Covering the Cost of the Past: Disaster Management in the Most Typhoon-Affected Region in the Philippines

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ABSTRACT

This is a quantitative article which aims to analyse what constitutes successful disaster governance by measuring how the previous performance of the disaster management network influence the aspects of governance process - initial agreement, leadership, trust, planning and managing conflict and how these variables are associated to the outcome of collaborative disaster management. The findings highlight the role of public managers in the collaborative disaster management as it revealed that initial agreement is connected with leadership, leadership is associated with trust, and trust, as well as managing conflict, are correlated with the planning process. The findings suggest that the Philippine disaster management network in Region 10 is shaped by its previous performance. However, there is a necessity to institutionalise incentive mechanisms and improve the leadership capacities of the lead agencies in order to strengthen the trust and interdependence among agencies which could lead to more effective disaster management plans and stronger network collaboration.

KEYWORDS

Collaboration, Disaster Response, Governance, Leadership, Natural Hazards, Performance

INTRODUCTION

The dynamic and sometimes complicated relationship between and among agencies suggests the arduous role of public managers. Administrative theories on disaster management emphasize specific managerial challenges during a crisis such as the need for a timely response; the necessity to identify issues related to the coordination among personnel, structures, and responders; and to determine the limitations of command and control (Sementelli, 2007).

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Despite the complexity of inter-organizational relationships, understanding the dynamics of these partnerships remains relevant. Theoretically, Bryson, Crosby, and Stone (2006) pioneered the comprehensive approach to cross-sector collaboration with an emphasis on the challenges and constraints in the aspects of collaborative process and structures. Thomson and Perry (2006), Ansell and Gash (2008), Agranoff (2007), Provan and Kenis (2008), Emerson, Nabatchi, and Balogh (2012) and Koschmann, Kuhn and Pfarrer (2012) empirically explored the variables of collaborative management, network theory as well as the various factors and contingencies that lead to successful collaboration. On the other hand, Kapucu (2015), Kapucu, Arslan and Demiroz (2010), Kapucu, Arslan and Collins (2010) examined emergency management response scenarios and postulated theories on what constitutes better and effective disaster response. Almost all of the mentioned scholars emphasized the necessity of collaboration towards better public service. However, only a few studies have been made on collaborative governance during disasters particularly typhoons (Kapucu, Arslan, & Demiroz, 2010; Djalante et al., 2013; and Nurmandi et al., 2015).

This research aims to provide empirical analysis on what constitutes successful disaster governance in the context of the Philippines. This article examines the question: How do the previous performance of the disaster management network influence the aspects of governance process (initial agreements, leadership, planning, trust, and managing conflict) and how it affects the existing relationships in the network?

Primarily, previous performance as used in this study is based on the self-assessment of the Regional Disaster Risk Reduction Management Council or disaster management network members on their execution of the disaster response targets. Hence, previous performance refers to the initial conditions of the cross-sector collaboration. On the other hand, existing relationship pertains to the characteristics of the connection among network members and therefore serves as the outcome of the collaborative efforts in disaster management. This research output could serve as basis for national and local governments to consider institutional changes appropriate to the needs of the implementing agencies. Moreover, the findings propose new and basic knowledge on public administration which are not yet fully explored in the context of disaster management.

Disasters are characterized by unexpected or unusual size and causes disruptions to the communication and decision-making capabilities, require decentralized decision making and intensive human interactions (Kapucu & Van Wart, 2006). Managing disasters require dynamic processes which are ideal yet demanding for government at all levels. The Greek word “krisis” refers to tensions that call for critical judgments, exercising critique, reflexivity, which would inform decisions reached and actions taken (Antonacopoulou & Sheaffer, 2014). With transformational leadership ensconced at the top, the next step is to get these very engaged organizational members to look not only at the good of the organization but also at the greater societal good with the temptation of federalizing disaster response put away, leadership must recognize the need for a basic change in relationships within and across governments (Lester & Krejci, 2007). Thus, collaboration among organizations and government agencies is essential for the development of an effective strategy and better performance during disaster response.

