

Is Social Capital Essential for Disaster Relief?

- Bringing Together Self-Interest and Social Contribution

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Natural disasters today occur more frequently than ever before, and attention is therefore shifting toward the financing of disaster recovery and reconstruction efforts that rely not only on government support but also on support from the civil sector based on a spirit of mutual aid and cooperation. In addition to the traditional donations and volunteer activities, the 2024 Noto Peninsula earthquake saw an expansion of diverse new forms of civil sector support, including new initiatives such as the Furusato Nozei system, crowdfunding, the purchase of products from the disaster-affected area through online shopping, and indirect support through travel to the disaster-affected area.

According to our first “Survey on the Current Status of Workers in the Digital Economy and Society,” while those aged 65 and older primarily made traditional donations, new forms of support such as support using digital tools and tourism in the Hokuriku region were more widely utilized by younger generations following the Noto Peninsula earthquake. A particularly noteworthy point is that while traditional donations tend to be actively made by people with a high level of awareness of social capital, this trend is not seen in relation to new forms of support. In other words, even people with a low level of awareness of social capital are likely to utilize these new forms of support. What specific measures will it be necessary to adopt based on this finding?

In order to further invigorate civil sector support for disaster relief, it will be essential to diversify methods of providing support, including the use of digital tools. Additionally, the creation of an environment that encourages the voluntary participation of even those with a low level of awareness of social capital in support efforts will necessitate the design of incentives that balance the pursuit of self-interest and contribution to society*.

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1. The Growing Importance of Civil Sector Support in Response to Increasingly Frequent Natural Disasters

Today, abnormal weather events and large-scale disasters occur frequently throughout the world, causing enormous damage. In Japan, typhoons, heavy rainfall, and earthquakes occur almost every year, and the damage continues unabated. The Noto Peninsula earthquake, which occurred on January 1, 2024, caused a wide range of damage, including a tsunami, landslides, fires, building collapses, liquefaction, uplift of the ground surface, and disruption of transportation networks. Furthermore, from September 21 to 23 of the same year, heavy rainfall struck the Noto region, exacerbating the damage. Due to the complex geomorphology of the Noto Peninsula, recovery and reconstruction efforts led by the national and local governments are facing significant challenges.

Given this situation, it has come time to rethink how we proceed with recovery and reconstruction in the current era of frequent natural disasters. Up to the present, the national and local governments have implemented disaster countermeasures, disaster prevention measures, and recovery and reconstruction projects in a planned and systematic fashion based on laws, and they have been able to rely on sufficient financial resources. However, in the current situation of a high frequency of large-scale disasters, the limitations of the existing framework are becoming apparent. In the future, if large-scale disasters occur frequently throughout Japan, it may be difficult to implement sufficient recovery measures or fiscal measures as before, leading to slower recovery. Furthermore, in a situation of increasing government debt, there is a possibility that the necessary fiscal support may not be available (Note 1).

Against this background, the utilization of civil sector support for disaster recovery is attracting attention. The integration of mutual aid mechanisms with public support and their strategic incorporation into disaster recovery efforts will become increasingly important in the future. Traditional civil sector support has primarily consisted of cash donations (from fundraising initiatives, etc.) and volunteer activities, which became active after the Great Hanshin-Awaji earthquake. However, the Noto Peninsula earthquake highlighted the potential of diverse forms of civil sector support. Examples include crowdfunding for financial support, the purchase of products from the disaster-affected area through online shopping, supporting disaster-affected local governments through the “Furusato Nozei” system**, and travel to the disaster-affected area using the “Hokuriku Support Discount.” These forms of support have become more accessible due to the advancement of the digital economy as a result of the COVID-19 pandemic. While none of these are direct forms of support, they represent new ways of supporting disaster-affected areas through online procedures, such as donations, purchases, and travel.

The first “Survey on the Current Status of Workers in the Digital Economy and Society,” conducted by the author and the Nippon Institute for Research Advancement (NIRA), looked at the utilization of a range of disaster relief initiatives following the Noto Peninsula earthquake. Based on the survey results and the formal analysis by Okubo and Noy (2026), this paper examines characteristics of the people who are utilizing the various types of support methods and explores the direction for civil sector support in disaster recovery. Okubo and Noy (2026) conducted econometric analysis on post-disaster aid in the Noto Peninsula earthquake.

