

Social capital of disaster-affected communities in post-disaster conditions: A case study of the Cianjur Earthquake, West Java, Indonesia, 2022

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Abstract

This study explores the conditions of social capital on the survivors of the 2022 earthquake in Cianjur, Indonesia. Cibulakan Village, Cugenang Sub-district, Cianjur was chosen for this study because it was one of the most severely affected villages by the earthquake with the highest number of fatalities in Cianjur Regency. This study discusses three forms of social capital: bonding, bridging and linking and their conditions in Cibulakan Village after the earthquake. The research used a qualitative approach and method. The data analysis process uses an interactive analysis model by Miles which divides the steps of data analysis into several parts: data collection, data condensation through open coding, axial coding and selective coding, data display and conclusion.

The results showed that the earthquake triggered changes in bonding, bridging and linking social capital in both positive and negative directions. Therefore, it is necessary to pay attention to the condition and role of social capital in post-disaster communities, given that some forms of social capital lead to positive post-disaster and can be utilized after a disaster. The government and other stakeholders should consider the role of social capital in disaster-affected communities during the emergency response and recovery process to support more sustainable recovery in communities.

Keywords: Disaster, Social Capital, Disaster Management.

Introduction

The entire community is exposed to the risk of emergencies, disasters and hazards³³. Disasters are characterized by sudden onset, lack of preparedness, unexpected magnitude and damage and the inability of the system to cope¹⁶. The combination of hazard, vulnerability and the inability to reduce the negative potential of risk can result in a disaster³¹. Disaster events are prone to cause a large number of casualties². Natural disasters not only take lives and destroy properties but also shatter the social order and destroy the trust that affected communities need²⁹. The inability of a system to plan, respond and adapt to hazards and disasters can lead to social vulnerability⁹.

The concept of resilience is constantly evolving to improve individual and collective capacity to cope with disasters¹³. After a disaster, returning to normal condition is key to disaster victim recovery²⁴. The inability of a system to plan for, respond to and adapt to hazards can lead to social vulnerability, making it important to engage communities to support social resilience in responding to disasters and minimizing vulnerability⁹. In the context of natural disasters, creative thinking abilities prove invaluable in developing effective disaster management strategies, minimizing the impact of disasters and improving overall disaster response²³. Social capital is considered important for social resilience including the resilience of local communities⁵. Community resilience is enhanced by the social capital that emerges from increased connections and networks related to community participation.

Putnam defined social capital as an enabler of collective action consisting of social networks, norms and trust that encourage people to mobilize more effectively together to achieve common goals¹². No community can be completely safe from natural hazards and disasters⁸. So maintaining and improving community adaptive capacity is a potential and sustainable solution⁷. In Leonardo Nainggolan et al's¹¹ study, It was discovered that in the recovery after the Sinabung eruption in Indonesia, social recovery conducted by the Government through community development and post-disaster community-based training was limited. Indonesia has the fifth largest population globally, with 270.20 million people in the 2020 census²⁶, making it crucial to develop community-based disaster management.

In fact, community involvement in disaster risk reduction has become the core of participatory emergency management²⁷. So it is important to encourage community preparedness and participation to reduce the risk of victims due to disasters through social capital owned by disaster-affected communities. This study aims to describe the condition of social capital in the post-earthquake community of Cianjur as an illustration of the potential changes in the condition of community social capital after being affected by the disaster.

Social Capital: Social capital refers to features of social organization such as trust, norms and networks that can improve community conditions by facilitating collective action³. Social capital determines how social actors connect with each other. Therefore, social capital is a relationship

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where people can share values, norms, trust, information, knowledge and resources through social networks²⁸. There are three types of social capital identified as crucial for networking across: i.e. bonding social capital, bridging social capital and linking social capital³.

Bonding refers to relationships between individuals who share a social identity such as connections within a family or community¹⁰. Bonding is a social resource such as personal/family connections, ethnic-based networks and shared linguistic, cultural and religious understandings that helps build trust and cohesion, within a particular group⁶. This type of relationship is usually found in close-knit communities and is determined by the similarities in demographic characteristics, attitudes and the availability of resources in community³.