Bryson et al. (2006 p. 44) broadly defined cross-sector collaboration as the process of “linking or sharing of information, resources, activities, and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved by the organization in one sector separately.” Cross-sector collaboration acknowledges the limitations and strengths of every sector and the cooperation between and among them complements the functions of each sector. A more specific view on collaborative governance focusing on the inter-relationship between and among government officials and by emphasizing the cyclical nature of collaboration is offered by Ansell and Gash (2008).

Although this study focuses on the governance process attributed by the existing institutional frameworks in the Philippines, this research mainly utilizes the theory of Bryson et al. (2006) on cross-sector collaboration as its framework of analysis. The review of literature points to the important relationships of the initial condition (previous performance), aspects of governance process – initial
agreement, leadership, trust, planning and managing conflict - and outcome of collaboration in terms of the relationships with political and professional constituencies (existing relationships). In doing so, linear relationships among the variables were examined.

**Related Studies**

The characteristics of the institutional environment and the need to address complex public issues often precede collaboration. The failure of efforts to solve a public problem as well as other environmental factors influences inter-organizational relationships and cross-sector collaborations (Bryson et al., 2006). Meanwhile, the idea of good performance during disasters refers to the ability to assess and adapt capacity, restore or enhance disrupted or inadequate communications, utilize uncharacteristically flexible decision making, and expand coordination and trust of emergency response agencies (Kapucu & Van Wart, 2006). Primarily, government solutions in forms of policies and regulations are products of either market or sector failure. Lessons from the previous performance which may suggest sector failure, serve as the foundation for committed sponsors and effective champions to emerge, as well as increase the informal and formal agreements in collaboration particularly in terms of composition and accountability (Bryson et al., 2015). Moreover, trust in terms of common bond and confidence in organization competence might have been developed despite the failed efforts towards successful collaboration and can be a basis in starting new collaborative efforts (Rashid & Edmondson, 2011). Meanwhile, the causes and implications of the sector failure may lead to effective measures in managing conflict (Ojo & Abolade, 2014) and planning process (Sial et al., 2011). Lastly, the previous performance of the network may have led to the existing relationship among network member (Takim & Akintoye, 2002). Hence, the following hypotheses are formulated:

**Hypothesis 1:** The previous performance of the disaster network significantly affects the initial agreement in the disaster governance process.

**Hypothesis 2:** The previous performance of the disaster network significantly affects the leadership in the disaster governance process.

**Hypothesis 3:** The previous performance of the disaster network significantly affects the trust in the disaster governance process.

**Hypothesis 4:** The previous performance of the disaster network significantly affects the managing conflict aspect of the disaster governance process.

**Hypothesis 5:** The previous performance of the disaster network significantly affects the planning in the disaster governance process.

**Hypothesis 6:** The previous performance of the disaster network significantly affects the existing relationships among network members (outcome).

Forging initial agreements by providing incentives and proper motivation mechanisms foster inter-organizational communication and trust, improving inter-organizational network coordination in emergency management response operations (Kapucu, 2006); (Ansell & Gash, 2008); Tang & Tang, 2014). The studies of Tang and Mazmanian (2009) and Tang and Tang (2014) in the field of collaborative management discussed the importance of the right incentives as a motivation and the various dynamics that went with it. The former suggested that the collaboration can be analyzed by looking into how agencies and organizations perceive collaboration, their intentions and willingness to collaborate. On the other hand, incentives and other motivation schemes should be implemented according to the right sequence and manner to be effective (Tang & Tang, 2014). Rainey and Steinbauer (1999) and Wright et al. (2014) explained public service motivation as “a general altruistic motivation to serve the interests of a community of people” and self-sacrifice, as an aspect of public service motivation, makes an individual commit to organizational change (Wright et al., 2014). Therefore, providing the right kind of motivation demands careful understanding of what the organization needs.
and what inspires its members. Since providing appropriate motivation mechanisms can lead to better performance, initial agreement is considered in this study together with the following hypotheses:

**Hypothesis 7:** There is a significant relationship between initial agreement and leadership.

**Hypothesis 8:** There is a significant relationship between initial agreement and trust.

**Hypothesis 9:** There is a significant relationship between initial agreement and managing conflict.

**Hypothesis 10:** There is a significant relationship between initial agreement and planning.

**Hypothesis 11:** There is a significant relationship between initial agreement and the existing relationships in the network.

