

THE CONCEPT OF SOCIAL CAPITAL IN DISASTER MANAGEMENT

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Abstract : *This paper elucidates the concept of social capital of bonding, bridging and linking in disaster management. The elements in social capital of social cohesion and social networking are delineated and simultaneously the elements of trust to top management, participation and collaboration in disaster preparedness are elaborated.*

Keywords: *Social Capital, Disaster, Disaster Management, Emergency Team, Preparedness*

Introduction

The concept of social capital has been studied in the fields of sociology and political science (Cloete, 2014). The concept has been used as a principal theory which covers multitude of relationships and unite related concepts such as social interaction, trust, and share value (Carlos & Pinho, 2013). In social science, the concept of social capital has been formed by the work of Pierre Bourdieu (1985), James Coleman (1988, 1990) and Robert Putnam (1993, 2000)(Cloete, 2014). Social capital is an individual investments and has a various functions of relationship relate to bonding, bridging and linking (Mulunga & Yazdanifard, 2014). Requena, Ortega, & Villaverde (2012) viewed social capital as social life with network relationships that can be explored and have benefits from the resources in the relationships. They argued that with social life, network, norms and trust can make individual to work together to achieve the shared objectives effectively (Cloete, 2014). Social capital utilization starts with bonding where was based on sense of common identity for instance, family, friends and people within same community who share same culture, environment and also ethnicity especially in the community (Mathbor, 2007). Among other elements in social capital are social cohesion, networking, communication and interaction between and among members, effective

coordination, collaboration of members activities and leadership qualities that attributes to bonding (Mathbor, 2007). While social capital of bridging is the relationship to the other community in society, beyond shared sense of identity where the group can identify the needs and joint collaboration efforts needed (Mathbor, 2007). According to Brian (2007), linkages of social capital is to connect the people or group upper and lower of social ladder.

Researchers have revealed network relationships such as bonding, bridging and linking that are developed among different elements of communities, the government and other organizations, have generally assisted in mitigating the consequences of disasters. The social capital of network relationship describes how the networks and resources are essential to people through their connections to others (Aldrich, 2012). Their effectiveness in working together has proved crucial in mobilizing a group of people resources, expertise, professionals and volunteers, in preparedness and recovery work that take place during and also in afterwards. According to Koh and Cadigan (2008), Kawachi and colleagues noted that social capital can be conceptualized in social cohesion viewed broadly and in social network by the individuals' access to resources.

Social network focused on group ties that affect individual and their relationships and better for individual to have many connections in variety network rather than a single network. (Bruhn, 2009). The concept of social capital, social cohesion and social network are relevance in disasters and emergencies. Individual with social network can have better access to resources that can support the family, and other community are able to cope and avoid the outcome of the disaster and therefore the community with social cohesion is able to prepare and recover from disaster (Koh & Cadigan, 2008). For such instance, Hurricane Katrina tragedy has been given great attention in which without network and resources gives chaos on the disaster phase of preparedness and recovery. Thus, there is no doubt that social capital can influence emergency preparedness outcome in every level whether in individual, community, state, country or globally (Koh & Cadigan, 2008). Chan et al. (2007) argued that social capital theory was from the definition of social cohesion. According to Smith and Polanyi (2008) social network, norm of reciprocity and trustworthiness have connections among individual from social cohesion. Social capital concerned more on individual actions and behaviour, and more traditional of social cohesion. Cloete (2014) noted that combination dimensions of social capital that are civic participation, associational activities and social network with definition of social cohesion can show the cohesiveness of the relationship at different levels of the society.

