Strategy Formation in Post-Disaster Reconstruction

Jason von Meding, Queen's University, Belfast, Ireland
j.vonmeding@qub.ac.uk

Matthew Campbell, Queen's University, Belfast, Ireland
mcampbell39@qub.ac.uk

Abstract

This study investigates the significant drivers of strategy formation in post-disaster reconstruction (PDR). It hypothesises that intentional strategic interventions have a significant bearing on successful disaster risk reduction. Several objectives were developed at the outset of the study: 1) analyse the significant topics in strategic management and PDR; 2) develop an understanding of existing strategy formation process in PDR; 3) construct a model for strategy formation in PDR; 4) measure and evaluate the significance of emerging themes in the research; 5) recommend how the findings of the research can be utilised to impact practice. Initially an in-depth review of strategy formation and PDR literature was undertaken. Following this, qualitative data were collected to address objective 2 and analysed using Decision Explorer and Microsoft Excel. Quantitative data based on the key themes emerging from objective 4 were then collected and analysed using Statistical Package for Social Sciences (SPSS) software. The study was conducted among humanitarian professionals as the primary data source. Participants worked for a variety of disaster actors, from local and national government to humanitarian implementing agencies to technical consultancies. Participants held broad global experience, primarily in developing country contexts. The data suggests that understanding the following key strategic and PDR issues can improve the outcomes of post-disaster reconstruction for both beneficiaries and Non-Government Organisations (NGOs); design considerations; collective ability of the organisation; top management team and CEO involvement; institution-based interface issues; theoretical control of strategy with the exception of the aspects of time and cost. This research provides a structured and in depth breakdown of the key themes concerned with strategic management and PDR, presenting key points for improvement in humanitarian practice and new avenues of research, thus serving as a significant contribution to knowledge.

Keywords: Strategy, Reconstruction, Management, Organisation, Disaster, Mitigation.

Introduction

The effect and increasing likelihood of natural hazards (UNDP, 2004; World Health Organization, 2011), technological hazards (FEMA, 2012), and conflict hazards (UNEP, 2010) globally is staggering. The combination of hazard and vulnerability leads to many of the definitions of the term "disaster" (Wisner, 2004; Middleton and O'Keefe, 1997; UNDP, 2011). This study defines it as a combination of a hazard and vulnerability, which causes physical damage and has a negative impact on the existing environment. Figure 1 illustrates the rise in disasters and victims in recent years.
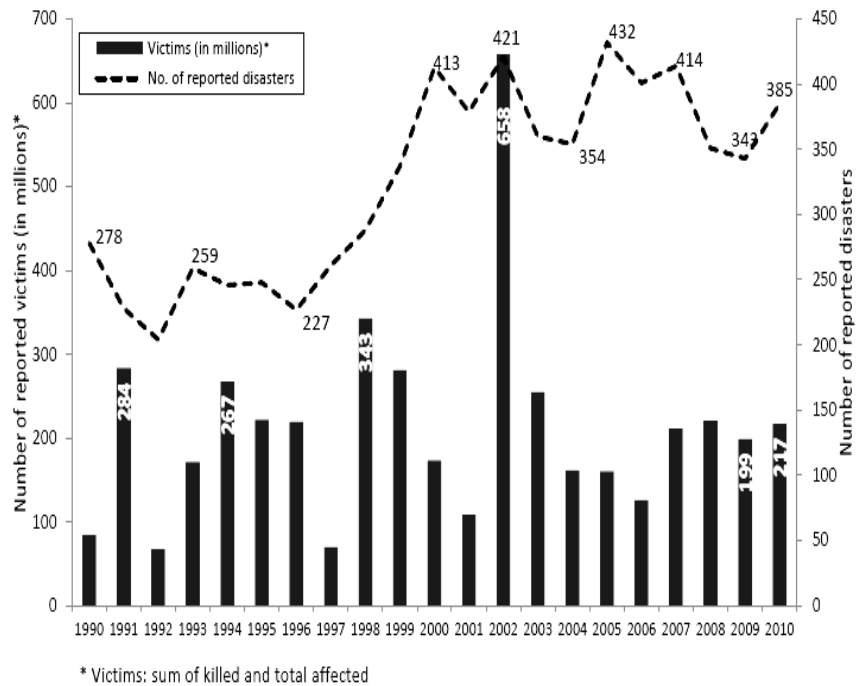
Figure 1: 1990-2010 trends in disasters' occurrence and victims Source: CRED, 2011.