Towards a successful cross-agency collaborative management and good network outcome, managers need to understand and work strategically within the institutional environment; and build capacity across boundaries through rigorous structures and processes with the extra commitment and coordination required to work across agency boundaries (Fountain, 2013). Crucial to the success of the collaboration is the operationalization of each member’s responsibility in order to continue the work and accomplish the goal despite the absence of leadership during crisis situations. Lester and Krejci (2007) explained that during disasters, the person exercising leadership is more important than the person who is authorized to lead. On the other hand, poor communication, misguided and poorly executed leadership, lack of contingency plans and insufficient coordination with various stakeholders, lead to collaborative failures (Menzel et al., 2006; Kettl & Walters, 2005; Wise, 2006) or sector failure (Bryson et al., 2006). Thus, the following hypotheses are made:

**Hypothesis 12:** There is a significant relationship between leadership and trust.

**Hypothesis 13:** There is a significant relationship between leadership and managing conflict.

**Hypothesis 14:** There is a significant relationship between leadership and planning.

**Hypothesis 15:** There is a significant relationship between leadership and the existing relationships in the network.

Significantly, Kapucu (2006) noted that effective response and recovery operations require collaborations and trust between government agencies at all levels and between the public and nonprofit sectors. Generally, trust refers to a person’s confidence in the reliability of another person with respect to certain outcomes while the shared confidence held by the members an organization is called inter-organizational trust (Zaheer et al., 1998; and Rashid & Edmondson, 2011). Interdependencies among agencies and organizations through interactive processes such as face to face dialogues increases trust, builds social capital and can develop into collaborative culture which substantially increase the speed of decision making and can lead to successful collaborations (Ansell & Gash, 2008, Tang & Mazmanian, 2009; Paraskevopoulos, 2010; Kapucu, Arslan, & Demiroz, 2010; Emerson et al., 2012; Shaw & Goda, 2004; and Shimada, 2015). Thus, this study considers trust as one of the aspects of governance aspects:

**Hypotheses 16:** There is a significant relationship between trust and managing conflict.

**Hypotheses 17:** There is a significant relationship between trust and planning.

**Hypotheses 18:** There is a significant relationship between trust and the existing relationships in the network.

The division of labor and different functions of the organizations in the network influence the attitude and behavior of the members and inevitably creates conflict. Thus, the interpersonal skills of the members and their relationship to the organizational integration should be looked into (Lawrence & Lorsch, 1967). Moreover, Bryson et al. (2006) elucidated the factors that influence the sustainability
of the collaboration process: type of collaboration, power imbalances among members, and competing for institutional logics within the collaboration. Huxham and Vangen (2005) believe that the power imbalances among collaborating partners cause mistrust and it has the tendency to worsen in cases of difficulty among partners in agreeing on a shared purpose. Hence, power imbalances and competing for institutional logics are a threat towards effective collaboration but with tactics such as strategic planning and scenario, development collaborations will likely to succeed (Bryson et al., 2006). Thus, managing conflict as one of the aspects of governance process is considered in this study:

**Hypothesis 19:** There is a significant relationship between managing conflict and planning.

**Hypothesis 20:** There is a significant relationship between managing conflict and the existing relationships in the network.