Definition and Concepts of Social Capital

The concept of social capital has drawn attention to the causes and consequences of the human interaction and relationship to the individual and society (Tzanakis, 2013). According to Portes (1998) and Quibria (2003), the concept was theorized by Durkheim, Marx, Weber and Tönnies. It is argued that Louis Hanifan was the first who used the term social capital in 1916 by most contemporary authors (Sanyal & Routray, 2016). Social capital regard as “good will, fellowship, mutual sympathy, and social intercourse among a group of individuals and families” (Louis Hanifan, 1916) that make up social unit (Aldrich & Meyer, 2015). Multiple disciplines have adopted social capital concept and broadly used in participation and involvement in groups that give a good implication to individual and community (Portes, 1998). Then, social capital was formulized with different ideologies and some common thread by three sociologies who were Bourdieu, Coleman and Putnam and thus, the integration of the concept becomes difficult (Tzanakis, 2013). Bourdieu (1985) defined social capital concept as “the aggregate of the actual

or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition”. While Coleman (1988) defined the social capital function, as “a variety of entities with two elements in common: they all consist of some aspect of social structures, and they facilitate certain action of actors, whether persons or corporate actors within the structure”. Putnam (1993) defined social capital as features of social organizations that ease the cooperation and action for benefit of each other for instances, networks, norms and trust. This definition later on focused on the role of social capital in generate benefits at the neighbourhood and community level, beyond individual level (Putnam, 1995, 2000). In Putnam (2000), he demonstrated the decline of social capital in an Americans play 10-pin bowling in his publication titled *Bowling Alone: The Collapse and Revival of American Community*. He argued that while Americans have becoming wealthier, the sense of community once led Americans has been shattered (Brian, 2007).

The definitions of all social capital mostly focus either on individual as viewed by Bourdieu or as collective as viewed by Putnam. However, individual approaches tends to consists of relationship with people they know and get benefit from those relationship, while collective approaches consist of combination of networks and cognitive such as shared norms and trust and seen as a form of collective resources (Scrivens & Smith, 2013). Lin (2001) gave in-depth definition of social capital which covered network of relationships where social capital is defined as resources embedded in one’s social network that can be utilized through ties in the network.

More social capital definition by Oxoby (2009) in rephrase the sentence of Dayton-Johnson (2003) where social capital as “an individual’s sacrifices of time, effort, consumption that made in an effort to promote cooperation with others”. In search for the accurate definition of social capital, Dasgupta (2010) suggested a lenient meaning of social capital. According to Klein (2011), Dasgupta defined social capital as “interpersonal networks where members develop and maintain trust in one another to keep their promises by the device of “mutual enforcement” of agreements”.

Social Capital in Disaster Management

Social capital plays an essential part in different phase of disaster and as resources embedded in each individual and in every community (Sanyal & Routray, 2016). The conceptual of social capital has been used in disaster research (Sadeka, Mohamad, Imam, Reza, & Manap, 2015) and little was used in preparedness as one of disaster management cycle. Mostly the concept was focused on social ties between individual, community, society that affect resources and support in recovery phase of survivors, and the way emergency and social services organization work side by side in disaster (Murphy, 2007; Nakagawa and Shaw 2004; Varda et al. 2009). There are variation concept of social capital, as understood, social capital as resources from social cohesion of individuals for collective action and collective benefit (Brune & Bossert, 2009; Lochner, Kawachi, & Kennedy, 1999; Ostrom, 2009; Reininger, Rahbar, Lee, Chen, Raja, et al., 2013) in achieving the objectives together. Mathbor (2007) notes that social capital is not constant and can be utilized in disaster management projects upon building of community and capacity of institution. According to Reininger et al. (2013) social capital is conceptualized in social connection or relationship. This conceptual were in term of members in the same network (bonding social capital) (Putnam, 1995; Putnam, 2000); across different network of an organization (bridging social capital)(Putnam, 1995; Putnam, 2000; Schuller, Baron, & Field, 2000) and connection with higher status and power (linking social capital) (Szreter &

Woolcock, 2004) as in Figure 1. Researchers show that social capital can be an outcome affected by disasters, and while disaster can reduce social capital (Varda et al. 2009). Therefore, the concept of social capital is used in preparedness of the disaster management cycle.