Post-disaster reconstruction (PDR) is critical to recovery (Environmental Planning Collaborative and TCG International, 2004), enhancing future prospects and mitigating the risk of future disasters (UNDP, 2004). Therefore improving the effectiveness of PDR through research is critical. To date, limited success of PDR projects has been due to lack of operational and organisational competencies (Von Meding et al., 2009; Da Silva, 2010; UNDP, 2004). Thus organisations in this sector are underperforming due to poor strategy. This realisation is made more pertinent by the realisation of the critical role that strategy formation plays for any organisation (Porter, 1998; Peng, 2009; Lynch, 2000; Mintzberg, 2007). This study will attempt to define the critical drivers influencing the management of PDR at the strategic level, thus providing a significant contribution to knowledge.

To uncover key issues, this study will focus on the following aspects of strategy formation in PDR: the process, those involved, the external environment, the key characteristics on which it is formed and measurement of the process and end product. Key facets will be assessed in terms of the aspects outlined in the introduction: *control issues* (Blair and Boal, 1991; Peng, 2009; Hannagan, 2002) regarding the process; *collective issues* (Langford and Male, 2003) considering who is involved; *change issues* (Porter, 2008; Rajagopalan and Spreitzer, 1997; Lansley and Harlow, 1987) addressing changing environments; *premise issues* (Mintzberg, 2007; Lynch, 2000; Hannagan, 2002) identifying the key characteristics; and the final aspect will be tackled using a combination of all of the issues.

Control Issues in Strategy Formation

There are four schools of thought on this topic, and these include intended (Campbell-Hunt, 2000), emergent (Lynch, 2000), adaptive/dynamic (Mintzberg and Quinn 1992), and theoretical (Peng, 2009). The *intended school* considers strategy formation as a thoughtful plan based on careful analysis that creates a unique competitive advantage. Prominent theories in this school include Porter's (1998) "Five Forces that shape strategy"; and Strength, Weakness, Opportunity, Threat (SWOT) Analysis (Griffin, 2012; Farjoun, 2002). This school has been critiqued for being static (Pettigrew, 1992) and exclusively predictive,

and therefore unable to meet the needs of organisations in rapidly changing environments (Lynch, 2000).

Meanwhile, the *emergent school* is rooted in patterns of activities. A prominent theory in this school is "the five P's for strategy" (Mintzberg and Quinn, 1992), which considers strategy as plan, ploy, pattern, position, and perspective. This particular school has been critiqued for a lack of analysis (Hannagan, 2002), being haphazard (Porter, 1998) and ignoring resource and skills aspects (Lynch, 2000).

It is likewise important to consider the *adaptive/dynamic school*, which considers a more fluid approach to strategy formation. Major paradigms in this school include the resourced-based view (Rouse and Daellenbach, 2002), Porter's Value Chain (Porter, 1998), Value, Rarity, Imitability, Organisation Analysis (VRIO) (Knott, 2009), hierarchy of resources (Lynch, 2000), capabilities and core competencies (Rouse and Daellenbach, 2002) and the dynamic capabilities view (Teece et al., 1997). A critique of this school is that it is too inward looking (Peng, 2009).

Finally, the *theoretical school* brings together the intended, emergent and adaptive schools through advocating the formulation of strategy (intended), implementing a series of actions (emergent), along with an assessment of the internal company (adaptive) and its desired performance levels at the desired destination (Peng, 2009; Campbell-Hunt, 2000; Lynch, 2000; Smith and Goddard, 2002). This school relies on replications and experiments under different conditions that can be costly (The Guardian, 2011), and these activities must be justified by producing evidence to show how strategies achieve value in the market (Campbell-Hunt, 2000).

Collective Issues in Strategy Formation

This topic addresses the matter of who is responsible for the formation of strategy, a crucial factor affecting an organisation's success (Hannagan, 2002). There are three key considerations that contribute to effective corporate governance of the firm: institution-based, industry-based and resourced-based (Peng, 2009). *Institution-based* considerations are the formal and informal frameworks that affect the organisation. Formal frameworks are the legal (Bottomley, 2007), economic (Bottomley, 2007), political (Ricart et al., 2004; Buckley and Ghauri, 2004), and physical (Ricart et al., 2004; Buckley and Ghauri, 2004) issues that affect the firm. Informal frameworks include the socio-cultural (Peng, 2009; Elenkov et al., 2005) and geospatial (Song et al., 2002) issues that affect decisions of those in the organisation.

Meanwhile, *industry-based* considerations tell us that certain organisational configurations are more likely to provide successful outcomes in particular markets (Peng, 2009). Baysinger and Hoskisson (1990) claim that independent outside directors can enhance performance in all but the fast moving industries. Conversely, Peng (2009) describes how inside directors can understand intricate industry issues, which can be beneficial in more dynamic markets.