Lastly, effective and emergent planning facilitates disaster management. It is argued that planning process should be participated by the leaders of the institutions involved in the disaster operations if not, these leaders will attempt to assert themselves into the disaster situation despite earlier agreements put in place by subordinates or predecessors, putting all disaster plans in vain (Lester & Krejci, 2007). The disaster response operations during the World Trade Center attack, Hurricane Andrew, and Katrina, revealed major challenges which include poor or nonexistent planning, incompetent managers, political inattention before the event, and political squabbling afterward (Kapucu & Van Wart, 2006). Thus, contingency plans can lead to successful collaborative disaster management. It is therefore hypothesized that:

**Hypothesis 21:** There is a significant relationship between planning and the existing relationships in the network.

The researchers’ extensive review of the literature led to the formulation of hypotheses related to the initial condition, governance process and outcome of collaboration, particularly on the interrelationships of the variables - initial agreement, leadership, trust, planning and managing conflict as well as the initial condition and outcome of collaboration. Figure 1 shows the framework of analysis for this study.

**RESEARCH METHOD**

This research is conducted in the Philippines, one of the most vulnerable countries in the world where 52.46% of its population are highly exposed to natural disasters (UN-ESCAP, 2015). Among the 17 administrative regions, the focus is on Region 10 owing to its susceptibility to typhoons since 2011. The Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) reported that Typhoons Washi in 2011 and Bopha in 2012 are two of the worst typhoons in the country since 1947 and have mostly affected the Province of Misamis Oriental and the Cities of Iligan and Cagayan de Oro. Thus, the Cities of Iligan and Cagayan de Oro and the Province of Misamis Oriental were purposively chosen for this study (kindly see Figure 2).

**Sample and Data Collection**

The total number of agencies and organizations covered in this study is based on the updated list of the Disaster Management Council of Region 10, Province of Misamis Oriental and the Cities of Iligan and Cagayan de Oro which revealed that there are 56 agencies and organizations involved in the different clusters of disaster response. The majority are government agencies who are mandated by the Republic Act 10121 to lead and facilitate disaster response related activities in close collaboration with the non-government and civil society organizations. With only 56 institutions involved, a
Figure 1. The framework of analysis / structural model

Figure 2. The research setting
complete enumeration was employed. Forty-four (44) from the 56 agencies and organizations were able to return the survey questionnaire. On the other hand, the 12 other agencies were interviewed.

**Data Analysis**

The data gathered were analysed using Structural Equation Modelling through Partial Least Square Analysis (PLS-SEM). Hair et al. (2010) cited Barclay et al. (1995) in expounding that for robust PLS-SEM estimations, the minimum sample size should be ten times the maximum number of paths aiming at any construct in the outer model. Thus, with 44-sample size and a maximum of 4 paths aiming at a construct in the outer model, the researchers believe that PLS-SEM approach is the appropriate method to analyze the data for this study.

**Measures**

Each variable used in this study is measured using indicators utilized by previous researchers. Primarily, the questionnaire collected data on the aspects of governance process (leadership, trust, initial agreement, planning and managing conflict), previous performance and existing relationship of the DRRM network-members.

Shortell et al. (2002) expounded the broad areas motivations which were adopted in this study: a) altruism; and b) increasing the legitimacy of the organization. Moreover, leadership is one of the most critical aspects of intergovernmental and inter-jurisdictional cooperation (Kapucu, Arslan, & Demiroz, 2010). Thus, the capacity of the public managers to influence and motivate others were few of the measurements of leadership utilized in this study. Meanwhile, this research utilizes competence and dependability to measure trust. As equally important as trust, managing conflict is a crucial skill for network managers. Managing conflict mechanisms are measured using indicators related to personal style and official processes. On the other hand, cross-sector collaborations are most likely to succeed if deliberate and emergent planning is made (Bryson et al., 2006). For this research, strategies, plan implementation, needs assessment and evaluation are the indicators used to measure the planning aspect of the governance process. Further, previous performance is measured in terms of the targets and the performance indicators in the Regional DRRM Plan. For instance, the respondents were asked to rate the performance of their network in terms of search and rescue operations and the deployment of trained and equipped responders in affected areas. Lastly, the characteristics of the existing relationship between and among the member-agencies are measured using the frequency of their communication and interaction and are analyzed using Social Network Analysis.