Bridging social capital describes the capacity of groups and individuals to establish relationships with those who may have different backgrounds across different communities. These horizontal connections have the potential to lead to the formation of new relationships³. Meanwhile, linking social capital describes the ability of groups and individuals to engage in vertical relationships with external institutions or organizations by utilizing available resources³. Linking social capital can be seen as a relationship that crosses hierarchical boundaries and enables communication between citizens and government³.

Social Capital and Community Resilience: Community resilience is the embedded social capital, physical capital and patterns of interdependence that provide the potential to recover, maintain adaptability and support regrowth, thus social capital is considered as an important factor in community resilience¹⁹. Understanding how the characteristics and capabilities of each network, can strengthen resilience and crisis management³⁰. In addition, various studies show the importance of social capital and its implications for disaster recovery. There are various studies that explore how social capital can drive disaster recovery and the potential of social capital to be used to support resilience¹. Study about relationship between disasters and social capital showed that social capital has a positive impact on the disaster recovery process as a central mechanism for communities to recover¹⁵.

Many studies have shown that higher social capital can lead to better recovery outcomes, increased access to support and improved psychosocial health⁶. In the case of Mariso district, the community was able to change social assistance due to the existence of collective action carried out by the community affected²⁵.

Many studies have addressed the three forms of social capital and their interactions as contributing factors to increased resilience in disaster situations³⁰. In the rapid response to a crisis, bonding social capital is often the first form of social capital that is available to disaster-affected

communities and influential for resilience. Bridging and linking social capital are also very important in an ongoing crisis in complementary ways³⁰. In the aftermath of a natural disaster, social capital allows people to have easier access to resources and information. So, it can be said that social capital is an important factor that can increase social resilience when dealing with natural disasters²⁸. This indicates that social capital has a positive effect on disaster management and recovery.

Case Study - Cianjur Earthquake: As reported by Pusat Krisis Kesehatan²¹ on Monday, November 21, 2022, at 1:21 p.m., an earthquake with a magnitude of 5.6 occurred with a depth of 10 km Southwest of Cianjur Regency. The epicenter itself was located 15 km Northeast of Sukabumi City, West Java, 39 km Southeast of Bogor City, 63 km Northwest of Bandung, West Java and 79 km Southeast of Jakarta. In an analysis issued by the Indonesian Meteorology, Climatology and Geophysics Agency (BMKG), it was stated that there were 140 aftershocks with magnitudes of 1.2-4.2 and an average depth of about 10 km³². The Indonesian National Disaster Management Agency (BNPB) stated that the total death toll from this earthquake reached 327 people and 13 people were missing.

Furthermore, there were 108 people with serious injuries and the total number of refugees amounted to 108,720 people⁴. The most recent, in the Cianjur Post-Earthquake Rehabilitation and Reconstruction Plan (R3P) Draft Document, released by the Cianjur Regency Government in 2023, showed that the damage was spread across 27 sub-districts with Cugenang sub-district being the most severely damaged²⁰.

Material and Methods

This research is located in Cibulakan village, Cugenang district, Cianjur, West Java. Cibulakan village was chosen because it was one of the villages most severely affected by the 2022 Cianjur earthquake. This research uses qualitative approaches and methods and is descriptive research.

Raco and Semiawan²² also stated that in qualitative methods, the context and situation of the subject revealed in the research must be described extensively and naturally with bottom-up analysis.

Neuman¹⁷ stated that descriptive research describes a specific picture related to a situation, or social condition. This research involved 16 informants representing the Cibulakan village community.

In this study, data analysis used the interactive analysis model as described by Miles et al¹⁴ who divided the steps of data analysis with several parts, namely data collection, data condensation through open coding, axial coding and selective coding. Then proceed with data display and conclude.