Finally, *resourced-based* considerations must be taken into account, given that the distribution of strategic control must also consider the influence, connections and competencies of possible recipients (Peng, 2009). Demography of the top management team (Wiersema and Bantel, 1992), the timing of their involvement (Hunsicker, 1980), executive influence on innovation (Elenkov et al., 2005), involvement of middle managers (Rouleau, 2005), the behavioural and cognitive type of those involved (Floyd and Woolridge, 1992), and the translation of strategy all must be considered in its formation.

Change Issues in Strategy Formation

Change issues relate to how an organisation copes with alterations to its external environment. Changes can come from a wide range of sources, as described by Lansley and Harlow (1987) and Porter (1998). This is an important factor in the formation of strategy as Porter (1998: 1) states, "The essence of formulating competitive strategy is relating a company to its environment." The prominent schools of thought in organisational change are content and process.

The *content* school focuses on the antecedents and consequences of strategic change (Rajagopalan and Spreitzer, 1997), promoting a view that organisations usually gain competitive advantage by becoming reactive (Porter, 1998). The position of the content school is in line with the dynamic capabilities view, advocated by Green et al. (2008) and Teece et al. (1997).

In contrast, the *process* school focuses on the role of management in strategic change. (Rajagopalan and Spreitzer, 1997). Valuable distinctive resources have been identified as being both reluctant to change and beneficial to performance (Kraatz and Zajac, 2001). Another view advocates that both strategy and performance measurement should evolve following a change in the external environment (Smith and Goddard, 2002). This is in line with the theoretical school of strategic thought (Peng, 2009).

Premise Issues in Strategy Formation

Premise issues relate to the key characteristics on which strategy formation is based. To do this, both the purpose (Lynch, 2000) and the critical success factors (Porter, 1998) of the organisation must be identified (Hannagan, 2002). Critical success factors may be one of the aspects mentioned in the control, collective, or change issues.

Porter's three dimensions of cost emphasis, differentiation and market scope have been widely adopted as defining competitive strategy in many organisations today (Porter, 1998). However, others argue that this scope is insufficient to cover the necessary components and argue for further meta-dimensions (Campbell-Hunt, 2000).

Post-Disaster Reconstruction

In order to contextualise this study, key issues in PDR must be assessed. This is vital because the range of problems affecting this process is varied, and situations change rapidly. In addition, disaster-affected communities usually underestimate the duration of a disaster from impact to recovery (FEMA, 2009). In a post-disaster scenario, issues range from humanitarian (FEMA, 2007; Coppola, 2011; The Sphere Project, 2011; Shelter Centre, 2008; Jha et al., 2010) to project management (Von Meding et al., 2009; Hidayat and Egbu, 2010) to interface issues (Environmental Planning Collaborative and TCG International, 2004; Hidayat and Egbu, 2010).

It has been often noted that a disaster is a combination of a hazard and vulnerability, thus this concept must be considered as the key factor affecting the impact a disaster will have following a hazard occurrence (Wisner, 2004). A key driver affecting vulnerability is the level of development (Middleton and O'Keefe, 1997; UNDP, 2011). In more detail, it is a progression of underlying causes, dynamic pressures and unsafe conditions (IFRC, 2011). Thus the relationship between vulnerability, development, hazards and disasters is a critical consideration when formulating strategy in PDR. The literature widely supports a participatory approach during post-disaster activities as a strategy for enhancing

development and reducing vulnerability (IFRC, 2011; Shelter Centre, 2008; Environmental Planning Collaborative and TCG International, 2004; SEEDS, 2012).

There are critical project-based activities occurring at every stage of the disaster cycle (response, recovery, mitigation, and preparedness). Essential elements of an initial response to a disaster include engagement, initial assessment, strategic planning and coordination (The Sphere Project, 2011; Shelter Centre, 2008; World Economic Forum, 2010; Jha et al., 2010). In terms of coordination, online platforms can be used to source and share information (ReliefWeb 2012). In the recovery stage, the PDR effort really gets underway and implementing agencies look to assist those who have suffered the full impact of a disaster to rebuild their homes, lives and services, and to strengthen their capacity to cope with disaster impacts (IRFC, 2012; MCDEM, 2005; Shelter Centre, 2008; The Sphere Project, 2011; Jha et al., 2010). Much of the literature encourages sustainable development through the PDR practices carried out during this phase (Jha et al., 2010; Shelter Centre, 2008; SEEDS, 2012). UN Habitat (2005) goes further, advising that the PDR should be incorporated into the long-term development plans for the region.

Mitigating the risk of potential hazards can also be sought through effective risk management countermeasures (Coppola, 2011). For instance, concerning construction, there are two types of mitigation strategies: first, increasing a structure's resistance to hazard and second, building a structure with the sole purpose of disaster protection. However, mitigation can also be non-structural (Coppola, 2011; SEEDS, 2012; The Sphere Project, 2011). A critical aspect of mitigation throughout the literature is that the reconstructed environment should be of a higher standard than the one it replaces (FEMA, 2009; The Sphere Project, 2011; UNDP, 2004; IRFC, 2012; Coppola, 2011; Shelter Centre, 2008).

