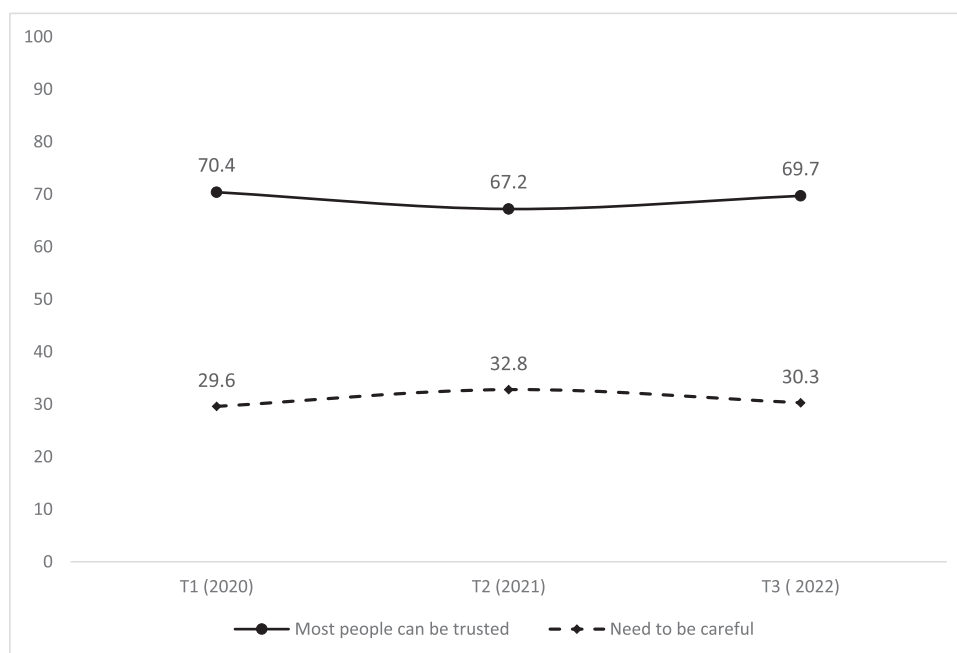


FIGURE 2 | Social Trust Over Time. *Notes.* Presented are the percentages of respondents who trust or do not trust people in general over time.

government performance leads to greater trust (Putnam 1994). Effective, transparent communication during the pandemic also helps to build and maintain trust, by supporting social norms such as social distancing and vaccination (Hyland-Wood et al. 2021; Lee and Li 2021). Citizen satisfaction with the communication and management of COVID-19 was measured by asking about their views on the actions of the organizations involved in crisis management in Sweden: “How do you view the communication and activities of the following organizations regarding COVID-19?” This was followed by five specific questions, such as “Has community information on avoiding infection been helpful?” and “Has the Public Health Agency (PHA) handled the situation well?” Responses ranged from 1 (*very bad*) to 4 (*very good*), and a mean index was created from these items.

Finally, to account for regional differences, we used the SALAR/SKR classification of Sweden’s 290 municipalities into three groups: (A) large cities and adjacent areas, (B) medium-sized cities and nearby municipalities, and (C) smaller cities/rural areas. The grouping was based on size, proximity to the city, and commuting patterns. In our study, 39% of respondents were from group A, 32% from B, and 29% from C, with higher values indicating larger communities.

4 | Results

4.1 | Descriptive Statistics

Appendix A presents correlations, means, and standard deviations for all study variables. Social trust showed high stability over time ($r = 0.59$ to 0.68) and negatively correlated with all forms of fear. For example, social trust at T1 correlated negatively with health fear ($r = -0.12$, $p < 0.001$) and economic fear ($r = -0.15$, $p < 0.001$), indicating higher trust links to lower fear levels. These patterns remained stable. Additionally, health,

economic, and resource fears were positively correlated, suggesting a generalized sense of fear across domains.

4.2 | Stability of Social Trust Over Time

From an initial examination of the percentages, it becomes evident that social trust has remained relatively stable over time throughout the pandemic. As shown in Figure 2, in the year 2020, approximately 70 percent of respondents expressed trust in most people, while 30 percent stated that one needs to be very careful when interacting with others. By 2021, there was a slight decrease in the proportion of respondents expressing trust, but by 2022, the proportion increased again to a level comparable to that of 2020.