**Validity and Reliability of the Measures Used**

Factor analysis was conducted to look into the validity and reliability of the measure by evaluating the within-scale consistency of the responses to the items of the measure. Table 1 shows that the values of the composite reliability coefficient and Cronbach Coefficient Alpha are very close which implies that the items are equally related to the construct and that there is no error covariance among the items. Also, the value of Average Variance Extracted (AVE) for each variable is greater than 0.05 while the factor loading for every item is higher than 0.6 confirming the uni-dimensionality of the factors. Moreover, Table 2 revealed that the highest correlation value of the discriminant validity is 0.691 (< 0.85) which indicates that the measures used in this study are free from redundant items and are therefore reliable and valid.

**FINDINGS**

The summary of path analysis presented in Table 3 reveals that the previous performance of the disaster management network in the Region is statistically significant with the initial agreement, leadership and managing conflict of the network. As explained by the Head of the Office of the Civil Defense, the experiences of the network with the previous typhoons, led to the improvements in various
policies and practices. For instance, in 2013, procurement of goods during disasters were facilitated with the release of the Joint Memorandum Circular No 2013-1 to guide the Local Government Units (LGUs) in the transparent and accountable use of the disaster management funds. The Joint Memorandum Circular 2014-1 or the implementing guidelines for the establishments of Local Disaster Risk Reduction Management (DRRM) offices in LGUs addresses various leadership concerns since the implementation of Republic Act 10121 in 2010. However, due to budgetary concerns, the Joint Memorandum Circular 2014-1 is not fully implemented. Hence, leadership in the disaster network is based on the confidence of the Local Chief Executive on whoever leads the DRRM Office.

Meanwhile, leadership in the disaster network is associated with its previous performance. According to the Head of Iligan City DRRM Office, the experiences of the City in past typhoons inspired them to improve the mechanisms in the Office and re-consider the priorities of the DRRM Council. Managing conflicts too became cushy after the previous experiences and performance of the member-agencies. The representative of the Department and Interior and Local Government of Cagayan de Oro explained that disagreements are undeniably present, yet the previous experiences of the network help them understand where the parties are coming from. Hence, arriving at a common decision to settle the conflicts is amenable.

Moreover, the initial agreement which refers to the altruism and the desire to increase the legitimacy of the office is significantly associated with leadership. The Philippine law on disaster management, Republic Act 10121, serves as the basis for the creation and operation of the disaster management network. Primarily, the Local Chief Executive (LCE) heads the disaster management council while the DRRM Officer serves as the Secretary to the council. In practice, the LCE is represented by the DRRM Officer in the Council as the latter is appointed and under the office of the former. The representative of the DRRM offices of Iligan City, Cagayan de Oro, and the province of Misamis Oriental asserted that majority if not all member-agencies believe that their respective agencies significantly contribute to the success of the disaster management and better public service. Thus, despite the challenges, the lead agencies believe that the disaster management network in the Region is doing well.

Table 3 also revealed that leadership which refers to creativity and innovation, collaboration, motivation and empowering people has a statistically significant relationship with trust which refers to competence and dependability. Also, trust and managing conflicts which are measured through personal style and official processes are significantly associated with planning which is measured through the objectives and strategies, implementation of the plan, evaluation and needs assessment. Undeniably, there were several challenges that the DRRM network have faced since the implementation of RA10121 in 2010. However, the Regional and City Council’s leadership was able to facilitate the various concerns that have occurred. For instance, the common issue on the validity and reliability of the information being shared during disasters which led to doubt and miscommunication between agencies was addressed by institutionalizing the regular meetings before, during and after the landfall of the storm to update and share correct and real-time information with the network. The DILG Misamis Oriental articulated that “sharing of information thru council meetings, emails and cellphones” help them make the necessary and appropriate actions. Thus, the competence and dependability of each member agencies are increased. In doing so, trust is enhanced which leads to efficient planning. While it is true that there are member agencies who cannot attend regular meetings and planning sessions, the active communication and exchanges of information between agencies accomplish the plan. Also, the capacity of the network to resolve coordinating failures (managing conflicts) creates strong ties and facilitates the planning processes of the disaster management network. According to the representative of the Philippine National Police of Cagayan de Oro, the fact that differences in the Council are settled provides advantages in terms of decision making as well as disaster management planning.