Both government and NGO actors have a preparedness role to play in many cases (IRFC, 2012). Best practice is found in developed countries that have strategic plans (FEMA, 2009), community indicators and performance measures (City of Bellingham, 2012). These actions are advocated where they are not in place (Masurier et al., 2010); however, they should be advocated globally.

Methodology

A total of nine semi-structured interviews were carried out with construction industry experts to investigate strategy formation and firm orientation. These were then analysed using Banxia Decision Explorer. This is a tool that helps the investigator to see relationships between different ideas and perspectives that might be expressed about any subject (Banxia, 2002). The "heads" or end states of discussion were identified, then categorised into key issues, and then grouped according to various aspects within each issue. Central analysis was also carried out, giving an indication of the influence of each concept on the wider context of the model. As with the list heads, these concepts were also grouped and analysed to uncover the significance of specific groups of issues.

A questionnaire survey tool was then designed and distributed to a range of disaster actors through an extensive networking process. 300 questionnaires were sent out and 52 were returned, representing a 17.33% response rate. An exploratory factor analysis was undertaken on the resulting sample, in order to investigate the underlying drivers of strategy formation in PDR. The quantitative analysis tool chosen was IBM's SPSS Predictive Analytics software. The data gathered was deemed suitable for Exploratory Factor Analysis (EFA) based on a Kaiser-Meyer-Olkin Measure of Sampling Adequacy score of 0.778, and a score of 0.000 for Bartlett's Test of Sphericity (Hutcheson and Sofroniou, 1999). Six

components were then identified (see Table 1), broadly replicating the themes emerging from literature.

Findings

Table 1 shows the total variance in the sample explained by the six main components identified. In total, the six components explain almost 75% of variance in the analysis of the drivers of strategy formation in PDR.

Table 1: Total variance explained by six components. Source: authors.

| | **Total Variance Explained** | | |
| | **Rotation of Sums of Squared Loadings** | | |
Component	**Total**	**% of Variance**	**Cumulative %**
1	4.753	21.604	21.604
2	2.858	12.992	34.596
3	2.494	11.336	45.932
4	2.271	10.323	56.255
5	2.208	10.036	66.291
6	1.748	7.948	74.239

Meanwhile, Table 2 shows the variables identified in each component and the theme formed from each. This Rotated Component Matrix shows the loading of the variables in each component, and these were then used to form the key themes from the variables that made up each component (Leech et al., 2005). The relevance of this type of analysis is that its exploratory nature allows a theory to emerge as to the source of variance in the data. This particular analysis is showing that 74% of variance in the data can be explained by the six components identified. These components are described in detail in Table 2.

Table 2: Rotated Component Matrix showing components of strategy formation in PDR. Source: authors

| **Component Title** | **Variable Description** | **Component** | | | | | |
		1	**2**	**3**	**4**	**5**	**6**
Design considerations	An end product providing risk mitigation	0.831					
	Sustainability during and after construction	0.793					
	Beneficiary involvement	0.761					
	Delivery of project to a specified quality	0.757					
	Performance measurement	0.664					
	Instability of disaster affected area	0.538					

Collective ability of the organisation	Identification of organisation competencies	0.778			
	Identification of organisation capabilities	0.766			
	NGO organisation-wide involvement	0.583			
Top management and CEO involvement	NGO top management involvement		0.893		
	NGO CEO involvement		0.817		
Control of strategy based on the theoretical school of thought	Undefined and organic strategic approach			0.66	
	Identification of organisation resources			0.603	
	Initial assessment			0.536	
	Innovative and adaptive strategic approach			0.525	
Clear and focussed control of time and cost	Delivery of project on time				0.851
	Clear and focussed strategic approach				0.757
	Delivery of project within budget				0.57
Institution-based interface issues	Global development organisation involvement (e.g. UNDP)				0.858
	National government involvement				0.543

The six components, or drivers, identified will now be considered in light of the literature review and the qualitative and quantitative results. The emergence of these components has provided a theory as to the structure and source of strategy formation in PDR and each must be discussed in more detail.

Design Considerations

Vulnerability was identified in the literature review as the key factor influencing the probability of a disaster scenario (Wisner, 2004). Any truly effective PDR programme must improve mitigation against future disasters (FEMA, 2009; The Sphere Project, 2011; UNDP, 2004; IRFC, 2012; Coppola, 2011; Shelter Centre, 2008). Therefore, in this context, it is important to include mitigation as a priority at all stages of the disaster cycle (Jha et al., 2010; Shelter Centre, 2008; SEEDS, 2012; IFRC, 2011).