2. Data

(1) Survey Questions

The first “Survey on the Current Status of Workers in the Digital Economy and Society” conducted by the author and NIRA was carried out from Saturday May 18 to Tuesday June 11, 2024. The survey respondents were participants in the Questionnaire Survey on the Effects of the Spread of COVID-19 on Telework-based Work Styles, Lifestyle, and Awareness,” which has been conducted continuously since the early stages of the COVID-19 pandemic, now totaling 10 surveys (Note 2). A total of 10,670 responses were received; 97% of respondents were in work. In addition to questions regarding basic characteristics (age, gender, occupation, employment status, income, educational background, etc.), as well as work patterns and company environment, respondents were asked about their use of support initiatives related to the Noto Peninsula earthquake. Specifically, respondents were asked about seven civil sector support measures, and they selected one option from the following four choices for each measure: “Have already used multiple times,” “Have already used once,” “Have not yet used, but plan to do so in the future,” or “Have not yet used, and do not plan to do so in the future.” The following sections present the aggregated results of this survey. Because it was unrealistic to expect an individual to have utilized all seven support measures, it was likely that responses to this effect would be inappropriate. Therefore, respondents who indicated that they had already utilized all seven support measures (2.1%) were excluded from the analysis. Additionally, unemployed respondents (3.0% of the total) and those in their teens (0.7% of the total) were excluded from the analysis given that their work and living conditions might differ from those of the other respondents who were in work (Note 3).

<Seven Civil Sector Support Measures>

1. Donations

- ① Donations (excluding crowdfunding)
- ② Donations through crowdfunding

2. Support through tax payments or purchase of goods

- ③ Payment of Furusato Nozei to disaster-affected municipalities
- ④ Online shopping for products from the Hokuriku region

3. Support through travel to the disaster-affected area

- ⑤ Tourism in the Hokuriku region without using the “Hokuriku Support Discount”
- ⑥ Tourism in the Hokuriku region using the “Hokuriku Support Discount”

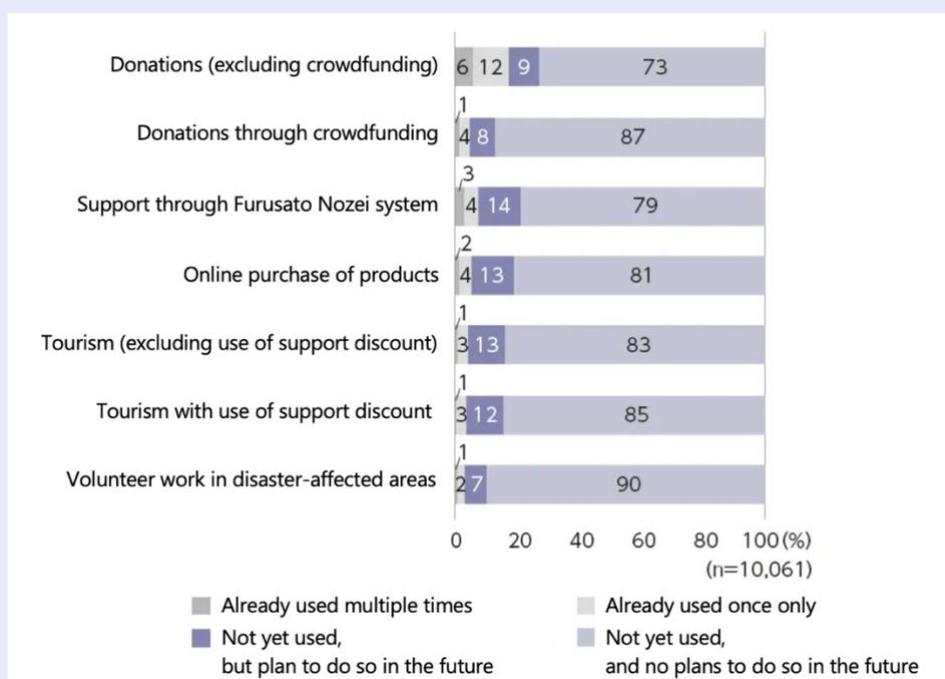
4. Volunteer activities

- ⑦ Volunteer activities in the disaster-affected area

(2) Status of Utilization of Civil Sector Support Methods and Basic Characteristics of Respondents