Table 1
Criteria of Informants

Information	Representativeness	Total
Information of Cibulakan village	Cibulakan Village Community Leaders	1
Bonding capital of Cibulakan Village community	Head of RT and Cibulakan Village Community	2
Bridging bridging social capital of Cibulakan Village community	Head of RW and Community leaders of Cibulakan	2
Linking social capital of Cibulakan Village community	Village Head and Community Leaders of Cibulakan Village	2
The recovery plan in Cibulakan village	BPBD Cianjur	1
The recovery process in Cibulakan	Cibulakan Village Community	2
Weaknesses of the Cibulakan village recovery	NGOs and communities involved in recovery	
Community involvement and participation in recovery	BPBD Cianjur, community	2
The utilization of social capital in the recovery process of Cibulakan Village	Village Head and Community Leaders Cibulakan	1
Recognizing the obstacles related to community engagement and the utilization of social capital for recovery	Community, Cibulakan community leaders BPBD Cianjur	3
Total		16

Source: Primary data processed by researchers (2023)

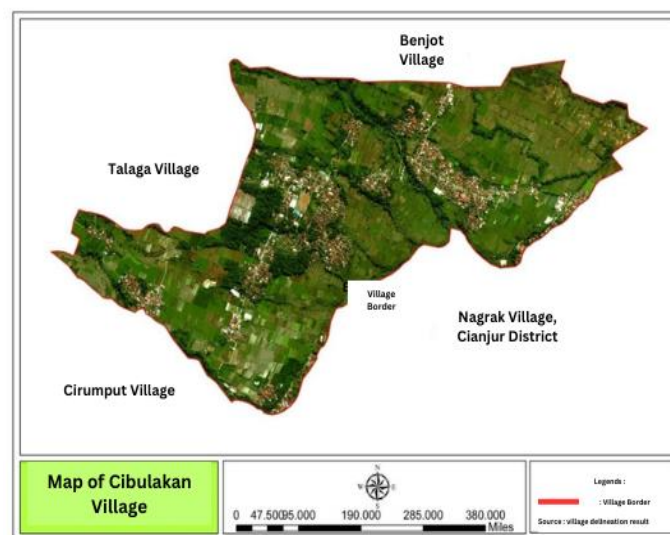


Figure 1. Map of Cibulakan Village
(Source : Cibulakan Village Profile, 2022)

Results

The social capital that can be identified and owned by the community affected by the 2022 Cianjur earthquake, specifically in the Cibulakan village community, is divided into three categories i.e. bonding, bridging and linking social capital. These three social capitals can be identified in the Cibulakan village community in the form of relationships that exist in the community, both before and after the earthquake. The three categories of social capital take the form of relationships and ties between families, relatives, neighbors and the local Government or other institutions.

Bonding Social Capital on Disaster-Affected Communities in Cibulakan Village: Bonding social capital owned by the Cibulakan village community is manifested in the form of relationships and trust and can be divided into

social relationships, mutual cooperation conditions and inter-family relationships in Cibulakan village.

Decreasing Condition of Social Relations in Cibulakan Village: One form of bonding social capital that can be identified is the social relations of the community in Cibulakan village. The social relations of the Cibulakan village community can be categorized as quite good, especially before the earthquake, which was indicated by the community's good relations and mutual assistance.

The condition of social relations in Cibulakan village is relatively close because most of problems and needs in Cibulakan village tend to be resolved together by the community members.

"...Alhamdulillah, after the earthquake, the people here are still in good terms, the friendship still maintained, especially in conditions like this, so helping each other is a must in the community (Mr. A, Head of RT 04/05)."

Although in general the social relations of the Cibulakan community is relatively good, when considered in more detail, there are changes in the condition of social relations after the earthquake, such as decrease in the sense of care in the Cibulakan community members. The loosening of social relations in the Cibulakan community began when the village entered a transition period from post-disaster to recovery.

"Indeed the community's mentality has not really recovered, but it is already better than when the earthquake was severe, the community was very jealous of each other. after the earthquake, we were united, but in the middle of the disaster, the community was split and disconnected because of the effects of the distribution of assistance."

The decrease in the sense of belonging among the Cibulakan community is partly due to the fact that each community focuses on its own recovery. If we are told to gather and make water channels, it is a bit difficult. After this disaster there was a slight change, so the focus was on each village. Even after the disaster, the posts became their own posts, so the community was not united. The earthquake also caused a decrease in the level of trust in the community due to the emergence of prejudice among the community, especially related to the distribution of aid during the recovery process.

