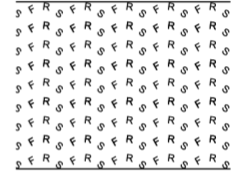


Social Resilience during the COVID-19 Pandemic: Comparisons between Singapore and Switzerland



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- Based on representative surveys between July and September 2020, we compared Singapore and Switzerland with respect to their social resilience after the first wave of the COVID-19 pandemic from around March to May 2020.
- We find that in both countries, residents' cooperation with and their trust in their leaders is relatively higher compared to the cooperation of residents amongst each other. We also find that collectivistic values like "working for common good" or "stand together for our nation" appeared to be of relatively lower importance for Singaporean and Swiss residents. We also find an increase in social cohesion which points towards social resilience.
- In a pandemic, enhancing social resilience requires a good balance between regulatory frameworks and related measures on the one hand, and strengthening collectivistic values, personal responsibilities and social networks on the other. The balancing depends on the respective social norms and cultural values of a society.

The Rationale for Investigating Social Resilience

The growing exposure of communities, regions and countries to natural disasters (e.g., floods, storms, droughts, etc.), biological hazards (e.g., the COVID-19 pandemic) or threats from terrorism (e.g., cyber-attacks) emphasises the need to make social units resilient in case of catastrophes and disastrous events. There is increasing evidence that besides physical systems, economic assets and social/political institutions, less tangible assets like social capital, cooperation and trust are crucial for high resilience (Godschalk 2003). The presence or absence of such social assets characterises the social resilience of a societal unit. Social resilience describes the capacity of social structures and networks to cope with and recover from disasters (Aldrich & Meyer 2014). Without sufficient social resilience, communities, regions and countries may fail to recover quickly and completely from catastrophic events.

For natural disasters, indicators characterising social resilience have been researched extensively (Khoja et al. 2020; Saja et al. 2018). For other types of crises, and especially for pandemic crises like the COVID-19 pandemic, it seems less clear which factors enhance or impede social resilience. Key factors supporting social

resilience before, during and after a natural disaster are social capital, social structure, and social beliefs (Saja et al. 2018). Collective action like cooperation and physical support obviously play a decisive role in the case of earthquakes or floods since people have to be evacuated from concerned areas and provided with food, clothes and shelter. The same holds for terrorist attacks like the 9/11 event (Khoja et al. 2020; Sandler 2005). Yet, in a pandemic situation like the COVID-19, physical distancing matters and may reduce face-to-face support for residents. This alters the kind of social resilience required. As a result, other meaningful indicators to measure social resilience in pandemic situations have to be found and analysed.

In a pandemic, it is important that a society can rely on strong collectivistic values fostering resident's cooperation. Individuals and different social groups have to adapt to and develop new behaviours and practices like working from home, e-commerce, virtual social networks etc. Social resilience depends on how quickly, easily and completely residents can adapt to such new ways of living and interacting with other residents (Aldrich & Meyer 2014). It also depends on how innovative individuals are to create new rules and to fight the pandemic and, at the same time, give reliable, required and useful assistance to

friends and neighbours (Fraser & Aldrich 2021). Regulatory frameworks, governmental measures, social norms and cultural values may play an important role in this context.

Representative Surveys in Singapore and Switzerland

With 5.7 million and 8.6 million residents respectively and similar population growth rates, both Singapore and Switzerland are two rather small countries with a rising population density¹. Both countries are multicultural. Singapore's citizens, for instance, comprise of different ethnic groups (75.9% Chinese, 15% Malay, and 7.5% Indian) and around 29% foreigners out of the total population 2020². Similarly, Switzerland has four language regions (German, French, Italian and Rumantsch) and 25%³ of foreigners, one of the highest proportions in Europe. Furthermore, both countries are among the most developed countries with a high GDP per capita (Singapore: USD 65k, Switzerland: USD 82k⁴ in 2019). Singapore and Switzerland both offer high standards of public services and facilities to their citizens (Yvonne & Jie 2016).

Differences exist in the leadership style between the two countries. Singapore is governed by one dominant political party and public opinions for policy decisions are sought through public consultations and engagements. In contrast, Switzerland's leadership, consists of a coalition of political parties and allows people to directly shape decision-making processes through referenda (Yvonne & Jie 2016).