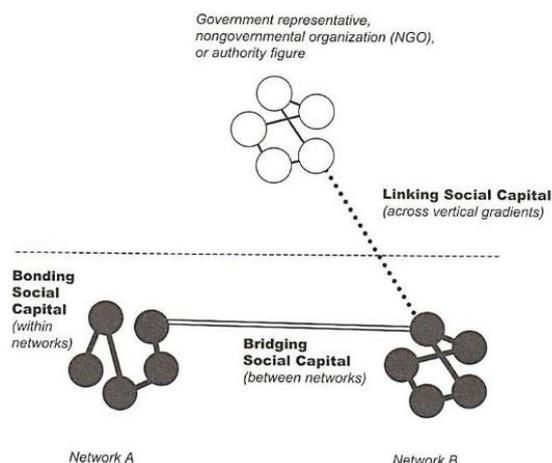


Figure 1: Bonding, bridging and linking in social capital (Aldrich, 2012).

Preparedness is an important element in disaster management cycle ensuring that being ready to responses to disaster events are timely, relevant, efficient and effective (Wisner, Blaikie, Cannon, & Davis, 2004). In the Hyogo Framework for disaster reduction, an attention was given in disaster preparedness at individual level and community level (United Nation, 2005). Preparedness activities aimed to improve in capabilities to cope with and improve response activities of disaster, thus gains social capital in mutual helps in working together along strengthening network ties (Sadeka et al., 2015). In the comment of Hurricane Katrina, lack of coordinated preparedness has been highlighted where bonding, bridging and linking between the emergency response agencies as one of the main weakness from the low level management in terms of human services (Mathbor, 2007). Nakagawa and Shaw's (2004) discovered from the study of Gujarat, India and Kobe, Japan that communities with high level social capital resources for instances high trust, norms, participation and network are essential for response and recovery in communities from disaster. While, research social capital on disaster preparedness and response has highlighted that social capital is a resource essential in disaster management (Aldrich, 2010, 2012; Buckland & Rahman, 1999; Pelling, 1998) and among that the study of social capital in disaster management in form of relation of community (Marumo, 2012) as in Figure 2. In the community perspective, Reininger, et al. (2013) has examined the relationship of social capital to disaster preparedness among low-income people. She and her colleagues found that there was a positive relationship between social capital and disaster preparedness.

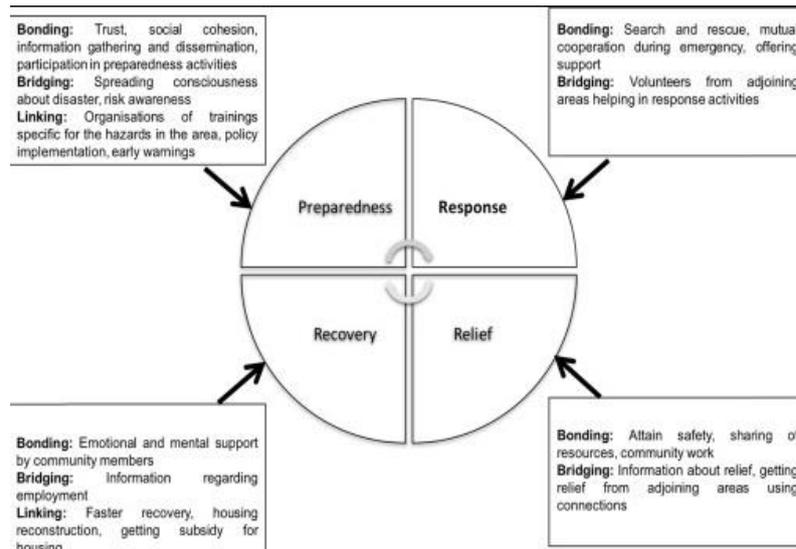


Figure 2: Social capital and disaster management cycle (Sanyal & Routray, 2016)

While from a disaster management perspective, evident that using social capital for instance social network, trust and normative behaviour can make disaster response more effectively (Neal and Phillips, 1995). Findings of (Andrews Brewer, 2010) show that social capital has associated with low unintentional fire death rate. The study supports that social capital is essential element in fire service outcomes and suggested political engagement and social trust elements to build social capital to decrease fire hazards casualty (Andrews Brewer, 2010). However, the effect of social capital will be different according to the components concept of the social capital (Andrews Brewer, 2010). Thus, the components of the social capital for disaster preparedness that are essential are trust to top management, participation and collaboration. These three components are elaborated as follows.