In addition, as highlighted earlier, the correlation coefficients between measures of social trust over time indicate a high degree of stability. However, since stability coefficients remain unchanged when the response distribution shifts either upward or downward, we also present the percentages of respondents who provided identical responses after one and 2 years, along with the percentage of those who experienced changes in their social trust over time. When looking at the percentages of individuals in different cells, clear patterns of stability emerge. For example, over 85 percent of respondents who expressed trust in 2020 continued to express trust in 2021. These results are also confirmed by the results of the exact cell-wise analysis of a contingency table. As shown in Table 1, respondents who said that they “trust most people” were more likely than expected by chance (type) to remain in the same category of trusting other people one and 2 years later. The same patterns were evident for respondents who said that “you have to be very careful” when dealing with people. Thus, these respondents were more likely to remain in the same category over time than would be expected by chance.

TABLE 1 | Results from exact cell-wise analysis of contingency tables.

	Most people can be trusted	Need to be very careful	Total
T1 to T2			
Most people can be trusted	1.27*** T (1034/816.80) [85.5%]	0.45*** A (175/392.20) [14.5%]	1209
Need to be very careful	0.37*** A (126/343.20) [24.8%]	2.32*** T (382/164.80) [75.2%]	508
<i>Total</i>	1160	557	1717
T2 to T3			
Most people can be trusted	1.31*** T (692/527.45) [92.4%]	0.26*** A (57/221.70) [7.6%]	749
Need to be very careful	0.38*** A (100/264.70) [26.6%]	2.5*** T (276/111.30) [73.4%]	376
<i>Total</i>	792	333	1125
T1 to T3			
Most people can be trusted	1.26*** T (767/609.40) [88.7%]	0.38*** A (98/255.60) [11.3%]	865
Need to be very careful	0.41*** A (108/265.60) [28.6%]	2.41*** T (269/111.40) [71.4%]	377
<i>Total</i>	875	367	1242

*** $p < 0.001$. The cells representing Type are shaded; Antitype are hatched. In parentheses: observed/expected. In brackets: percentages who remain or move to other categories over time.

In addition, the EXACON analyses show that people who expressed trust were less likely than expected to move into the “needs to be very careful” category over time, indicating a stable pattern. This trend was also true for respondents in the other category, suggesting that people were more likely to stay in the same category. Overall, the analyses show significant stability in social trust throughout the COVID-19 pandemic.

4.3 | Results From the Cross-Lagged Panel Model

4.3.1 | Relationship Between Social Trust and Fears

The results of the cross-lagged panel model examining the relationships between social trust and various types of fear over two-time intervals (i.e. T1–T2 and T2–T3), are reported in Tables 2 and 3. The model shows a good fit to the data: $X^2(84) = 175.95$, $p < 0.001$; CFI = 0.99 and TLI = 0.98; RMSEA = 0.025(90% CI: 0.02–0.03, $p = 1.00$); and SRMR = 0.039.

Focusing on the *autoregressive paths*, the analysis confirms the long-term stability of social trust. Social trust remained highly stable between T1 and T2 ($\beta = 0.78$, $p < 0.001$) and, although

slightly lower, remained significant between T2 and T3. Health fear showed stability in the first interval, but decreased in the second, while economic fear followed a similar trend. Also, fear of resource scarcity demonstrated consistent stability. Overall, all four variables displayed high stability over time.

Moving to the *cross-lagged paths*, health fear significantly negatively predicted social trust from T1 to T2 ($\beta = -0.09$, $p < 0.05$), but this effect was not significant from T2 to T3. No significant cross-lagged effects were found between economic fear and social trust. Fear of resource scarcity had no impact on social trust from T1 to T2 but showed a negative effect from T2 to T3 ($\beta = -0.09$, $p < 0.05$), indicating that increased fear of resource scarcity over time can erode social trust. This finding partially aligns with our hypothesis, as it suggests that resource scarcity fears may have a delayed impact on social trust. At the same time, the results show that social trust negatively predicted health fear ($\beta = -0.08$, $p < 0.05$), economic fear ($\beta = -0.10$, $p < 0.01$), and fear of resource scarcity ($\beta = -0.07$, $p < 0.05$) from T1 to T2, indicating that higher social trust can reduce these fears. However, this negative effect on fears was not maintained from T2 to T3.

Taken together, the results support the cultural and stability model, showing that social trust remains stable over time. The bidirectional link between fear and trust aligns with PMT, as fears—especially health and resource scarcity fears—negatively impact trust. Higher trust initially buffered against these fears (T1–T2), but its protective effect weakened over time (T2–T3).