Singapore and Switzerland have developed diverging approaches to respond to the COVID-19 pandemic. While Singapore took stringent measures since the beginning of the pandemic to strictly mitigate the virus spread, including penalties for non-compliance (An & Tang 2020), Switzerland repeatedly appealed to voluntary actions and personal responsibilities rather than imposing mandatory measures (Würsten 2020). For instance, wearing masks in public spaces was not mandatory in Switzerland at the beginning of the pandemic (FOPH 2020). The requirement to wear masks in public spaces was only made mandatory during the second wave of the pandemic, i.e., in the period from October 2020 to February 2021. Mandatory mask wearing was imposed due to higher infection rates in the second wave (compared to the first wave) and by improved knowledge about the effects of wearing masks.

Given the differences between the two countries and their respective tactics to manage the COVID-19 pandemic, the question is whether the social resilience in Singapore and Switzerland is the same or varies during this crisis. Thus, we conducted a comparative study for

Singapore and Switzerland to assess key indicators of social resilience using a social resilience survey.

Our survey has been based on social resilience indicators known from the literature. It includes most of the commonly used indicators, like social cohesion, social support, access to information as well as demographic and socio-economic attributes (Khoja et al. 2020; Saja et al. 2018). In addition, some COVID-19 related indicators, like the adaptability to work from home, were considered.

In this technical note, we focus on the relevance of cooperation and trust, respectively, for social resilience. Based on insights from another study (Harring et al. 2021), these indicators appear to be highly relevant for social resilience before, during and after a pandemic. In the context of COVID-19, two dimensions of cooperation and trust are of interest, a horizontal and a vertical one. The relationship between different groups of residents (resident-resident dimension) represent horizontal cooperation and trust, whereas the relationship between the residents and their leaders (resident-leader dimension) represents vertical cooperation and trust. Our survey was designed such that both dimensions could be studied. Thus, in this technical note, for the resident-resident dimension, we use "social cooperation" to indicate the intended or actual cooperative behaviours, in particular helping behaviours, amongst residents and "social trust" to indicate residents' perceived trust in other residents. For the resident-leader dimension, we use "leadership cooperation" to indicate residents' cooperative behaviours to their leaders and "leadership trust" to indicate residents' perceived trust in their leaders.

The social resilience surveys for Singapore and Switzerland were conducted in a highly similar manner. The data collection⁵ took place on the online platform "Qualtrics" at around the same time frame (between the 17th and 27th of July 2020 in Singapore, and between the 22nd July and 11th of September 2020 in Switzerland). During the data collection period, Singapore was in its second phase after the Circuit Breaker⁶, where measures to combat the COVID-19 spread were lifted gradually. Switzerland was also in a phase of releasing restrictions after its lockdown in April 2020, which was less strict than the lockdown in Singapore. As mentioned above, at the beginning of the pandemic wearing masks in public was voluntary in Switzerland and no general travel ban was introduced. Yet, in Singapore, masks were mandatory and foreigners were prohibited to enter the country. Around 1500 respondents in each of the countries were surveyed. The samples were representative with respect to gender, age and household income, as well as to ethnicity (Singapore) or nationality (Switzerland).

¹ While the levels of the population density are different in Singapore and Switzerland (7,953 and 215 inhabitants per sq. km in Singapore and Switzerland in 2018, respectively), both countries exhibit rising population densities (World Bank & World Development Indicators, 2021).

² See data reference from the Government's annual report: *Population in brief 2020* (Ministry of Manpower et al. 2020).

³ See data reference from Eurostat (2020).

⁴ Singapore has 65,233 US Dollars GDP per capita in 2019, while Switzerland has 81,993 US Dollars Data in 2019 (World Bank and World Development Indicators 2021).

⁵ The ethical approval from ETH-IRB was obtained before the commencement of our survey study.

⁶ The Singapore circuit breaker period was a nationwide partial lock down to contain the spread of COVID-19. The partial lock down commenced on 7 April 2020 where all public spaces, schools and workplaces were closed except for essential services. After exiting the Circuit Breaker period on 1 Jun 2020, Singapore went into Phase 2, where some of the restrictive measures were eased and schools and workplaces slowly opened up (Baker 2020).