Trust to Top Management

Trust has been highlighted in several researches for instance trust as an outcome of effort and performance (Aryee, Budhwar, & Chen, 2002; Colquitt, Scott, & LePine, 2007), collaboration and teamwork (Sargent & Waters, 2004; Simons & Peterson, 2000), leadership effectiveness (Dirks & Ferrin, 2002; Gillespie & Mann, 2004) and as the main role in organization (Fulmer & Gelfand, 2012). Trust in the organization operates in multisystem and had been analysed at different level of interpersonal (individual), team and organization (Fulmer & Gelfand, 2012) and thus given attention at different levels in theoretical and empirical studies (Klein, Dansereau, & Hall, 1994). However, researches on trust are mostly focus at the individual level (Lewicki, Tomlinson, & Gillespie, 2006). According to Putnam (1995), trust as one of the features of social life in social capital besides network and norms that enable the participation to work together to accomplish the shared objectives (Brown, Gray, McHardy, & Taylor, 2015). In order to accomplish the shared objectives, trust in leader play most essential part in the team of the organization. Mayer, Davis, & Schoorman (1995) defined trust in leader as a willingness beyond control of subordinates to accept the vulnerability based on the leader behaviour and encouragement (Mayer et al., 1995; Dirks and Ferrin, 2002; Rousseau, Sitkin, Burt, & Camerer, 1998; Ng and Chua, 2006). While, employees who trust their leader or manager may engage and accept the leader's behaviour with expectation that the leader or manager treat them equitably and honestly (Brown et al., 2015).

Collaboration

In disaster management, collaboration in disaster operations needs involvement of many organizations and the operations involve multi-organizational, intergovernmental and inter-division or inter-sectoral response and recovery operations (Waugh & Streib, 2006). Thomson, Perry, & Miller (2009) noted that Wood (1991) defined collaboration as “a process in which autonomous or semi-autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions”. From this definition, Thomson et al. (2009) concluded that collaboration is a multidimensional, constructed by five key dimensions where two are from structural in nature, two in social capital and one involves agency that are governance, administration, mutuality, norms and organizational autonomy. While (Kamensky, Burlin, & Abramson, 2004) defined collaboration as the process where “people from different organizations produce something together through joint effort, resources, and decision making, and share ownership of the final product or service”.

According to Cha, Kim, Lee, & Bachrach (2015), collaboration has been pioneered by the work of Lawrence and Lorsch (1967) and had been recognized as a significant predictor of organizational effectiveness in operational contexts. Collaboration can be seen in terms of team-based organization where inter-team collaboration has been known as critical in the function with other organizational teams (Drach-Zahavy & Somech, 2010; Marks, DeChurch, Mathieu, Panzer, & Alonso, 2005; Yan & Louis, 1999). Inter-team collaboration is the team’s collaboration with other team in the organization, operate interdependently according to operational function, and achieve organization objectives (Hoegl & Proserpio, 2004; Kahn, 1996). Collaboration is one of essential approaches that has been emphasis in disaster management for instance, DHS created the National Reponse Plan (NRP) that emphasis on all-hazard, all-discipline and collaboration to emergency management in the existing plan (Kapucu & Garayev, 2011). While, FEMA in their National Response Framework highlighted the need to enhance the collaboration, coordination and communication among emergency management stakeholders (Kapucu, 2009).