Figure 1 shows the status of utilization of each support method. The percentage of respondents who answered that they had already utilized the measures ranged from 3% to 18%; when including those who plan to utilize them in the future, the percentage rose to 10% to 27% (Note 4). Additionally, among the seven types of civil sector support, the percentage of those who had already utilized at least one type is 26%, and when including those planning to utilize one or more of the methods in the future, this rises to 40%. This indicates that a significant number of people are actively utilizing support methods that are of personal interest to them, suggesting that civil sector support is widely entrenched.

Figure 1: Status of utilization of civil sector support methods related to the Noto Peninsula earthquake



When broken down by type of support, the traditional, “orthodox” method of direct donation is the most common of those considered. However, new methods emerging with the further advancement of the digital economy are also worth noting. For example, 8% of respondents have made donations through the “Furusato Nozei” system (21% when those planning to do so are included), 5% have made online purchases (19% when those planning to do so are included), and 5% have made crowdfunding donations (13% when those planning to do so are included).

Next, we will examine utilization of support methods by respondents’ individual characteristics. First, in column (1) of Table 2, we see little difference between the sexes with regard to the percentage of people who have utilized at least one support method, with 25% for men and 27% for women. By age group, the utilization rate is relatively high at 32% for the elderly aged 65 and over, followed by 28% for the young aged in their 20s. The utilization rates for those in their 30s and 40s were 24% and 23%, respectively, lower than the elderly and young age groups. In addition, there was a tendency for the utilization rate to be higher among those with a higher level of household financial assets (such as savings and securities).

Table 2 Utilization of Support Methods by Individual Characteristics

	(1) Utilized at least one support method	(2) Donations (excluding crowdfunding)	(3) Donations through crowdfunding	(4) Support through Furusato Nozei system	(5) Online purchase of products	(6) Tourism (excluding use of support discount)	(7) Tourism with use of support discount	(8) Volunteer work in disaster- affected areas
Total (n=10,061)	26.1 (40.1)	17.5 (27.0)	5.0 (12.7)	7.5 (21.1)	5.4 (18.7)	4.0 (16.5)	3.7 (15.4)	3.2 (10.1)
Male (n=5,591)	25.3 (39.6)	16.4 (26.1)	5.6 (14.0)	8.0 (22.1)	6.0 (19.9)	4.4 (18.0)	4.3 (17.1)	3.9 (11.7)
Female (n=4,470)	27.1 (40.7)	18.9 (28.1)	4.1 (11.2)	7.0 (19.8)	4.6 (17.3)	3.4 (14.7)	2.9 (13.4)	2.4 (8.2)
20s (n=1,597)	27.5 (40.8)	15.4 (28.7)	9.4 (23.2)	10.3 (27.5)	8.2 (23.4)	7.6 (24.2)	8.6 (24.7)	8.2 (22.0)
30s (n=1,552)	24.1 (34.3)	15.6 (23.1)	4.8 (12.2)	8.4 (19.8)	4.9 (14.7)	5.1 (15.9)	3.8 (14.1)	3.8 (10.1)
40s (n=2,218)	23.1 (36.6)	15.2 (24.4)	4.4 (11.1)	6.7 (19.8)	4.1 (15.6)	2.8 (13.3)	2.2 (12.1)	2.3 (7.7)
50–64 (n=3,140)	25.9 (41.5)	18.7 (27.0)	3.4 (8.8)	6.7 (19.3)	4.3 (18.2)	2.5 (13.9)	2.4 (13.3)	1.5 (6.7)
65 and older (n=1,554)	32.0 (48.9)	23.8 (33.7)	3.9 (11.4)	6.1 (20.5)	7.0 (23.8)	3.4 (18.5)	2.6 (15.5)	1.4 (6.8)
Low level of assets (n=3,460)	18.5 (29.3)	12.7 (19.8)	3.0 (9.3)	4.5 (15.1)	2.8 (13)	2.3 (11.5)	2.1 (11.2)	1.9 (7.8)
Medium level of assets (n=2,677)	28.0 (44.2)	18.1 (29.6)	6.9 (16.1)	8.4 (23.9)	6.0 (21.6)	5.5 (19.8)	5.2 (18.6)	4.9 (14.0)
High level of assets (n=2,852)	32.6 (48.5)	21.7 (32.1)	5.7 (14.1)	10.9 (26.3)	8.1 (23.2)	4.7 (19.8)	4.4 (18.3)	3.3 (10.2)