Key Results

1. Cooperation and trust in Singapore and Switzerland

Figure 1 shows the mean scores for cooperation and trust in Singapore (blue line) and in Switzerland (orange line)⁷. As shown in this figure, social cooperation, i.e., the cooperation between residents, is significantly below the “neutral” level in both countries, but leadership cooperation, i.e., the cooperation between residents and leaders, as well as leadership trust, i.e., the trust between residents and leaders, is significantly higher than the “neutral” level⁸.

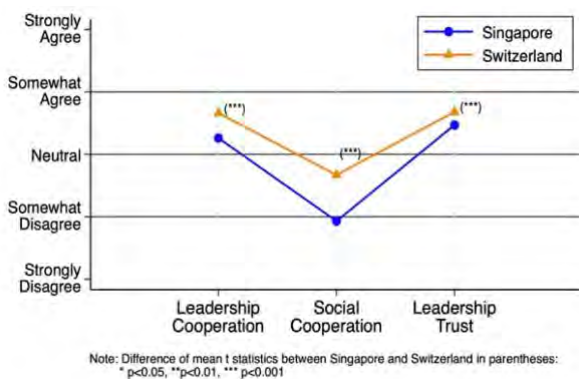


Figure 1 Cooperation and trust during COVID-19 by a Likert-scale: 1 “Strongly Disagree” to 5 “Strongly Agree”

Possible explanations for the observed low social cooperation amongst residents in times of COVID-19:

a. Physical distancing guidelines

The low level for social cooperation during the COVID-19 pandemic that we observed in our survey may be due to physical distancing guidelines imposed by both governments. During the time of our survey, residents in both countries were hardly allowed to have physical social contacts with other residents. Consistent with high leadership cooperation and trust, many citizens obviously followed these rules. Thus, intended and actual helping behaviours in person, i.e. the traditional way of giving help to others, were hardly possible during that time.

b. Residents were unsure how to support fellow neighbours

The low social cooperation scores may also be due to residents not being aware of how they could support their neighbours or other residents in need in non-physical ways. Physical ways of connecting with and supporting each other are what most residents are familiar with, according to prior experience with various critical events. Yet, residents knew that these ways were not appropriate during the Covid-19 pandemic. The ways in which non-

physical mutual support could or should be given were not obvious. Unlike in case of natural disasters, there were no houses that needed to be evacuated or re-built, and there were no people with obvious injuries to be taken care of during the COVID-19 pandemic. Another explanation for the low levels of social cooperation might be that rather low levels were already presented before the pandemic. Answers from the survey participants indicate, for example, that on average volunteering in both countries was rather rare before the COVID-19 outbreak (72% of our respondents in Singapore and 81% in Switzerland answered that they volunteer “Never” or “Rarely”), and volunteering during the outbreak (with 73% of our respondents in Singapore and 81% in Switzerland answering that they volunteer “Never” or “Rarely”) was not significantly lower than before the outbreak⁹.

c. Limited ‘visibility’ of the need for social cooperation

Unlike for natural disasters, many individual damages or consequences of the pandemic for each individual resident were not immediately visible and only emerged slowly over time: residents being isolated and feeling depressed, business owners being financially impacted by a sudden economic downturn (Saw et al. 2020), children having to stop schooling and being with limited social exchange with their classmates, etc¹⁰. The limited visibility of personal damages for other residents as well as people’s primary concerns with personal health issues may have made it less obvious for residents that social cooperation was needed.

Possible explanations for observed high leadership trust between citizens and leaders:

a. Leadership cooperation and trust

In both countries, residents generally trust their governments with an average leadership trust score of 3.47 in Singapore and 3.68 in Switzerland¹¹ and cooperate with their leaders (score of 3.26 in Singapore and 3.66 in Switzerland). We also found that leadership cooperation and leadership trust positively correlate with each other ($r_s(1518) = 0.56, p < 0.001$ in Singapore and $r_s(1498) = 0.45, p < 0.001$ in Switzerland)¹². A further explanation may come from a congruence between government regulations and the respective social and cultural norms. In Singapore, residents may be more used to the government playing a larger role in shaping residents’ behaviours. In addition, the introduction of fines to address non-compliance to the COVID-19 regulations may have strengthened the perceived high level of necessity to cooperate with leaders. This form of cooperation seems to be rather extrinsically motivated. In Switzerland, however, residents are used to rather soft governmental

⁷ In our questionnaire, leadership cooperation indicator includes statements like “I follow all the recommendations related to the COVID 19 given by the government”. Social cooperation indicator includes questions like “How often do you help your neighbours now during the COVID-19 crisis?”, and the leadership trust includes statements like “I believe the government is effectively managing the COVID-19 crisis”.