Emergency management are mostly relies on a multiagency collaboration approach (Drabek, Tamminga, Kilijanek, & Adams, 1981) when dealing with unexpected nature, scope and severity of the disaster due to shortage of organization’s ability and competency in handling the situation forced them to collaborate with each other (Jordan, 2010). According to (Kapucu, 2012), multiagency collaborative approach is very much influenced by the nature and level of interdependency among the network of the organization and leaders. Besides, collaboration networks are the prime tools when dealing with emergencies (Ward & Wamsley, 2007). Furthermore, organization commitment are the highest in the collaborative approach, when the emergency management require the organization commitment in the use of resources, personnel and information to accomplished the mission (Kapucu, 2012).

Participation

Participation has been given a great attention in some development management in the past decade. Participation in the community can promote people’s self-confidence, self-awareness and be a control over issues in their life (Nampila, 2005). Aref (2011) noted that Levi & Litwin (1986) regard participation of the community as democratic system where the community is

able to involve and be responsible for their action, have the power to enhance in decision-making and share equally their success. Community participation makes the community responsible for their own self and one another, readiness in sharing and interacting with one another (Aref, Ma'rof, & Sarjit, 2010). According to Gautam (2010), active in participation among community members and networking can contribute preparation in contingency plans when it comes to emergencies. While, emergency management can build resilience and sustainable communities to face the disaster threat in increasing the participation of community members (Rood, 2012). Besides that, community participation means the community take part in decision-making, partnership in working and delineate the community structures (Chapman & Kirk, 2001). Thus, any agencies should motivate their members to participate in training and other activities to gain knowledge (Roosli & O'Brien, 2011) in the emergencies especially among the emergency teams.

Conclusions

All the forms of capital are important in disaster. Nevertheless, social capital is essential because this capital can instil preparedness among the agencies members. During the emergencies, the social capital is the main resources for the community since the emergency teams are expected to response effectively to eliminate or reduce any disaster hazards. In addition, social capital refers to social structure, relationship and network between and among individual/ actor as resources for individual action to achieve their goals. As such the concept of social capital with resources of trust, participation and collaboration can be combined with other resources handle the emergency condition especially among the community and emergency response teams. Therefore, the resources of social capital need to be explored in the disaster preparedness.

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References

- Aldrich, D. P. (2010). Fixing recovery: social capital in post-crisis resilience. *Journal of Homeland Security*, 6, 1-10.
- Aldrich, D. (2012). Social, not physical, infrastructure: the critical role of civil society in disaster recovery. *Disasters: The Journal of Disaster Studies, Policy and Management*, 36, 398-419.
- Aldrich, D. P., & Meyer, M. A. (2015). Social Capital and Community Resilience. *American Behavioral Scientist*, 59(2), 254–269.
- Andrews Brewer, G.A. (2010). Social Capital and Fire Service Performance: Evidence from the U.S. States. *Social Science Quarterly*, 91(2), 576–591.
- Aref, F., Ma'rof, R., & Sarjit, S. G. (2010). Community Capacity Building: A Review of its Implication in Tourism Development. *Journal of American Science*, 6(1), 172-180.
- Aref, F. (2011). Sense of community and participation for tourism development. *Life Science Journal*, 8(1), 20-25.
- Aryee, S., Budhwar, P. S., & Chen, Z. X. (2002). Trust as a mediator of the relationship between