Besides reducing the level of trust, the earthquake also decreased the frequency of community activities due to lost and damaged facilities. But now, the social relations of the Cibulakan community are gradually recovering. One of the reasons why it is difficult for the social relations to recover is because there is still an underlying sense of jealousy in the community.

Loosening Family Relationships in Cibulakan Village:

Another form of bonding social capital that can be identified is relationships between families in the Cibulakan village community. The relationships between families in Cibulakan village are relatively good. However, the earthquake had an impact on the relationships between families in the Cibulakan community. This was marked by the emergence of conflicts between families which included feelings of jealousy related to the distribution of assistance and conflicts related to land ownership boundaries during the process of rebuilding houses. These conditions eventually led to a decreased sense of trust between families in Cibulakan village. The lack of trust in Cibulakan village has led to the fact that families in Cibulakan have not been able to rely on each other, both in their daily lives and in their recovery.

The condition of social relations in the Cibulakan village community is considered good. However, there were

changes in social relations and relationships between families in the Cibulakan village community due to the Cianjur earthquake in 2022 which was indicated by a decrease in trust in the community, as well as a decrease in community participation. In addition, there were also changes related to inter-family relationships in the Cibulakan village community. Even so, the condition of social relations in Cibulakan has begun to recover, although it is still not optimal.

Bridging Social Capital of Disaster-Affected Communities:

In Cibulakan village, bridging social capital can be identified in the form of relationships that exist between relatives and neighbors in the community as well as in the relationship between the Cibulakan village community and other groups around the village.

Relationship between Neighbors and Relatives in Cibulakan Village:

The relationship between neighbors and relatives in Cibulakan Village is considered good, marked by a high level of interaction among neighbors in Cibulakan village. Furthermore, it is known that although there are frictions among the community, the relationship between neighbors in Cibulakan village is still relatively good.

This is also supported by information from community leaders who stated that since the earthquake, relationships between relatives in Cibulakan Village has improved. This is indicated by the establishment of good relations between relatives after the earthquake.

Based on the explanation above, it is known that the condition of relationships between neighbors and relatives is relatively good. The condition of relationships that had been well established before the disaster caused relationships between relatives and neighbors in Cibulakan village to become stronger after being affected by the earthquake.

Relationships between Cibulakan Village Community and Other Groups:

Another form of bridging social capital in the Cibulakan village community relates to the condition of the Cibulakan community's relationship with other groups, which is the relationship with neighboring villages and surrounding community groups.

The condition of the Cibulakan community's relationship with the surrounding villages is relatively good which is indicated by frequent interactions. However, this good relationship cannot be categorized as strong, marked by the lack of joint activities and participation between village communities.

Although it is difficult to encourage community participation in inter-village activities, but inter-village communities often help each other such as provided the equipment needed for village's activities. This is reinforced by the fact that most of the community members work as farmers.

Another form of bridging social capital in Cibulakan village relates to the relationship between community groups in Cibulakan. There are several community groups in Cibulakan, including Karang Taruna, Bumdes and the Farmer Group Association (Gapoktan). However, after the earthquake, these community groups became inactive.

One form of decreased activity that can be identified relates to the decreased participation of youth organization members and only focuses on waste management, which still has limited participation.

Based on this explanation, it is known that the relationships between neighboring villagers and groups in the Cibulakan community tend to be good and active. However, after the earthquake, there was a decrease in activity in these community groups and it took time for these groups to recover.

Linking Social Capital of Disaster-Affected Communities in Cibulakan Village: In Cibulakan village, the linking social capital that can be identified takes the form of the relationship between the Cibulakan village community and the local Government and institutions around village.

Relationship between Cibulakan Village Community and Local Government: The findings show that there is an intimate relationship between the people of Cibulakan and the local Government. This can be identified from the interactions that occur between the Cibulakan villagers and the local Government. The proactive attitude of the village head also influences the relationship between the Cibulakan community and the local Government.