Lastly, the data revealed that the variables are not correlated with the existing relationship in the network. The density of the network, generated through Social Network Analysis, shows lesser number
of connections suggesting a relatively weak collaboration with minimal sharing of information and less efficient operations. Significantly, Table 3 shows that trust, managing conflict, and planning have direct effects on the existing relationships despite the absence of statistically significant relationships. According to the representative of the Catholic Church in Iligan City, although there are efforts to strengthen the disaster management network by encouraging the involvement of every member, most member agencies are active only during emergency situations and during quarterly meetings of the network. Therefore, there are lesser opportunities to build trust or interdependency towards better relationships within network members.

CONCLUSION

Cross-sector collaboration brings significant advantages to all parties involved. If done well, public value is enhanced. However, failed collaborative efforts brings lessons that are of great advantage for future collaborations if adhered (Akintoye & Main, 2011). This advantage of collaboration is perennial as many of the collaborative efforts fail due to inappropriate strategic decisions and sometimes due to the leaders themselves (Archer & Cameron, 2013).

Table 1. Factor analysis

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Indicators</th>
<th>Outer Loadings</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Agreement</td>
<td>1. Altruism 2. Increasing the legitimacy</td>
<td>0.880 0.800</td>
<td>0.826</td>
<td>0.828</td>
<td>0.707</td>
</tr>
<tr>
<td>Leadership</td>
<td>1. Motivating and inspiring others 2. Empowering people 3. Collaborating and influencing 4. Creativity and innovation</td>
<td>0.845 0.848 0.826 0.720</td>
<td>0.885</td>
<td>0.885</td>
<td>0.659</td>
</tr>
<tr>
<td>Trust</td>
<td>1. Dependability 2. Competence</td>
<td>0.780 0.844</td>
<td>0.794</td>
<td>0.795</td>
<td>0.660</td>
</tr>
<tr>
<td>Managing Conflict</td>
<td>1. Personal style 2. Official processes</td>
<td>0.798 0.900</td>
<td>0.836</td>
<td>0.839</td>
<td>0.723</td>
</tr>
<tr>
<td>Planning</td>
<td>1. Objectives and Strategies 2. Implement the Plan 3. Evaluation 4. Needs assessment</td>
<td>0.990 0.932 0.827 0.851</td>
<td>0.946</td>
<td>0.946</td>
<td>0.814</td>
</tr>
<tr>
<td>Performance</td>
<td>1. Search and Retrieval of dead bodies 2. search and rescue operations 3. Deployment of trained and equipped responders in affected areas.</td>
<td>0.752 0.698 0.912</td>
<td>0.828</td>
<td>0.835</td>
<td>0.628</td>
</tr>
<tr>
<td>Existing relationship</td>
<td></td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 2. Discriminant validity - Heterotrait-Monotrait ratio of correlations (HTMT)

<table>
<thead>
<tr>
<th></th>
<th>Existing relationships</th>
<th>Initial Agreement</th>
<th>Leadership</th>
<th>Managing Conflict</th>
<th>Performance</th>
<th>Planning</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Agreement</td>
<td>0.050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>0.113</td>
<td>0.585</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing Conflict</td>
<td>0.034</td>
<td>0.153</td>
<td>0.264</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>0.063</td>
<td>0.328</td>
<td>0.412</td>
<td>0.489</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning</td>
<td>0.089</td>
<td>0.398</td>
<td>0.462</td>
<td>0.683</td>
<td>0.510</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>0.115</td>
<td>0.511</td>
<td>0.691</td>
<td>0.224</td>
<td>0.513</td>
<td>0.630</td>
<td></td>
</tr>
</tbody>
</table>
The findings revealed that previous performance of the network is significantly associated with the initial agreement, leadership and managing conflict which validates the theory of Bryson et al. (2006) that sector failure facilitates cross-sector collaboration in terms of improving the initial agreement of the network as a way of making up for the shortcomings of particular sectors. The findings of Ojo and Abolade (2014) are also supported as they stressed that conflict management system based on the previous performance ensures a conducive environment in the process of collaboration. Lessons from sector failure serve as the basis for increasing informal and formal agreements in collaboration as well as enhancing the motivation mechanisms available (Bryson, Crosby, & Stone, 2015). In doing so, leadership in the network is improved.