- organizational justice and work outcomes: Test of a social exchange model. *Journal of Organizational Behavior*, 23, 267-285.
- Bourdieu, P. (1985). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education*. New York, NY: Greenwood.
- Brune, N. E., & Bossert, T. (2009). Building social capital in post-conflict communities: evidence from Nicaragua. *Social Science & Medicine*, 68, 885-893.
- Brian, K. (2007). *OECD Insights Human Capital How what you know shapes your life: How what you know shapes your life*. OECD publishing.
- Brown, S., Gray, D., McHardy, J., & Taylor, K. (2015). Employee trust and workplace performance. *Journal of Economic Behavior & Organization*, 116, 361-378.
- Bruhn, J. (2009). The concept of social cohesion. In *The group effect* (pp. 31-48). Springer, Boston, MA.
- Buckland, J., & Rahman, M. (1999). Community based disaster management during the 1997 Red River Flood in Canada. *Disasters*, 23, 174-191.
- Carlos, J., & Pinho, M.R. (2013). The role of relational social capital in examining exporter-intermediary relationships. *European Business Review*, 25(6), 553-570.
- Cha, J., Kim, Y., Lee, J.-Y., & Bachrach, D. G. (2015). Transformational leadership and inter-team collaboration: exploring the mediating role of teamwork quality and moderating role of team size. *Group & Organization Management*, 40(6), 715-743.
- Chan, J., To, H. & Chan, E. (2007). "Reconsidering social cohesion: developing a definition and analytical framework for empirical research", *Social Indicators Research*, 75, 273-302.
- Chapman, M., & Kirk, K. (2001). *Lessons for Community Capacity Building: A summary of the research evidence. A Research Review to Scottish Homes*. Scottish Homes, Edinburgh.
- Cloete, A. (2014). Social cohesion and social capital: Possible implications for the common good. *Verbum et Ecclesia*, 35(3), 1-6.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, 95-120.
- Coleman, J. S. (1990). *Foundations of social capital*. Cambridge: Belknap.
- Colquitt, J. A., Scott, B. A. and LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92(4), 9-27.
- Dasgupta, P. (2010). A matter of trust: Social capital and economic development". *SCI Discussion Paper*, The University of Manchester.
- Dayton-Johnson, J., (2003). Knitted warmth: The simple analytics of social cohesion. *Journal of Socio-Economics*, 32(6), 632-645.
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology*, 87(4), 11-28.
- Drabek, T. E., Tamminga, H. L., Kilijanek, T. S., & Adams, C. R. (1981). *Managing multiorganizational emergency responses: emergent search and rescue networks in natural disaster and remote area settings*. University Institute of Behavioral Science.
- Drach-Zahavy, A., & Somech, A. (2010). From an intrateam to an interteam perspective of effectiveness: The role of interdependence and boundary activities. *Small Group Research*, 41, 143-174.
- Fulmer, C. A., & Gelfand, M. J. (2012). At what level (and in whom) we trust: Trust across multiple organizational levels. *Journal of Management*, 38(4), 1167-1230.
- Gautam, D. (2010). Good practices and lessons learned: Disaster risk reduction through schools. In *Good Practices and Lessons Learned: Disaster Risk Reduction through Schools*. Department for International Development (DFID).