Additionally, this concept also appeared as the second most important disaster phase in the analysis of list heads. The aspect of vulnerability was also central to the model for strategy formation in PDR, and the mitigation phase was also identified. Mitigation was also the most significant variable identified in the quantitative research. These factors combine to prove that mitigation is the most important design consideration in PDR.

Sustainability is a key issue in project management (Association for Project Management, 2006; CIOB, 2002; Project Management Institute, 2004; Lester, 2007; Lock, 2004). It was also identified as a key contextual factor in the qualitative analysis and the second most important factor identified in the quantitative analysis. In addition, beneficiary involvement

was identified as a key issue in the literature review (The Sphere Project, 2011; FEMA, 2009; IFRC, 2011; Shelter Centre, 2008). This was reinforced with the identification of needs-based assessments and beneficiary communication as principal concepts in the qualitative analysis.

Project quality has repeatedly caused problems in PDR projects. Project management literature identifies the aspect of quality as a critical part of the process (Association for Project Management, 2006; CIOB, 2002; Project Management Institute, 2004; Lester, 2007; Lock, 2004). This paradigm was also strengthened by the qualitative research, which identified this as the second most important project management aspect after the project management team. The significance of this matter is also strengthened by the results of the quantitative analysis.

The theoretical school of thought on strategic control advocates the use of performance measurement to ensure that the desired improvements are realised (Peng, 2009; Campbell-Hunt 2000; Lynch, 2000). Smith and Goddard (2002) further identified performance measurement processes to facilitate change events in organisations. It was again recorded as a feature of best practice in disaster preparedness (City of Bellingham, 2012), as well as the baseline and progress issues of project management (Association for Project Management, 2006; Project Management Institute, 2004; Lester, 2007).

Collective Ability of the Organisation

This matter was first highlighted in the introduction, where it was noted that Von Meding et al. (2009) partly attributed the ineffective performance of NGOs in PDR to the collective inability of the organisation. The subject was again identified in the literature review as a strategic control issue in the adaptive school of thought (Price and Newson, 2003; Rouse and Daellenbach, 2002; Porter, 2008; Teece et al., 1997). The importance of strategic collective issues was further detailed through the institution-based, industry-based, and resource-based considerations (Ricart et al., 2004; Buckley and Ghauri, 2004; Peng, 2009; Bottomley, 2007; Song et al., 2002; Elenkov et al., 2005). It was also identified as an important factor in the content and process schools of thought, which are concerned with strategic change (Rajagopalan and Spreitzer, 1997; Kraatz and Zajac, 2001; Teece et al., 1997; Green et al., 2008).

Contextually, the complexity of PDR that has been identified through analysing disaster management, project management and interface issues, further reinforces the magnitude of this matter. More specifically, recognition of the important role of the project management team (Association for Project Management, 2006; Project Management Institute, 2004; Lester, 2007) provides added weight to this subject. The topic was ranked as the second most significant strategic issue in the analysis of both the list heads and weighted central concepts. It was also identified as a key contextual issue of PDR as the project management team was the most important project management issue according to the analysis of list heads. Finally it was ranked the second most important theme according to the quantitative analysis.

Top Management Team and CEO Involvement

This topic concerns the overall guidance of the collective ability of the organisation. This issue was first outlined in the industry-based and resourced-based collective considerations of strategy formation (Wiersema and Bantel, 1992; Elenkov et al., 2005; Bungay, 2011; Floyd and Woolridge, 1992; Rouleau, 2005). This is also an important change issue according to the process school of thought (Rajagopalan and Spreitzer, 1997; Kraatz and Zajac, 2001). Furthermore, leadership is a key aspect of the project management team (Association for Project Management, 2006; Lester, 2007) and was identified as the most

important project management issue according to the list heads. The quantitative analysis showed this as the third most important theme.

Control of Strategy Based on the Theoretical School of Thought

Control issues in strategy formation were discussed in depth during the literature review. Moreover, it was identified as the most important strategic issue according to the analysis of list heads. The factors which form this theme can be interpreted directly into the theoretical school of thought; both are concerned with an undefined, organic and innovative strategic approach (Peng, 2009); identification of organisation resources (Teece et al., 1997; Smith and Goddard, 2002) and performance measurement (Lynch, 2000; Smith and Goddard, 2002; Peng, 2009).

The initial assessment was identified in this theme, but is not specifically included in the theoretical school of thought. This is part of the response stage of disaster management (The Sphere Project, 2011; Shelter Centre, 2008) and is implied in the charter and scope statement issues of project management (Association for Project Management, 2006; Project Management Institute, 2004; Lester, 2007); scope was also identified as the third most important project management issue according to the analysis of list heads. Needs based assessments were next identified as the most important disaster management issue according to the analysis of list heads. As the initial assessment is critical to ensure scope management, in turn allowing for performance measurement, it forms part of the theoretical school of thought (Peng, 2009; Smith and Goddard, 2002).