(Note) Rate of utilization of support methods for the Hokuriku region among employed individuals aged 20 and older (%). The figures in parentheses show the rate when those who plan to utilize a support method in the future are included. “Low level of assets,” “Medium level of assets,” and “High level of assets” refer to households with total financial assets (such as savings and securities) of less than 1 million yen, 1 million yen or more but less than 7 million yen, and 7 million yen or more, respectively.

When broken down by type of support (Table 2, Columns 2–8), utilization rates for traditional donations are higher among those aged 50–64, and particularly among those aged 65 and older, than among those aged 40 and under (Table 2, Column 2). On the other hand, in the case of crowdfunding (Table 2, Column 3), Furusato Nozei donations (Table 2, Column 4), and Hokuriku tourism (Table 2, Columns 6–7), utilization rates among younger age groups in their 20s and 30s exceeded those of age groups in their 40s and older. Additionally, the rate of utilization of online product purchases was highest among those in their 20s, at 8.2%, followed by those aged 65 and older.

The results discussed above tell us that while the diversity of forms of private support is increasing, overall, older age groups strongly tend to utilize traditional donation and online product purchases. By contrast, members of younger generations, particularly those with a high degree of familiarity with digital technology, are actively utilizing new forms of civil sector support such as crowdfunding, Furusato Nozei donations, online product purchases, and travel support programs like the Hokuriku Support Discount.

(3) Relationship with Level of Awareness of Social Capital

As shown above, utilization rates and the support methods chosen vary depending on physical and socioeconomic characteristics such as age and financial assets, including savings. However, the choice of civil sector support may be related not only to socioeconomic factors such as age, gender, income and educational attainment, but also to the individual's attitudes toward community and their connection to society. In particular, in the area of support for disaster recovery, where mutual aid and cooperation are fundamental, it is important to understand the relationship between the individual's choice of support methods and their level of awareness of "social capital."

Social capital refers to the strength of relationships between people and their involvement in their communities, taking in trust in others, mutual assistance, and cooperation with and contribution to the community. According to Putnam, et al. (1993), a high level of social capital brings many benefits to a community through the promotion of democracy, the achievement of political and social stability, and the strengthening of cooperation among residents, and is linked to the revitalization of socioeconomic activities and economic development. This is a very different way of thinking from the existing economic framework, which emphasizes the maximization of individual profit through market competition and the maximization of utility centering on consumption behavior that satisfies desires. Today's world, with its frequently-occurring natural disasters, demands voluntary support and mutual assistance, and the relationships of trust between people in communities, encompassing their moral values and ethical sense, are likely to play a major role in support initiatives.

This paper will therefore analyze people's behavior in relation to civil sector support methods, with consideration of elements of social capital. The first "Survey on the Current Status of Workers in the Digital Economy and Society" conducted by myself and NIRA asked respondents about elements that constitute social capital. Specifically, respondents were asked to rate the following items on a five-point scale ranging from "1. Not at all applicable" to "5. Highly

applicable.”