4.3.2 | Reciprocal Relationship Among Fear Types

The cross-lagged model reveals dynamic relationships between fears over time. Health fear significantly predicts increased fear of resource scarcity in both intervals and economic fear from T2 to T3 ($\beta = 0.10$, $p < 0.05$). Economic fear negatively predicts health fear from T1 to T2, but reverses in the later period. It also predicts fear of resource scarcity from T2 to T3 ($\beta = 0.12$, $p < 0.01$). In addition, resource scarcity fear predicts both health fear and economic fear from T2 to T3 ($\beta = 0.09$, $p < 0.05$). Taken together, these results reveal complex, dynamic relationships among different fears suggesting a cyclical pattern in which fears in one domain may reinforce fears in others, leading to escalating concerns.

4.3.3 | Reciprocal Relationship Social and Institutional Trust

Finally, given the ongoing debate about the causal relationship between social trust and institutional trust, we examined how these variables interact over time. As shown in Figure 3, there was a significant bidirectional relationship between social trust and institutional trust over time. More specifically, social trust was found to positively influence institutional trust in subsequent time periods, suggesting that individuals with higher levels of trust in others are more likely to develop or maintain trust in institutions. Conversely, institutional trust also had a positive effect on social trust over time, suggesting that trust in

TABLE 2 | Standardized coefficients from cross-lagged panel model (part 1).

	T1–T2		T2–T3	
	β	SE	β	SE
Autoregressive paths				
Social trust → Social trust	0.78***	0.02	0.58***	0.07
Health fear → Health fear	0.70***	0.02	0.35***	0.05
Economic fear → Economic fear	0.60***		0.36***	0.04
Fear of resource scarcity → Fear of resource scarcity	0.48***	0.03	0.37***	0.04
Cross-lagged paths				
Health fear → Social trust	−0.09*	0.04	0.07	0.05
Economic fear → Social trust	−0.001	0.04	0.03	0.05
Fear of resource scarcity → Social trust	−0.05	0.04	−0.09*	0.04
Social trust → Health fear	−0.08*	0.04	−0.03	0.04
Social trust → Economic fear	−0.10**	0.04	−0.03	0.05
Social trust → Fear of resource scarcity	−0.07*	0.03	0.03	0.04
Health fear → Economic fear	−0.04	0.04	0.10*	0.04
Health fear → Resource fear	0.11**	0.04	0.11*	0.04
Economic fear → Health fear	−0.07*	0.03	0.06*	0.03
Economic fear → Fear of resource scarcity	0.06	0.03	0.12**	0.04
Fear of resource scarcity → Health fear	0.08**	0.03	0.12**	0.04
Fear of resource scarcity → Economic fear	0.02	0.03	0.09*	0.04

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; β = standardized beta coefficients, SE = standard error.

institutions may foster a greater sense of trust among individuals in society. Thus, our findings are more consistent with research showing a reciprocal relationship between social and institutional trust.

5 | Discussion and Conclusion

The main objective of this study was to examine the stability of social trust levels during the COVID-19 pandemic and to determine its relationship with three types of fear—health fears, economic fears, and resource scarcity fears. Our results show that our dependent variable, i.e. social trust remained relatively stable throughout the pandemic. These findings are consistent with cultural theories suggesting that social trust has a “stickiness”, maintaining relative stability over time (Uslaner 2002; 2008). This finding contributes to the existing body of research by illustrating that social trust maintains its stability even amidst various phases of a global health crisis. This also adds to previous studies that have primarily focused on the initial period of the pandemic and predominantly on political and institutional trust (cf. Esaiasson et al. 2021; Jørgensen et al. 2021a). In contrast, our study covers the bulk of the pandemic period 2020–2022 offering insights into the evolution and persistence of trust during various phases of this prolonged crisis.

In addition, our study provides insight into the specific independent factors that influenced social trust throughout the COVID-19 pandemic. Using a cross-lagged panel model, we examined how changes in pandemic-related fears affected social

trust over time. Health fear negatively impacted social trust in the first period (T1–T2), but not in the second (T2–T3). Fear of resource scarcity had no effect in the first period but showed a negative impact in the later period. Economic fear had no significant effect in either period, consistent with other studies (Delhey et al. 2023). Overall, these findings largely support the Protective Motivation Theory (PMT) literature, which suggests that, unlike political and institutional trust, social trust is more likely to be negatively impacted by various types of fears. Although this negative association is not consistent across all three types of fears or over all measured time periods, it aligns with the reasoning that rising health fears and fears of resource scarcity may lead to increasing distrust toward others. While this observation may not be entirely surprising, our study represents, to our knowledge, the first attempt to longitudinally examine three distinct types of fear and their association with social trust over the course of the pandemic.