Clear and Focussed Control of Time and Cost

Intended control of strategy is linked with the project management issues of time and cost, thus supporting the use of prescriptive processes along with analysis (Griffin, 2012; Farjoun, 2002) to chart a course for PDR projects. The aspect of time was implicated in the disaster management issues discussed in the literature review, with the response stage following a disaster being the most prone to time sensitivity (Jha et al., 2010). Project management literature also identified time as a critical issue (Association for Project Management, 2006; CIOB 2002; Project Management Institute, 2004; Lester, 2007; Lock, 2004).

Time was identified as the third least significant project management issue in the analysis of list heads; however, it is an important feature of many of the disaster management issues identified in the same analysis. Furthermore, not only was time identified as part of this theme, it is also intertwined with design considerations as time, quality and cost are interrelated (Association for Project Management, 2006; CIOB, 2002; Project Management Institute, 2004).

The aspect of cost is implicated in the disaster management literature as the level of development, which affects the amount of vulnerability experienced by a region, which affects the amount of funds available (Wisner, 2004; Middleton and O'Keefe, 1997; UNDP, 2011). Again it was implied in the acknowledgement that funding issues were a repeated cause of failure in PDR projects (Hidayat and Egbu, 2010).

Cost was identified as the fourth least significant project management issue in the analysis of list heads. However as with quality, this aspect is intertwined with design considerations, as variations in cost will cause variations in the design considerations and vice-versa (Association for Project Management, 2006; Lester, 2007; Lock, 2004). The Factor Analysis reinforces both the literature and qualitative research in this respect.

Institution-based Interface Issues

Institution-based considerations were initially identified in the collective issues of strategy formation. These were noted as the political and geographic (Ricart et al., 2004; Buckley and Ghauri, 2004), as well as the legal and economic (Bottomley, 2007; Peng, 2009) formal frameworks experienced by the organisation, in addition to the intrinsic informal frameworks (Peng, 2009) of country of origin (Song et al., 2002) and social culture controls (Elenkov et al., 2005). This theme was also implied in the issue of preparedness, as this feature of disaster management is usually the responsibility of the host government (Sundar and Sezhiyan, 2007). The role intergovernmental and government involvement plays in PDR was also detailed (United Nations, 2011).

The concept of government level strategic planning was identified as the second most significant disaster management issue in the analysis of list heads. Government involvement was also ranked as the second most important interface issue. Intergovernmental participation featured as the fourth most important aspect according to the exploration of end states of interview discussions.
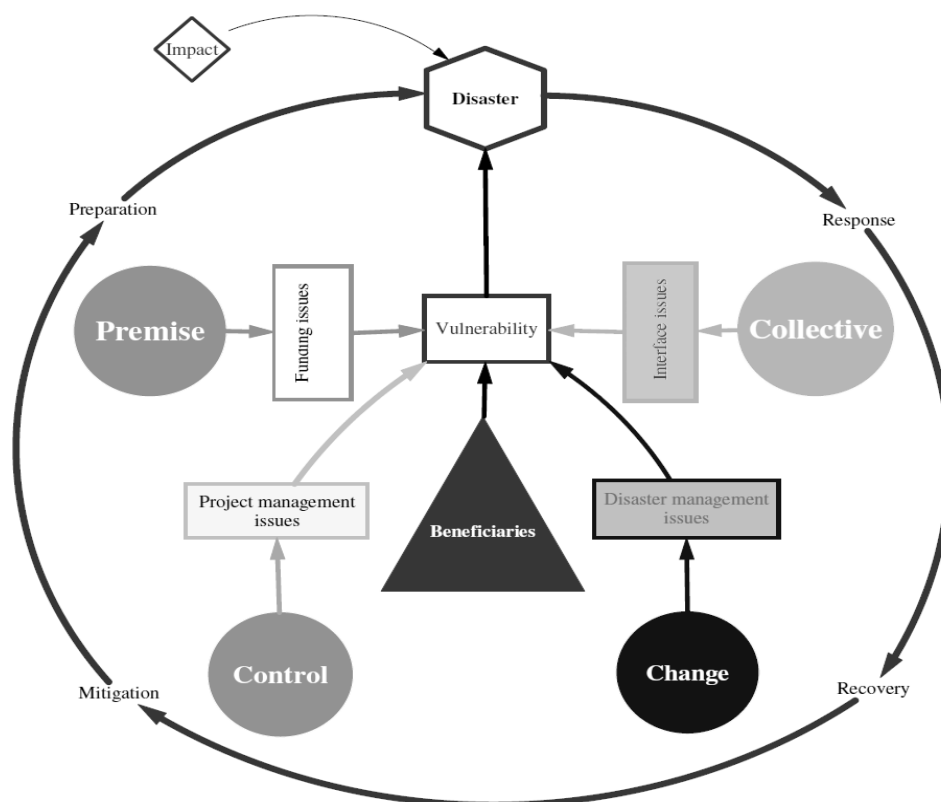
Theoretical Model

Figure 2: Model for strategy formation in PDR. Source: authors.