However, after the earthquake, the support provided by the village government for community activities has decreased. Other than having a good relationship with the village government, the Cibulakan community also had a good relationship with the local Government including the local BPBD, Babinsa and BOD. This relationship is enhanced by post-disaster conditions that encourage intense interaction between the community and the local government.

However, the strongest interaction in the community was with the head of the RT and RW where the community lived. This is due to the complexity of the bureaucracy and community's lack of understanding regarding administrative matters. Based on the explanation, there is a strong relationship between the Cibulakan community and the local Government, which is indicated by the intense coordination, which encourages the establishment of good relations between the Cibulakan community and the village government.

Relationship between Cibulakan Village Community and Local Institutions: Another linking social capital in Cibulakan village relates to the community's relationship

with local institutions. Since before the earthquake, there were several institutions that were active in Cibulakan village and after the earthquake, these institutions became even more active. These include NGOs, local communities and RETANA, which was formed by the local BPBD.

The Cibulakan community also has a relationship with the local political. Although the relationship is quite good, the relationship is only limited to certain members of the community. The good relations between some communities and political parties eventually influenced the process of distributing post-earthquake assistance. Based on the findings, it was discovered that long before the earthquake, there had been good relations between the Cibulakan community and local institutions. This positive relationship increased after Cibulakan village was affected by the earthquake and influenced the process of providing assistance after the earthquake.

Discussion

This research offers an overview of the condition of social capital in the survivors of the 2022 earthquake in Cianjur, Indonesia. Cibulakan village in Cugenang sub-district, Cianjur was chosen for this research because it was one of the most affected villages by the earthquake, with the highest number of death victims. This study discusses three forms of social capital, bonding, bridging and linking and their conditions in Cibulakan village after the earthquake. The findings show that the condition of bonding social capital in the Cibulakan community is manifested in the form of social relations, mutual cooperation conditions and relationships between families.

In general, social relations in the Cibulakan village community were categorized as quite good, especially before the earthquake. However, there was a change in the social relations of the Cibulakan community after the earthquake, which was marked by a decrease in the community's sense of care for one another, especially during the transition process from the emergency response period to the recovery stage. This is due to the fact that the Cibulakan community is focusing on their own recovery, so their participation has decreased.

The earthquake also caused prejudice among the community, especially regarding the distribution of recovery assistance and caused a reduction in trust and community activities. The earthquake also affected relationships between families in the Cibulakan community. This was marked by the emergence of conflicts between families due to feelings of jealousy related to the distribution of post-earthquake assistance and conflicts related to land ownership boundaries. These conflicts eventually reduced trust between families in the Cibulakan community and made it difficult for families in Cibulakan village to rely on each other in their daily activities and the recovery process. Nevertheless, the condition of the community's social relations has begun to improve, although it is not yet optimal.

The condition of bridging social capital in the Cibulakan community comes in the form of the community's relationship with relatives and neighbors as well as other groups in Cibulakan village. Although there is friction in the community, the relationship between relatives and neighbors in Cibulakan village is relatively good, marked by high interaction between neighbors. Relationships between relatives and neighbors in Cibulakan village were also identified to have improved after the earthquake due to the establishment of friendships between relatives after the earthquake.

In addition, the condition of the community's relationships with other groups including the neighboring villages and other institutions, can be categorized as good, but not yet powerful. This is due to the lack of participation and joint activities between the Cibulakan village community and neighboring villages. Although community participation is still minimal, the community between each village often helps each other when there is an activity.

The relationship between the Cibulakan community and community groups, such as Karang Taruna, Bumdes and the Gapokotan also decreased after the earthquake because the participation of members had decreased. This shows that the condition of the bridging social capital of the Cibulakan village community has changed after the earthquake. Before the earthquake, bridging social capital was strong and active, but has decreased after being affected by the earthquake and requires time to recover to its previous condition.