Conversely, and highlighting a complex bidirectional relationship, our analysis also shows that social trust acted as a protective factor against different types of fears. Higher levels of social trust were associated with reduced health fears, economic concerns, and worries about resource scarcity in the first period, suggesting that trust in others can help mitigate anxieties related to health, finances, and resources. This aligns with research showing that social trust shapes risk perceptions, influencing how individuals respond to threats (Song and Yoo 2020; Sønderkov and Dinesen 2016). However, these buffering effects did not persist in the second period, indicating that social trust’s protective influence may wane over time.

TABLE 3 | Standardized Coefficients from Cross-lagged Panel Model (part 2).

	T1	
	β	SE
Zero-order correlations		
Social trust with Health fear	-0.12**	0.04
Social trust with Economic fear	-0.10**	0.04
Social trust with Fear of resource scarcity	-0.11**	0.04
Health fear with Economic fear	0.46***	0.02
Health fear with Fear of resource scarcity	0.44***	0.02
Economic fear with Fear of resource scarcity	0.27***	0.03
Covariates		
Gender → Social trust	0.03	0.03
Age → Social trust	-0.01	0.03
Education → Social trust	0.12***	0.03
Income → Social trust	0.10**	0.03
Background → Social trust	0.05*	0.03
Life satisfaction → Social trust	0.11***	0.03
Institutional trust → Social trust	0.36***	0.03
Communication → Social trust	0.08*	0.04
Type of municipality → Social trust	0.01	0.03

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; β standardized beta coefficients, SE standard error.

Moreover, our results showed that also our control variables such as education, income, life satisfaction, and institutional trust were significantly and positively related to social trust. Among these variables institutional trust had the most substantial effect on social trust. This implies that individuals who trust institutions tend to have higher levels of trust in others within society. At the same time, our additional longitudinal analyses indicated a reciprocal relationship between social and institutional.

These findings shed light on how Sweden's response to the COVID-19 pandemic may have influenced the dynamics of fear and social trust among its population. Sweden's approach, characterized by relatively fewer restrictive measures compared to other countries, likely influenced the types of fears prevalent among its citizens over the course of the pandemic period. Initially, concerns about health effects of the virus dominated, leading to a decline in trust in others as individuals grappled with uncertainty and perceived risks to their well-being. In the context of the Nordic countries, Sweden experienced by far the highest number of COVID-19 deaths during the first year of the pandemic, leading to increased public concerns and criticism as early as June 2020 (cf. Johansson et al. 2023a). However, vaccines gradually became available to the public and death tolls dropped. This may explain our findings that in later stages of the pandemic resource-related fears gained prominence over health-related fears. As the pandemic progressed, resource allocation became a pressing issue, as the distribution of healthcare resources and support systems came under scrutiny. The Swedish approach thus provides a lens through which to understand the shifting salience of fear types during the pandemic.