⁸ At the current stage, we refrain from showing a social trust indicator since social trust, i.e., trust between the residents, seems to be a long-term phenomenon for which we could not find specific evidence during the first pandemic wave.

⁹ The scores in volunteering are measured through a 5-point Likert-scale ranging from 1 (“Never”) to 5 (“Very frequent”).

¹⁰ The COVID-19 regulations/measures have been made by the Ministry of Health in Singapore.

¹¹ The scores are measured through a 5-point Likert-scale ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”) as the ones in Figure 1.

¹² Spearman correlation coefficients are reported here with the degrees of freedom (which is $N(\text{sample size}) - 2$) in parentheses and the significance level.

interventions (i.e., relying more on recommendations and less on commands and prohibitions). Observing that leaders respect the important role of civic engagement tends to support the cooperation of residents with their leaders. This form of cooperation is driven rather intrinsically.

2. Cooperation and trust in Singapore and Switzerland

Figure 2 shows that the mean scores of cooperation and trust vary across different age groups in both countries. A two-sample *t*-test was used for testing the mean differences across age groups within each country.

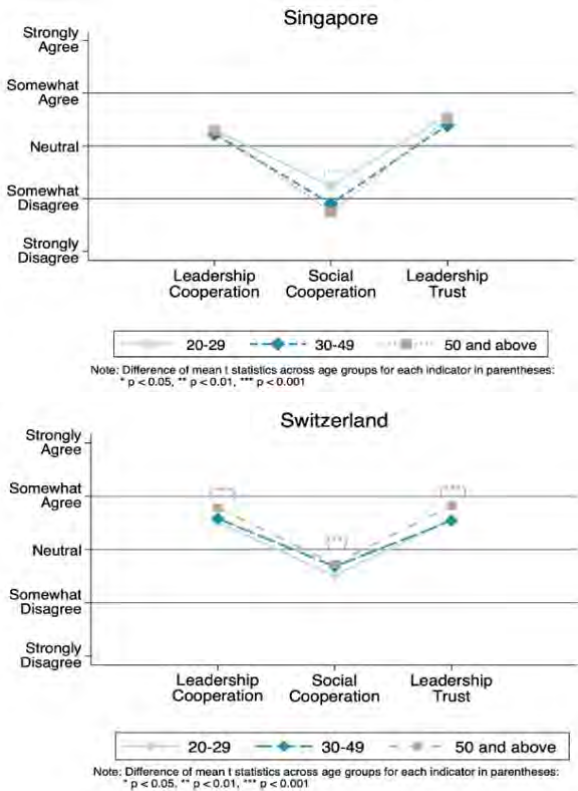


Figure 2 Cooperation and trust across age groups during the COVID-19 by a Likert-scale: 1 “Strongly Disagree” to 5 “Strongly Agree”

Younger respondents, i.e., 20-29 years old participants, in Singapore showed significantly higher social cooperation (2.24)¹³ than the other two age groups (1.90 and 1.75, respectively). In Switzerland, we see statistically significant age differences for leadership cooperation and leadership trust. Younger respondents, i.e., 20-29 years old, in Switzerland cooperate significantly less with their leaders and trust them significantly less compared to older respondents i.e., 50 years old and above.

A possible explanation for our observed results in Singapore might be that younger respondents perceive themselves as belonging to a lower-risk group¹⁴ with respect to the COVID-19. Hence, they may be more open to face-to-face cooperation within their social networks than older residents in Singapore. The opposite effect may hold for older people (Chong 2020). The differences in leadership cooperation and trust across age groups in Switzerland may be explained by the comparably lower

¹³ The numbers in parentheses in this sentence are the mean scores of social cooperation indicator for the specific groups.

¹⁴ Ministry of Health in Singapore emphasised on their website that the senior people are the highest risk groups, not mentioning that much about the risks for younger groups.

general trust levels among younger adults in Switzerland and their rather negative attitudes towards authorities, making them less willing to comply with rules and recommendations from official authorities. Older people, as they perceive themselves as the most vulnerable group, may be more compliant (Nivette et al. 2021).