- Gillespie, N., & Mann, L. (2004). Transformational leadership and shared values: The building blocks of trust. *Journal of Managerial Psychology*, 19, 588-607.
- Hanifan, L. J. (1916). The rural school community center. *Annals of the American Academy of Political and Social Science*, 67, 130-138.
- Hoegl, M. H., & Proserpio, L. (2004). Team member proximity and teamwork in innovative projects. *Research Policy*, 33, 1153-1165.
- Jordan, A.E. (2010). Collaborative relationships resulting from the urban area security initiative. *Journal of Homeland Security and Emergency Management*, 7(1),1-19.
- Kahn, K. B. (1996). Interdepartmental integration: A definition with implications for product development performance. *Journal of Product Innovation Management*, 13, 137-151.
- Kamensky, J. M., Burlin, T. J., & Abramson, M. A. (2004). Networks and partnerships: Collaborating to achieve results no one can achieve alone. In Kamensky, J. M., & Burlin, T. J. (Eds.), *Collaboration using networks and partnerships* (pp. 3-20). Lanham, MD: Rowman & Littlefield Publishers, Inc.
- Kapucu, N. (2009). Interorganizational coordination in complex environments of disasters: The evolution of intergovernmental disaster response systems. *Journal of Homeland Security Emergency Management*, 6(1), 1-26.
- Kapucu, N., & Garayev, V. (2011). Designing, managing, and sustaining functionally collaborative emergency management networks. *The American Review Public Administration*, 20(10), 1-19.
- Kapucu, N. (2012). *The network governance in response to acts of terrorism: Comparative analyses*. New York, NY: Routledge.
- Koh, K. H., & Cadigan, O. R. (2008). Disaster preparedness and social capital. *Social Capital and Health*, 273-285.
- Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Level issues in theory development, data collection and analysis. *Academy of Management Review*, 19, 195-229.
- Klein, C. (2011). *Social capital or social cohesion: what matters for subjective well-being (SWB)?*, CEPS/INSTEAD Working Paper No 36, Luxembourg.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12, 1-47.
- Levi, Y., & Litwin, H. (1986). *Community and cooperations in participatory development*. Aldershot: Gower.
- Lewicki, R. J., Tomlinson, E., & Gillespie, N. (2006). Models of interpersonal trust development: Theoretical approaches, empirical evidence, and future directions. *Journal of Management*, 32, 991-1022.
- Lin, N. (2001). *Social capital: A theory of structure and action*. Cambridge, UK: Cambridge University Press.
- Lochner, K., Kawachi, I., & Kennedy, B. P. (1999). Social capital: A guide to its measurement. *Health and Place*, 5, 259-270.
- Marks, M. A., DeChurch, L. A., Mathieu, J. E., Panzer, F. J., & Alonso, A. (2005). Teamwork in multiteam systems. *Journal of Applied Psychology*, 90, 964-971.
- Marumo, Y. (2012). Disaster Management and Social Capital in Cases of Shinjuku-ku : *The Senshu Social Capital Review*, 3, 71-90.
- Mathbor, G. M. (2007). Enhancement of community preparedness for natural disasters: The role of social work in building social capital for sustainable disaster relief and management. *International Social Work*, 50(3), 357-369.
- Mayer, R. C., Davis, J. H. and Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 9-34.
- Mulunga, S. N., & Yazdanifard, R. (2014). Review of social inclusion, social cohesion and

- social capital in modern organization. *Global Journal of Management and Business Research*, 14(3), 15–20.
- Murphy, B. L. (2007). Locating social capital in resilient community-level emergency management. *Natural Hazards*, 41, 297-315.
- Nakagawa, Y., & Shaw, R. (2004). Social Capital: a missing link to disaster recovery. *International Journal of Mass Emergencies and Disasters*, 22, 5-34.
- Nampila, T. (2005). *Assessing community participation: The Huidare informal settlement* (Doctoral dissertation, Stellenbosch: University of Stellenbosch).
- Neal, D., & Phillips, B. (1995). Effective emergency management: reconsidering the bureaucratic approach. *Disasters*, 19, 327-337.
- Ng, K.Y., & Chua, R.Y.J. (2006). Do I contribute more when I trust more? Differential effects of cognition and affect based trust. *Management and Organization Review*, 2(1), 43-66.
- Ostrom, E. (2009). What is social capital? In V. O. Bartkus, & J. H. Davis (Eds.), *Social capital: Reaching out, reaching in*. Cheltenham, UK: Edward Elgar Publishing.
- Oxoby, R., (2009). Understanding social inclusion, social cohesion and social capital. *International Journal of Social Economics*, 36(12), 1133–1152.
- Pelling, M. (1998). Participation, social capital and vulnerability to urban flooding in Guyana. *Journal of International Development*, 10, 469-486.
- Putnam, R. D. (1993). The prosperous community. *The American Prospect*, 4, 35-42.
- Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, 6, 65-78.
- Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon & Schuster.
- Portes, A. (1998). Social capital: Its origins and applications in modern Sociology. *Annual Review of Sociology*, 24(1), 1–24.
- Quibria, M.G. (2003). The puzzle of social capital: A critical review. *Asian Development Review*, 20(2), 19-39.
- Reininger, B. M., Rahbar, M. H., Lee, M., Chen, Z., Alam, S. R., Pope, J., & Adams, B. (2013). Social capital and disaster preparedness among low income Mexican Americans in a disaster prone area. *Social Science & Medicine*, 83, 50–60.
- Requena, G. P., Ortega, M. J. R., & Villaverde, P. M. G. (2012). Towards pioneering through capabilities in dense and cohesive social networks. *Journal of Business & Industrial Marketing*, 27(1), 41-56.
- Rousseau, D. M., Sitkin, S. B., Burt, S. R. & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3), 393–404.
- Rood, J. A. (2012). *Public participation in emergency management*. Portland State University. Retrieved from <https://pdxscholar.library.pdx.edu>
- Roosli, R., & O'Brien, G. (2011). Social learning in managing disasters in Malaysia. *Disaster Prevention and Management*, 20(4), 386–397.
- Sadeka, S., Mohamad, M. S., Imam, M., Reza, H., & Manap, J. (2015). Social capital and disaster preparedness: Conceptual framework and linkage. *Journal of the Social Science Researches*, 3, 38–48.
- Sargent, L. D., & Waters, L. E. (2004). Careers and academic research collaborations: An inductive process framework for understanding successful collaborations. *Journal of Vocational Behavior*, 64, 308-319.
- Sanyal, S., & Routray, J. K. (2016). Social capital for disaster risk reduction and management with empirical evidences from Sundarbans of India. *International Journal of Disaster Risk Reduction*, 19, 101–111.
- Schuller, T., Baron, S., & Field, J. (2000). Social capital: a review and critique. In S. Baron