1. Trust in people (Trustworthiness)

- “In general, people are trustworthy”
- “My neighbors are trustworthy”

2. Mutual assistance (Reciprocity)

- “People must help one another to get by”
- “If you help others, someone will help you when you are in need”

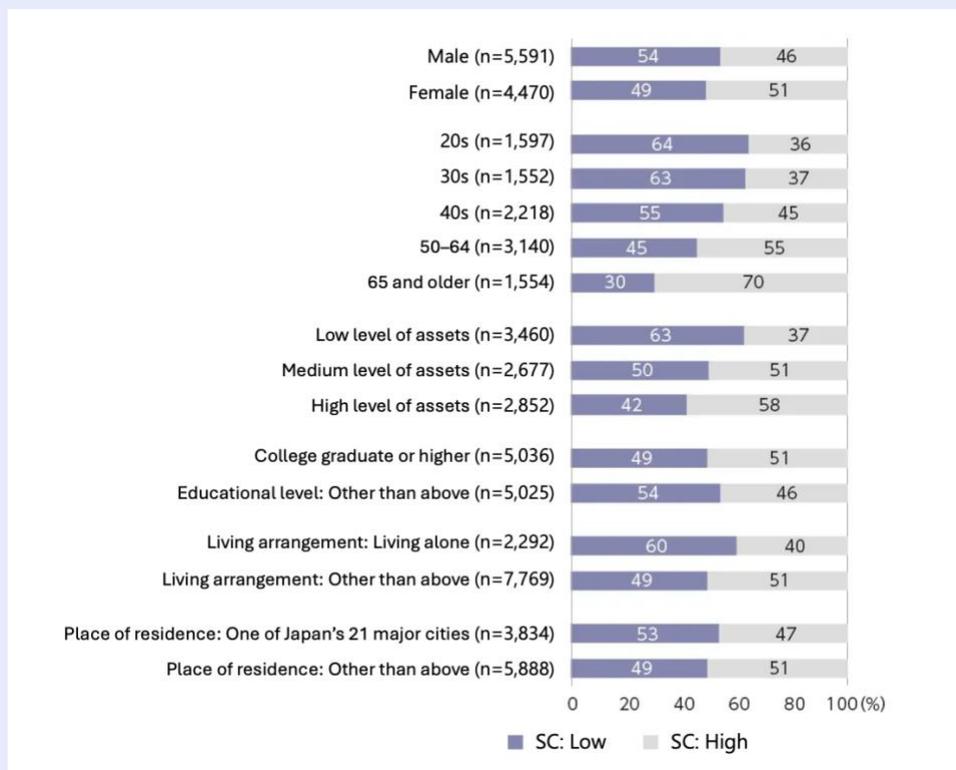
3. Contributing to and cooperating with the community

- “Community resources (things shared and used by everyone in the community) should be protected by everyone in the community working together”

Based on the responses, an indicator measuring the level of awareness of social capital was calculated. Those scoring below the median were classified as having a low level of awareness of social capital, and those scoring above the median were classified as having a high level of awareness of social capital. Following this, the relationship between different individual characteristics and the level of awareness of social capital was examined (Note 5). In addition, we examined the relationship between differences in level of awareness of social capital and utilization of civil sector support methods following the Noto Peninsula earthquake.

First, our examination of the relationship between individual characteristics and the level of awareness of social capital identified the following as characteristics of individuals with a low level of awareness of social capital: being male, being young, possessing a lower level of household financial assets, not having a university degree, living alone, and residing in one of Japan’s 21 major cities (Figure 3) (Note 6).

Figure 3 Relationship between individual characteristics and level of awareness of social capital