The significant relationship of initial agreements in terms of altruism and desire to increase the legitimacy of the organization with the leadership in the disaster management network supports the earlier studies of Lawrence and Lorsch (1967), Kapucu (2006); Ansell and Gash (2008); and Tang and Tang (2014). In the context of disaster management, public managers are necessitated to have the ability to assess the damages rapidly, restore disrupted communications lines, utilize uncharacteristically flexible decision making, and expand coordination and trust of emergency response agencies (Kapucu & Van Wart, 2008). Poor communication, misguided and poorly executed leadership by the federal and state government and insufficient coordination with various stakeholders as well as insufficient preparation among communities lead to collaborative failures (Menzel et al., 2006; Kettl & Walters, 2005; Wise, 2006). Hence, the findings of this study support the theory of Lawrence and Lorsch (1967) in understanding collaborative disaster management which leads to the analysis of the factors that influence the behavior of public managers such as the nature of the task being performed, and motivation mechanisms institutionalized in the network.

Forging initial agreements by providing incentives and proper motivation mechanisms streamline leadership complexities and improve inter-organizational network coordination in emergency management response operations (Kapucu, 2006; Ansell & Gash, 2008; Tang & Tang, 2014). The studies of Tang and Mazmanian (2009) and Tang and Tang (2014) in the field of collaborative management discussed the importance of the right incentives as motivation. Incentives and other motivation schemes should be implemented according to the right sequence and manner to be effective
(Tang & Tang, 2014). Wright et al., (2014) elucidated that self-sacrifice as an aspect of public service motivation makes an individual commit to organizational change which could lead to a successful collaboration. Therefore, providing the right kind of motivation demands a careful understanding of what the organization needs and what inspires its members.

Moreover, the findings indicated that as leadership is significantly associated with the motivations in the initial agreement, leadership expands trust in the governance process. Generally, trust refers to a person’s confidence in the reliability of another person with respect to certain outcomes while the shared confidence held by the members an organization is called inter-organizational trust (Zaheer et al., 1998; Rashid & Edmondson, 2011). Interdependencies among agencies and organizations through interactive processes such as face to face dialogues increases trust, builds social capital and can develop into collaborative culture which substantially increase the speed of decision making and can lead to successful collaborations (Ansell & Gash, 2008; Tang & Mazmanian, 2009; Paraskevopoulos, 2010; Kapucu, Arslan, & Demiroz, 2010; Emerson et al., 2012; Shaw & Goda, 2004; Shimada, 2015).

Effective response operations require collaborations and trust between government agencies at all levels and between the public and nonprofit sectors (Kapucu, 2015). This research found that the capacity of the public managers in terms of creativity and innovation, collaboration, motivation and empowering people which enhances the competence and dependability in the network supports the notion of Fountain (2013) that strategic leadership particularly relationship skills are necessary since many strategies, priorities, and goals of the government inherently lie across agencies. This finding affirms the conclusion of Sarkar and Sarma (2006) that members particularly lead agencies should be qualified and capacitated to hold authority and exercise leadership during disaster operations.