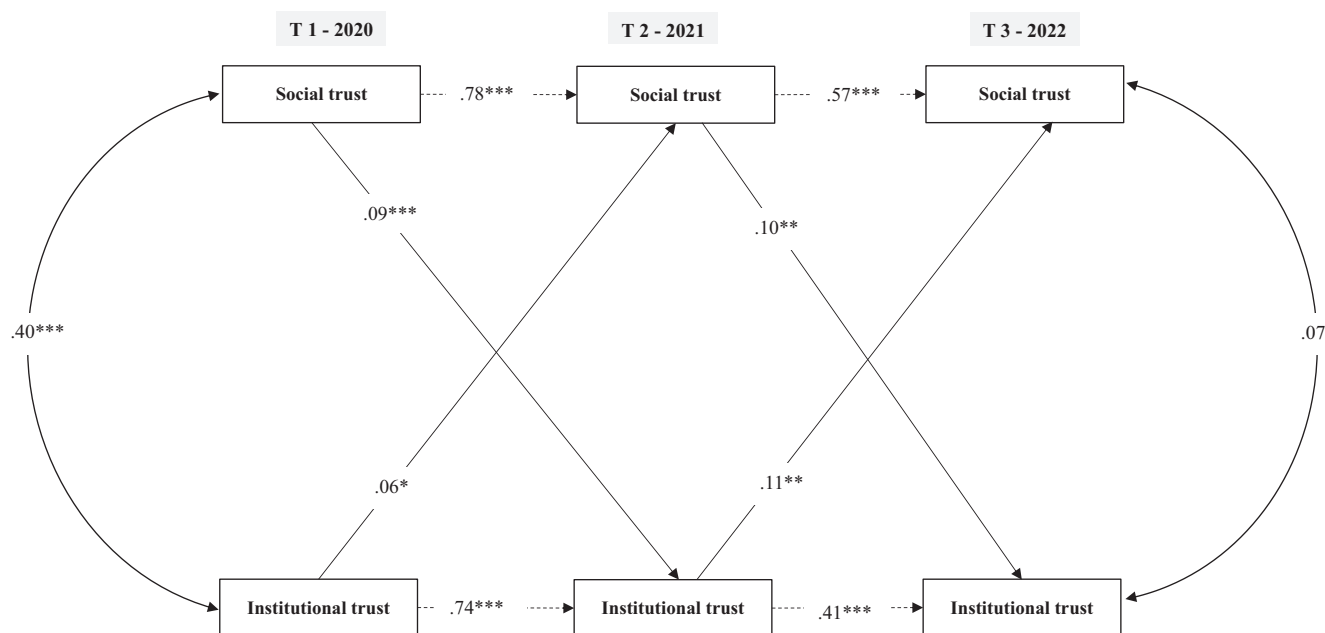


FIGURE 3 | The Longitudinal Relationship Between Social Trust and Institutional Trust. Notes. Specification of the cross-lagged panel model. For ease of presentation, covariates, residual correlations, and T1 to T3 stability paths are not displayed. The model fit: $X^2(22) = 40.725$, $p < 0.009$; CFI = 0.996 and TLI = 0.98; RMSEA = 0.040 (90% CI: 0.01–0.03, $p = 1.00$); and SRMR = 0.022). Standardized Coefficients from Cross-lagged Panel Model.

Furthermore, our results reveal complex, reciprocal relationships between different types of fears. Health fear was shown to significantly influence both economic fear and resource scarcity fear, suggesting that health fear may amplify fear in other domains. Economic fear also interacted dynamically with other fears, initially reducing health fear but later contributing to it, while also predicting greater resource scarcity fear over time. Similarly, fear of resource scarcity had a consistent effect on health fear and was associated with increased economic fear in the later period. These results suggest a cyclical pattern in which fear in one area can increase anxiety in other areas, leading to an escalation of fear.

Our study has limitations and strengths that warrant attention. One apparent limitation is that we lack measures of different aspects of the Protection Motivation Theory to regress on different types of fear. Here, we assume, based on previous studies, that COVID-19 as a global threat affects different aspects of people's lives. At the same time, the current study did not aim to rigorously test PMT during a global crisis, but rather use it as a theoretical framework to better understand the threat of COVID-19 in relation to different types of fears.

Another limitation concerns the measurement of social trust. *First*, the measure relied on a single item question. While such measures offer simplicity and are usually easier to interpret, they can reduce reliability and the ability to capture the full complexity of a construct. However, in the context of measuring social trust, single-item measures have been widely used in national and international surveys, such as the World Values Survey. Single-item measures of social trust have also been widely used in the Swedish context (Bergh and Öhrvall 2018; Rothstein and Stolle 2008). Furthermore, research has shown that social trust is stable over time and a robust measure with strong predictive validity, even when assessed with a single item (Delhey and Newton 2003; Uslaner 2002). *Second*, the single-item question framed social trust as a general and broad quality, rather than situating it within the specific context of the pandemic. This may have contributed to the observed stability in social trust over time, raising questions about the validity of our conclusion. *Third*, the dichotomous nature of our measure oversimplifies the complexity of the concept and may reduce statistical power. Although, the measure of social trust has been shown to be robust and have good validity, future studies should adopt context-specific and multidimensional measures of social trust to better capture its nuanced dynamics.

That said, our study has several strengths. First, by using a longitudinal design, we were able to examine stability and change in social trust over time and during a global health crisis. As a result, we gain a deeper understanding of the malleability of social trust during a global crisis and how changes in different factors, particularly fears, predicted changes in social trust over time. These findings may have significant implications for both academic research and practical policymaking for crisis management, as studies have confirmed that social trust influences citizen compliance with government directives. An additional strength is that our study has examined the role of three different types of fears in relation to social trust. We were able to show that the impact of different types of fears on social trust varied over the course of a pandemic. In addition, this

study is the first to examine how health, economic, and resource scarcity fears dynamically influence each other over time. By revealing their reciprocal nature, it highlights how fears in one area can amplify others, especially in crises. Finally, we analyzed the evolving relationship between social and institutional trust during a pandemic, providing insights into shifts in trust in times of crisis and may offer guidance for improving policy responses and institutional effectiveness in future challenges.