- (Ed.), *Social capital: Critical perspectives*. New York, NY: Oxford Press.
- Scrivens, K., & Smith, C. (2013). *Four interpretations of social capital: An agenda for measurement* (No. 2013/6). OECD Publishing.
- Simons, T., & Peterson, R. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology*, 85, 102-111.
- Smith, P., & Polanyi, M. (2008). Social norms, social behaviors and health: an empirical examination of a model of social capital. *Australian and New Zealand Journal of Public Health*, 27, 456-463.
- Szreter, S., & Woolcock, M. (2004). Health by association? Social capital, social theory, and the political economy of public health. *International Journal of Epidemiology*, 33, 650-667.
- Thomson, A. M., Perry, J. L., & Miller, T. K. (2009). Conceptualizing and measuring collaboration. *Journal of Public Administration Research and Theory*, 19(1), 23–56.
- Tzanakis, M. (2013). Social capital in Bourdieu's, Coleman's and Putnam's theory : Empirical evidence and emergent measurement issues. *Educate*, 13(2), 2–23.
- United Nations, *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*, 22 January 2005, A/CONF.206/6, available at: <http://www.refworld.org/docid/42b98a704.html.f>
- Varda, D., Forgette, R., Banks, D., & Contractor, N. (2009). Social network methodology in the study of disasters: Issues and insights prompted by Post-Katrina Research. *Population Research and Policy Review*, 28(1), 11-29.
- Ward, R., & Wamsley, G. (2007). From a painful past to an uncertain future. In Rubin, C. B. (Ed.), *Emergency management: The American experience 1900–2005*. Fairfax, VA: Public Entity Risk Institute.
- Waugh, W. L., & Streib, G. (2006). Collaboration and leadership for effective emergency management. *Public Administration Review*, 66(2), 131–140.
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). *At risk: Natural hazards, people's vulnerability and disasters*. London, UK: Routledge.
- Wood, D. J. (1991). Toward a comprehensive theory of collaboration. *The Journal of Applied Behavioral Science*, 27(2), 139–162.
- Yan, A., & Louis, M. R. (1999). The migration of organizational functions to the work unit level: Buffering, spanning, and bringing up boundaries. *Human Relations*, 52, 25-47.