In addition, the condition of social capital linking in Cibulakan village can be identified in form of the community's relationship with the local Government and institutions around Cibulakan village. The relationship between the Cibulakan community and the local government is considered good and has become stronger after the disaster. This is indicated by the interaction and coordination that became stronger and more intense during the recovery process. Although the relationship has strengthened, the local Government's support for activities in Cibulakan village has decreased after the earthquake. Besides having a good relationship with the village government, the Cibulakan community also had a good relationship with the local government after the disaster including the local BPBD, Babinsa and BOD.

The relationship was supported by post-disaster conditions that encouraged intense interaction between the community and the local government. However, the strongest relationship between the Cibulakan community is with the local RT and RW, especially in dealing with administrative and bureaucratic needs during disaster recovery.

Furthermore, the relationship between the Cibulakan village community and local institutions such as NGOs, local organizations and the Retana formed by the local BPBD was also considered good. The earthquake made those

institutions more active and closer to the Cibulakan community.

In addition, there are also various political parties in Cibulakan that have good relations with the community. Although the relationship is quite good, the relationship is limited to certain community members. The good relations between some communities and political parties eventually affected the process of distributing post-earthquake assistance which was often given to people with certain connections. The post-disaster and recovery conditions eventually led to the stronger linking social capital in the Cibulakan village community which affected the process of providing post-earthquake assistance.

Conclusion

This research discusses three forms of social capital, bonding, bridging and linking and their conditions in Cibulakan village after the earthquake. In general, bonding social capital in Cibulakan village can be categorized as quite good, especially before the earthquake. However, there was a change in the condition of the social relations of the Cibulakan community after the earthquake which was marked by a decrease in the sense of care and trust between the people of Cibulakan village, especially during the transition process from the emergency response period to the recovery stage which had the potential to cause conflict and making it difficult for the community to rely on each other in the recovery process.

Relationships between relatives and neighbors in Cibulakan Village were also identified as improving in the aftermath of the earthquake due to the establishment of friendships between relatives during the recovery process. However, after the earthquake, there was a decrease in the activity of community groups such as youth organizations, village enterprises and Gapoktan in Cibulakan village due to the lack of community participation. Therefore, although it has strengthened, the condition of bridging social capital has also decreased and it will take time to recover.

The condition of linking social capital in the Cibulakan village community also underwent a positive change. This was marked by the stronger relationship between the Cibulakan village community and the local Government and surrounding institutions especially during the post-earthquake recovery process because it requires intense coordination and interaction. In addition, the community's relationship with local political parties is also categorized as good but needs to be considered. This is because the relationship with political parties only applies to certain communities and eventually affects the process of distributing post-earthquake assistance, potentially leading to conflict. The Cianjur earthquake in 2022 eventually encouraged the strengthening of social capital linking in the Cibulakan village community which influenced the process of providing post-earthquake assistance.

This study has limitations since it only describes the condition of social capital from one village affected by the 2022 Cianjur earthquake. However, the qualitative approach that was used is expected to provide a detailed description of the social capital conditions of the Cianjur 2022 earthquake survivors in Cibulakan village. Based on the analysis, this study suggests that the Government, institutions or other parties involved in the recovery process should begin to maximize the role of social capital owned by disaster survivors. This is crucial considering that until now, post-disaster recovery has often focused on physical and infrastructure recovery and has not fully considered the local potential in the community.

In fact, disaster affected communities are able to rise up with their potential independently. Furthermore, the results also show that there is a positive movement in the social capital condition of the disaster-affected communities. Therefore, local and central Governments and other stakeholders should consider the role of social capital in disaster-affected communities during the emergency response and recovery process to support a more sustainable recovery in disaster-affected communities.

Acknowledgement

This research was supported by Pelaksanaan Program Bantuan Operasional Perguruan Tinggi Negeri Program Penelitian Tahun Anggaran 2023, Direktorat Riset, Teknologi, dan Pengabdian kepada Masyarakat Direktorat Jenderal Pendidikan Tinggi, Riset, dan Teknologi Kementerian Pendidikan, Kebudayaan, Riset dan Teknologi, Indonesia NKB-1171/UIN2.RST/HKPN.05.00/2023.

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(Received 21st November 2023, accepted 24th January 2024)