The theoretical model in figure 2 is developed from the findings of the study set in the context of current literature. The drivers of strategy formation are located in each of the four dimensions outlined in the study: collective, change, control and premise. These four dimensions map roughly onto the disaster cycle and lead to different sets of issues. This theoretical model has the potential to lead to further research in the development of the relationships proposed.

Conclusions

The aim of this study was to identify the critical drivers of strategy formation in PDR. This was achieved using a mixed-method approach that extracted the primary drivers and identified thematic areas of influence in the study. The study finds that certain critical drivers must be considered when forming strategy relating to PDR. Understanding that key strategic and PDR issues improve outcomes for both beneficiaries and NGOs, design considerations must play a central role in the formation of strategy formation in PDR. In addition, the collective ability of the organisation must come under scrutiny by donors and government stakeholders. The influence of the top management team should be one of visionary and adaptive leadership, while time and cost must be managed and controlled using predictive analytics.

The study provided a focussed, in-depth analysis of strategy formation in PDR, the outcomes of which are both valid and significant. The exploratory factor analysis confirms emerging themes in the underlying theory and contributes to the development of a model linking dimensions of strategy formation to issues faced in project-based humanitarian activities and to the disaster cycle. This study develops and reinforces previous research, providing a significant contribution to the field of study. The hope is that the theory behind this research will grow to impact practice and contribute to more efficient and effective post-disaster reconstruction for the most vulnerable beneficiaries.

References

Association for Project Management, 2006. *APM body of knowledge (5th edn)*. Buckinghamshire: APM.

Bottomley, S. 2007. *The constitutional corporation: Rethinking corporate governance.* Aldershot: Ashgate Publishing Ltd.

Brightman, J.R. 2002. *An introduction to decision explorer*. Banxia Software Ltd.

Buckley, P.J. and Ghauri, P.N. 2004. Globalisation, economic geography and the strategy of multinational enterprises. *Journal of International Business Studies* 35, 81-89.

Bungay, S. 2011. How to make the most of your company's strategy. *Harvard Business Review* 89(1/2), 132-140.

Campbell-Hunt, C. 2000. What have we learned about generic competitive strategy? A meta-analysis. *Strategic Management Journal* 21(2), 127-154.

Chartered Institute of Building – CIOB. 2002. *Code of practice for project management for construction and development*. Essex: Longman.

Coppola, D.P. 2011. *Introduction to international disaster management*. London: Elsevier.

Guha-Sapir, D., Vos, F., Below, R., & Ponserre, S. 2011. *Annual disaster statistical review 2010.* Brussels: Centre for Research on the Epidemiology of Disasters.

Da Silva, J., Lubkowski, Z., and Batchelor, V. 2010. *Lessons from Aceh: Key considerations in post-disaster reconstruction.* Warwickshire, UK: Practical Action Publishing Ltd.

Elenkov, D. S., Judge, W., and Wright, P. 2005. Strategic leadership and executive innovation influence: An international multi-cluster comparative study. *Strategic Management Journal* 26(7), 665-682.

Environmental Planning Collaborative & TCG International 2004. *Participatory planning guide for post-disaster reconstruction.* Ahmedabad: USAID/India and Indo-US Financial Institutions Reform and Expansion (FIRE-D) Project.

Farjoun, M. 2002. Towards an organic perspective on strategy. *Strategic Management Journal* 23(7), 561-594.

Federal Emergency Management Agency - FEMA. 2007. *Principles of emergency management supplement*. Washington: FEMA.

Federal Emergency Management Agency - FEMA. 2009. *National disaster housing strategy*. Washington: FEMA.

Field, A. 2000. *Discovering statistics using SPSS for windows: Advanced techniques for the beginner.* London: Sage.

Floyd, S.W. and Woolridge, B. 1992. Middle management involvement in strategy and its association with strategic type: A research note. *Strategic Management Journal* 13(1), 153-167.

Green, S.D., Larsen, G.D. and Kao, C.C. 2008. Competitive strategy revisited contested concepts and dynamic capabilities. *Construction Management and Economics* 26(1), 63-78.

Griffin, R.W. 2012. *Fundamentals of management*. South-Western Cengage Learning.

Hannagan, T. 2002. *Mastering strategic management*. London, Palgrave Macmillan.