Significantly, the data shows that trust in terms of dependability and competence is significantly associated with collaborative planning. The findings suggest that as the dependability and competence of the network is enhanced by the leadership, then trust enriches the planning process and output. These findings do not fully agree to the findings of Lester and Krejci (2007) who postulated that the planning process should be participated by the leaders of the institutions involved in the disaster operations to ensure the successful result. However, this research supports the findings of Kapucu and Van Wart (2006) in the disaster response operations during the World Trade Center attack, Hurricane Andrew, and Katrina, when they postulated that the problems on poor or nonexistent planning come along with incompetent managers. Thus, this research suggests that with good leadership, trust enhances the planning process of the network.

Furthermore, this study revealed that managing conflict in terms of personal style and official processes is significantly associated with collaborative planning. Bryson et al (2006) elucidated the factors that influence the sustainability of the collaboration process: type of collaboration, power imbalances among members, and competing for institutional logics within the collaboration. This study supports the findings of Huxham and Vangen (2005) that the power imbalances among collaborating partners causes mistrust and it has the tendency to worsen in cases of difficulty among partners in agreeing on a shared purpose but with tactics such as strategic planning and scenario development collaborations will likely to succeed (Bryson et al., 2006). Lastly, this research substantiates the findings of Kapucu (2006) that trust and communication, as well as contingency planning, should be enhanced and tested to improve disaster collaborative efforts.

Given these findings, this study enriches the existing understanding of cross-sector collaboration which Bryson et al., (2006) refer to as an ideal but difficult and complicated approach towards the successful outcome. With its focus on the influences of the initial conditions to the aspects of governance process - leadership, initial agreement, trust, planning and managing conflict and its impact on the outcome of collaboration, this study reaffirms the previous studies conducted on cross-sector collaboration and disaster governance emphasizing the relevance of the aspects of governance processes particularly leadership in collaborative disaster management (Fung, 2015; Tang & Mazmanian, 2008; Lester & Krejci, 2007; Kapucu, Arslan, & Demiroz, 2010). This study also joins the theoretical discussion on the relationship between the impact of initial condition to the
collaborative process where institutional design and sector failure, sets the basic ground under which collaboration takes place (Ansell & Gash, 2008).

**Contributions and Limitations**

This article has contributed to the cross-sector collaborative disaster governance literature in two important ways. First, this study provides an overarching perspective on cross-sector collaboration. The emphasis of the initial condition which refers to the previous performance which revealed to be significantly related to the governance process (initial agreement, leadership and managing conflict) is of great advantage in understanding the collaborative disaster governance in the country. The findings and discussion highlight the role of public managers in the collaborative disaster management as it revealed that initial agreement is connected with leadership, leadership is associated with trust, and trust, as well as managing conflict, are correlated with planning. This study validates the findings of Bharosa, Lee, and Janssen (2010) on the importance of institutionalized incentive mechanisms which should be aligned to the motivation of member-agencies. In doing so, the complexities of network leadership are facilitated as public managers acknowledge what motivates member-agencies to optimize their commitment to the goals of the network.

Moreover, this study has shown that having an effective leader not only harmonizes the operations of the network but also creates strong relationships between member-agencies by building on the networks’ competence and dependability which results to higher possibilities of ensuring emergent and applicable disaster plans. Thus, this study does not fully support the findings on collaboration which gives emphasis on the importance of governance structures (i.e shared governance) (Bryson et al., 2006; Ansell & Gash, 2008; Chang Seng, 2013; Jatmiko & Tandiarang, 2014). This study argues that although structure matters, collaborative disaster response management to be successful, requires deeper understanding of the capacities of managers as well as what motivates member agencies, how previous experiences stimulates leadership, improves initial agreement and develops conflict management systems.

Second, this study contributes to the studies of disaster management in the context of cross-sector collaboration which is a first in the country if not in the region. Most collaborative disaster governance studies are focused on the Western contexts, whereas this study focused on the most vulnerability region in the Philippines in terms of typhoons which provides an important empirical contribution to the existing literature in disaster governance.

Finally, this research has its own limitations. One particular limitation is the research area which focuses only on one region. Therefore, the researchers recommend that this study be extended to the other regions of the country in order to determine whether the findings can be generalized in context of Philippines disaster management.

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