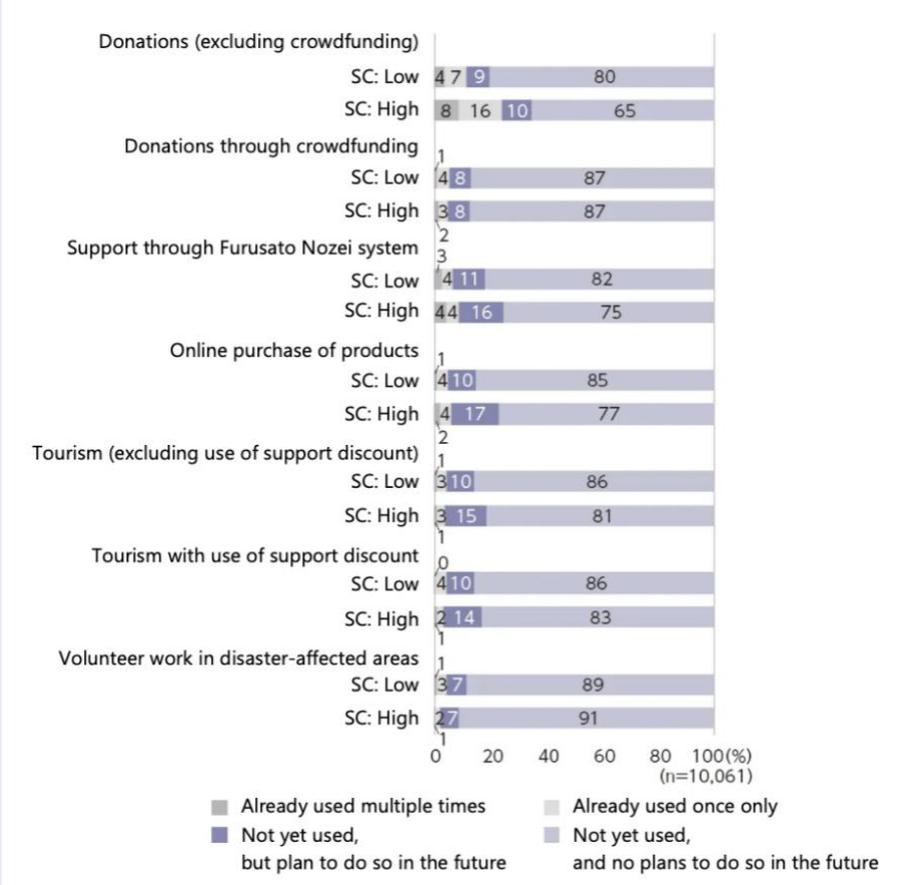


(Note) SC refers to level of awareness of social capital.

Next, when we looked at the percentage of respondents who had already utilized at least one of the seven types of civil sector disaster recovery support methods, we found that 33% of those with a high level of awareness of social capital had done so, compared to 19% of those with a low level of awareness of social capital. This shows that people with a high level of awareness of social capital tend to be more active in utilizing civil sector disaster recovery support methods.

Furthermore, when looking at utilization rates by type of support, we see that individuals with a high level of awareness of social capital display significantly higher utilization rates for donations than those with a low level of awareness (Figure 4). On the other hand, there was little difference in utilization rates for forms of support other than donations excluding crowdfunding between individuals with high and low levels of awareness of social capital.

Figure 4: Level of awareness of social capital and utilization of civil sector support methods



This indicates that the level of awareness of social capital is strongly associated with traditional donations but weakly associated with new forms of support. The reason for this is that the provision of support itself is not the sole objective of such support methods as Furusato Nozei donations and online product purchases. Therefore, in order to realize more active civil sector support, it will be necessary not only to foster awareness of social capital to encourage traditional donation behavior but also to adopt support methods that benefit the individual and to establish an environment that facilitates utilization of new support methods through the use of digital technology.

3. How Should We Promote Civil Sector Disaster Recovery Support?

As large-scale disasters become more frequent, it is inevitable that the fiscal resources available

for disaster recovery support will become increasingly constrained in the future. Against this background, promoting civil sector support and realizing its entrenchment throughout society can enable us to build a country that is resilient to disasters. The following policy implications can be drawn from the trends in civil sector support following the Noto Peninsula earthquake discussed above.

First, it will be important to diversify the forms of civil sector support. Providing a wide range of tools and mechanisms for multifaceted civil sector support will enable the involvement of a diverse range of people. For example, crowdfunding has great potential for expanding the user base for civil sector support by making it easy to provide support through digital means. In addition, with the further advancement of the digital economy, it is likely that civil sector support will become more active in ways that involve more citizens.

Second, institutional design that balances the pursuit of self-interest and social contribution will be necessary. In particular, people with a low level of awareness of social capital, such as young people, people living alone, and residents of large cities, tend to be reluctant to utilize traditional donation-based support. In order to promote voluntary utilization of other disaster recovery support methods among these groups, it will be effective to provide incentives that also benefit them. For example, in the case of disaster relief utilizing the Furusato Nozei system, increasing the appeal of the “thank-you gifts” offered in return could stimulate interest in providing support. In addition, utilizing travel discount systems to enable indirect support through tourism could reduce the psychological and financial burden of providing support.