3. The role of collectivistic values

Collectivistic values emphasise group goals rather than individual goals and put collective interests over personal interests. Such values comprise shared values and beliefs, including community values, and they are key elements of cooperative behaviours, not only during pandemic crises (Khoja et al. 2020; Triandis, 1995). Our survey responses show that during the first wave of the pandemic, “Being honest”, “Respect the rights of others” and “Respect the properties of others” were ranked as the top three important values by the participants in Singapore (see Figure 3). We find a similar ranking for participants in Switzerland, yet the Swiss respondents rank “Respect

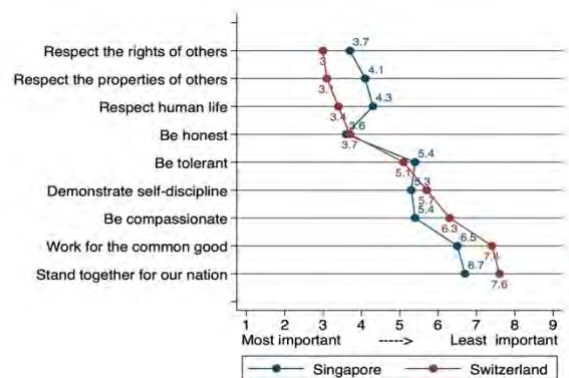


Figure 3 Mean scores of collectivistic and non-collectivistic values. (Range from 1 “Most Important” to 9 “Least Important”)

human life” instead of “Being honest” among the top three values.

The top-three values are rather non-collectivistic values, emphasising the importance of societal well-being. Collectivistic values, like “work for a common good” or “stand together for our nation” figure among the least two important values in Singapore as well as in Switzerland. This relatively low relevance of collectivistic values may have contributed to the relatively low levels of social cooperation, which we mentioned above.

Weak collectivistic values tend to weaken a society’s cooperative behaviours, which matters for social capital and also for social resilience. Social capital includes aspects like social cohesion, social support and social networks, which are fundamental for maintaining and building social resilience before, during and after disasters (Saja et al. 2018). If social capital decreases over time, the chances for a high level of social resilience may also decrease.

4. Changes of Social Capital during the COVID-19 pandemic

Changes in social cohesion were assessed by reported changes in the willingness to help others. Reported changes in social support were measured by a self-reported increase or decrease of residents' actual support of their friends and neighbours. Variations in social networks were assessed by a higher or lower self-reported intensity of interactions in individuals' social networks.

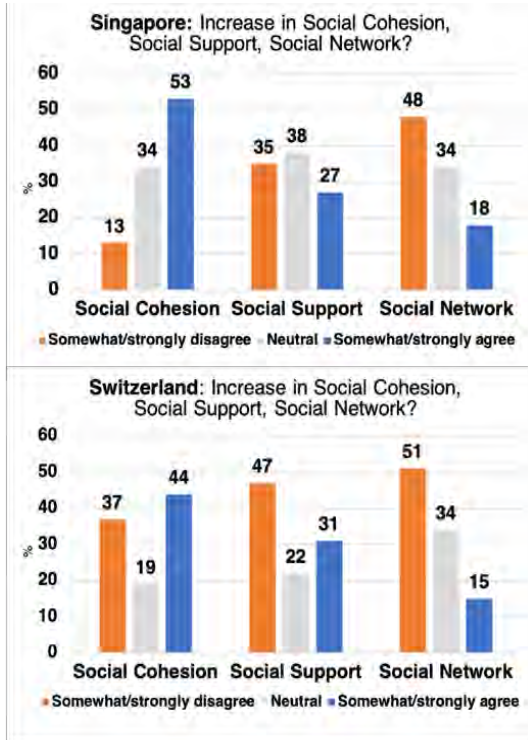


Figure 4 Social capital changes during COVID-19 by a Likert-scale: 1 "Strongly Disagree" to 5 "Strongly Agree"

Figure 4 shows that Singapore and Switzerland both had a high proportion of residents who reported that they perceived an increase in social cohesion during the pandemic. In both countries, the proportion of residents who perceive an increase in social cohesion is statistically significantly higher than the proportion of those who do not, alluding to an increase in social cohesion ($z = 30.70, p < 0.001$ in Singapore; $z = 4.39, p < 0.001$ in Switzerland)¹⁵. On the other hand, there seems to be no increase, but a significant decrease in social support ($z = -5.02, p < 0.001$ in Singapore; $z = -9.24, p < 0.001$ in Switzerland) and in the relevance of social network relations ($z = -17.01, p < 0.001$ in Singapore; $z = -20.87, p < 0.001$ in Switzerland). The increase in perceived social cohesion seems to contradict the low importance of collectivistic values (i.e., working for common good) reported above, but may be explained by the relatively high respect for human life. This respect triggers citizens to keep away from each other and comply

with the distancing rules to preserve their own lives and the lives of others.