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Conflicts of interest

The authors declare no conflicts of interest.

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Appendix 6
Table A1

TABLE A1 | Correlations, means and standard deviations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Gender	---																				
2. Age	-0.06**	---																			
3. Education	0.06**	-0.05*	---																		
4. Income	-0.11**	-0.06**	0.22**	---																	
5. Place of birth	0.01	0.08**	-0.06**	0.04	---																
6. Social trust T1	0.07**	0.04	0.14**	0.10**	0.04	---															
7. Social trust T2	0.05*	-0.01	0.18**	0.14**	0.02	0.59**	---														
8. Social trust T3	0	-0.03	0.16**	0.17**	0.06*	0.60**	0.68**	---													
9. Health fear T1	0.19**	0.06*	-0.04	-0.09**	-0.03	-0.12**	-0.18**	-0.11**	---												
10. Health fear T2	0.15**	0.04	-0.04	-0.09**	-0.04	-0.09**	-0.15**	-0.13**	0.62**	---											
11. Health fear T3	0.17**	0.09**	-0.04	-0.12**	-0.08**	-0.13**	-0.17**	-0.14**	0.53**	0.59**	---										
12. Economic fear T1	0.14**	-0.05	-0.10**	-0.16**	-0.08**	-0.15**	-0.18**	-0.17**	0.44**	0.29**	0.32**	---									
13. Economic fear T2	0.06*	-0.03	-0.12**	-0.18**	-0.06*	-0.15**	-0.20**	-0.17**	0.24**	0.36**	0.30**	0.54**	---								
14. Economic fear T3	0.13**	-0.02	-0.12**	-0.10**	-0.07*	-0.17**	-0.15**	-0.14**	0.27**	0.33**	0.55**	0.45**	0.51**	---							
15. Resource fear T1	0.11**	-0.12**	-0.04	-0.08**	-0.03	-0.17**	-0.22**	-0.23**	0.38**	0.32**	0.28**	0.30**	0.20**	0.22**	---						
16. Resource fear T2	0.09**	-0.13**	-0.04	-0.04	0	-0.14**	-0.16**	-0.19**	0.33**	0.38**	0.31**	0.24**	0.23**	0.23**	0.47**	---					
17. Resource fear T3	0.11**	-0.13**	-0.01	-0.06	-0.01	-0.12**	-0.14**	-0.12**	0.29**	0.32**	0.38**	0.28**	0.22**	0.34**	0.38**	0.46**	---				
18. Life satisfaction T1	0	0.15**	0.02	0.17**	0.01	0.15**	0.16**	0.13**	-0.10**	-0.15**	-0.10**	-0.16**	-0.14**	-0.10**	-0.14**	-0.13**	-0.12**	---			
19. Institutional trust T1	0.12**	0.02	0.17**	0.11**	0	0.35**	0.33**	0.37**	-0.07**	0.01	-0.01	-0.15**	-0.12**	-0.07*	-0.25**	-0.14**	-0.15**	0.14**	---		
20. Communication T1	0.19**	0.09**	0.07**	0.03	0.08**	0.26**	0.27**	.27**	-0.10**	0	0.02	-0.13**	-0.09**	-0.05	-0.31**	-0.16**	-0.14**	0.13**	0.64**	---	
21. Type of municipality T1	0	-0.01	0.11**	0.10**	-0.06**	0.03	0.07**	0.04	-0.03	0	-0.07*	0.02	0	-0.06	0.01	0.05*	0	-0.03	0.03	-0.02	---
Mean	0.53	51.12	2.5	5.21	1.95	0.7	0.67	0.7	2.73	2.78	2.22	2.36	2.18	1.98	2.87	2.95	2.85	7.72	2.82	3.16	2.11
Standard deviation	0.5	16.67	0.61	2.57	0.26	0.46	0.47	0.46	0.73	0.76	0.74	0.79	0.78	0.68	0.8	0.78	0.83	1.84	0.69	0.72	0.82

***p* < 0.001; **p* < 0.05.