Fostering social capital will be essential to increasing the momentum of donations from the civil sector. In particular, from the perspective of long-term recovery, it will be vital to nurture relationships of trust and a culture of mutual aid within local communities. Efforts to enhance social capital through education for children and awareness-raising activities for local residents, centering on local governments, will be required. On the other hand, fostering social capital will take time. To promote the expansion of civil sector support in disasters, in addition to striving to improve social capital, it will be necessary to advance institutional design that balances the pursuit of self-interest with social contribution, and to establish mechanisms that encourage the voluntary utilization of a variety of methods of providing support by a diverse range of people.

References

- Noy, I., Okubo, T., Strobl, E., & Tveit, T., (2023). The fiscal costs of earthquakes in Japan. *International Tax and Public Finance*, 30(5), 1225-1250.
- Okubo, T and Noy, I., (2026). Bonding social capital, disaster experience, and post-disaster giving in Japan. *Disasters*, forthcoming. <https://doi.org/10.1111/disa.70045>
- Putnam, R., Leonardi, R., and Nanetti, R. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, N.J.: Princeton University Press.

Notes

* The survey and data analysis were conducted by the author, together with Atsushi Inoue and Kozue Sekijima, NIRA Associate Senior Fellows, and Hinako Suzuki, NIRA Research Coordinator & Research Fellow.

** This system allows taxpayers to claim a deduction from their income tax and individual resident tax on the portion of their donation exceeding 2,000 yen when they make a donation to a municipality of their choosing.

[1] Recent studies have pointed out that even when the national government implements adequate recovery measures, biases tend to emerge in the allocation of budget resources by local governments following a natural disaster. In particular, there is a reported tendency toward a decline in the proportion of resources allocated to education and culture in disaster-affected municipalities (Noy, et al., 2023).

[2] For an overview of the Questionnaire Survey on the Effects of the Spread of COVID 19 on Telework-based Work Styles, Lifestyle, and Awareness, please refer to the following link (in Japanese): www.nira.or.jp/paper/data/2022/26.html (Toshihiro Okubo and NIRA, 2022).

[3] Note that similar results were obtained when analyzing data that included responses from unemployed respondents and respondents in their teens.

[4] The percentage of employed respondents (including those in their teens) who had participated in disaster-related volunteer activities in this survey was 3.3%. Applying this percentage to the total number of employed persons in Japan as of June 2024 (68.22 million according to the Ministry of Internal Affairs and Communications' Labour Force Survey), the estimated population of volunteers for disaster recovery activities is approximately 2.25 million. According to the Ministry of Internal Affairs and Communications' Basic Survey on Social Life, the estimated population of employed volunteers for disaster recovery-related activities aged 15 and older was 3.011 million in 2011 (the year of the Great East Japan Earthquake), 1.175 million in 2016 (the year of the Kumamoto Earthquake), and 658,000 in 2021. The validity of the rate of participation in volunteer disaster recovery-related activities in this survey will need to be confirmed by future government statistical surveys: however, it is considered that the figures do not differ significantly when compared to the government's estimated population of volunteers in years when major earthquakes occurred.

[5] Indicators for measuring the level of awareness of social capital were formulated using two-stage principal component analysis. First, principal component analysis was performed on the responses to two questions related to trustworthiness and two questions related to reciprocity, and the first principal components of trust and reciprocity were isolated and standardized. Following this,

principal component analysis was performed using the standardized first principal components of trustworthiness and reciprocity and standardized responses regarding contribution to and cooperation with the community, and the first principal component was used as a variable indicating the level of awareness of social capital.

[6] A dummy variable indicating a low level of awareness of social capital was used in a multiple regression analysis with gender, age group, financial assets, educational attainment, living arrangements, and place of residence as explanatory variables. Similar trends were observed for each variable, and statistically significant relationships were confirmed.



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