Our results suggest that residents in both countries wanted to help others more during the pandemic than before (increase in social cohesion), but they did not actually provide support or intensify their social network relations. These differences might be due to the well-known general intention-action gap, and it may be caused by the social distancing regulations due to the COVID-19. As mentioned before, in the COVID-19 situation, residents were advised to stay at home and had to find alternative ways to offer help to others, such as online social support for instance. Yet, non-physical forms of social support were not self-evident for the residents. Overall, the increase in social cohesion is a sign for a strong sense of unity of the residents, which matters for social resilience.

Lessons Learnt

During the first wave of the COVID-19 pandemic, the actual support amongst residents had been limited in Singapore as well as in Switzerland. If social cooperation is interpreted in the sense of physical help only, a low cooperation level means a high compliance with the social distancing rules and hence a step towards resilience. Yet, social cooperation has more features than just physical assistance. Therefore, a low level of social cooperation is problematic and impairs social resilience, which is needed for societies to cope with and recover from a pandemic. Yet, the increase in social cohesion will pave the way towards social resilience.

As mentioned above, the availability and awareness of ways to support others "virtually" during a pandemic are an important step to enhance social cooperation and hence social resilience during a pandemic. Digital community apps/platforms, like *Nextdoor*¹⁶, could virtually shorten the social distance between neighbours and residents and might therefore be interesting in a pandemic context. Yet, privacy issues related to the use of such apps have to be taken seriously. The platform providers may matter. Government-supported platforms like *SG Cares*, *GoodHood.SG*¹⁷ may be considered as more or less trustworthy compared to purely private platforms. The conditions have to be explored under which one or the other type of platform may have better effects with respect to enhancing social cooperation. Enhanced virtual communication would have to focus on topics like isolation, depression, financial distress, etc. in a credible, yet not intrusive way. This could help to allocate support to those in need during a pandemic. We have to be aware of the fact that during a pandemic – other than in case of natural disasters – many damages (like isolation, depression or financial needs) are not directly visible.

People in Singapore and Switzerland do less prioritise collectivistic values like "working for common good". This

¹⁵ Results of two-sample z-test of proportions are reported here with a null hypothesis H0: Difference between the proportions of respondents who disagree and agree (somewhat and strongly) that they perceive an increase in social cohesion equals zero.

¹⁶ A platform to encourage residents to post what help they need, neighbours living in the same area who can help can easily stand up to give them a favour. See <https://nextdoor.com/>

¹⁷ The two Apps are supported by SG United, please see reference at *SG Cares* and *GoodHood.SG*.

should be taken into consideration when trying to promote collective actions, which are key to align people's behaviour during pandemics (see e.g. Harring et al. 2021). Highlighting the benefits of safety measures for the common good could be less effective in such settings than stressing the need of safety measures for one's own benefits, for instance.

The results of our surveys suggest that not all social resilience indicators used for analysing a pandemic crisis may coincide with those used for natural disasters. "Social support", for instance, should not only refer to physical contacts but also comprise other forms of support. Due to social distancing rules during a pandemic, social support or social networking activities have to be framed in a different way than it has been done so far with respect to natural disasters. Hence, additional indicators (like for instance online social capital) pointing to the adaptability and responsiveness of residents in case of a pandemic have to be designed to map the social resilience of a population in an adequate way.

Finally, it seems to be important to monitor how social resilience changes while a (pandemic) crisis is going on. Replicating our social resilience surveys at different time points will be a positive step in this direction. Additional surveys and studies will help to identify explanatory factors of social resilience, such as external framework conditions (e.g., regulatory frameworks and governmental measures) and internal factors (e.g., social norms and values). Based on such insights, targeted measures to enhance the social resilience of societies can be developed.

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