Hidayat, B. and Egbu, C. 2010. A literature review of the role of project management in post-disaster reconstruction. *Conference Proceedings 26th Annual ARCOM (Association of Researchers in Construction Management) Conference*. September 6-8, 2010, Leeds, UK.

Hunsicker, J.Q. 1980. Can top managers be strategists. *Strategic Management Journal* 1(1), 77-83.
Hutcheson, G. & Sofroniou, N. 1999. *The multivariate social scientist*. London: Sage.

International Federation of Red Cross and Red Crescent Societies – IFRC. 2011. Owner-driven housing reconstruction guidelines. Geneva: IFRC Shelter and Settlement Department.

Jha, A.K., Duyne Barenstein, J.D., Phelps, P.M., Pittett, D. & Sena, S. 2010. Safer homes, stronger communities. A handbook for reconstructing after natural disasters. Washington: The World Bank.

Knott, P. 2009. Integrating resource-based theory in a practice-relevant form. *Journal of Strategy and Management* 2(2),163-174.

Kraatz, M.S. and Zajac, E.J. 2001. How organizational resources affect strategic change and performance in turbulent environments: Theory and evidence. *Organization Science* 12(5), 632-657.

Langford, D. and Male, S. 2003. *Strategic management in construction*. Oxford: Blackwell Science.

Lansley, P.R. & Harlow, P.A. 1987. *Managing construction worldwide*. London: Spon.

Leech, N.L., Barrett, K.C. & Morgan, G.A. 2005. *SPSS for intermediate statistics*. 1st edn. New Jersey: Lawrence Erlbaum.

Lester, A. 2007. *Project management planning and control*. Oxford: Elsevier.

Lock, D. 2004. *Project management in construction*. Gower: Aldershot.

Lynch, R. 2000. *Corporate strategy (2nd edn)*. Essex: Pearson Education Limited.

Ministry of Civil Defence and Emergency Management – MCDEM. 2005. *Focus on recovery: A holistic framework for recovery in New Zealand*. Christchurch: MCDEM.

Middleton, N. & O'Keefe, P. 1997. *Disaster and development: The politics of humanitarian aid*. London, Pluto Press.

Mimmack, G., Manas, G. and Meyer, D. 2001. *Introductory statistics for business* (1st edn). Cape Town: Pearson.

Mintzberg, H. 2007. *Tracking strategies*. Oxford: Oxford University Press.

Mintzberg, H. & Quinn, J.B., 1992. *The strategy process, concepts and contexts*. London: Prentice Hall.

Peng, M.W. 2009. *Global strategic management*. Texas: South-Western Cengage Learning.

Pettigrew, A.M. 1992. The character and significance of strategy process research. *Strategic Management Journal* 13(S2), 5-16.

Porter, M.E. 1998. *Competitive strategy: Techniques for analyzing industries and competitors*. New York: The Free Press.

Price, A.D.F. and Newson, E. 2003. Strategic management: Consideration of paradoxes, processes, and associated concepts as applied to construction. *Journal of Management in Engineering* 19(4),183-192.

Project Management Institute – PMI. 2004. *A guide to the project management body of knowledge* (3rd edn). Newton Square: Project Management Institute.

Rajagopalan, N. and Spreitzer, G.M. 1997. Toward a theory of strategic change: A multi-lens perspective and integrative framework. *The Academy of Management Review* 22(1), 48-79.

Ricart, J.E., Enright, M.J., Ghemawat, P., Hart, S.L. and Khanna, T. 2004. New frontiers in international strategy. *Journal of International Business Studies* 35(3), 175-200.

Rouleau, L. 2005. Micro-practices of strategic sensemaking and sensegiving: How middle managers interpret and sell change every day. *Journal of Management Studies* 42(7), 1413-1441.

Rouse, M.J. and Daellenbach, U.S. 2002. More thinking on research methods for the resource-based perspective. *Strategic Management Journal* 23(10), 963-967.

Shelter Centre. 2008. *Transitional settlement and reconstruction after natural disasters. Field edition.* New York: UNOCHA.

Smith, P.C. and Goddard, M. 2002. Performance management and operational research: A marriage made in heaven? *The Journal of the Operational Research Society* 53(3), 247-255.

Song, M., Calantone, R.J. and Di Benedetto, C.A. 2002. Competitive forces and strategic choice decisions: An experimental investigation in the United States and Japan. *Strategic Management Journal* 23(10), 969-978.

Sundar, I. & Sezhiyan, T. 2007. *Disaster management.* New Delhi: Sarup & Sons.

Teece, D.J., Pisano, G. and Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal* 18(7), 509-533.

The Sphere Project, 2011. *Humanitarian charter and minimum standards in humanitarian response.* London: The Sphere Project.

United Nations Human Settlements Programme - UN-Habitat. 2005. *Sustainable relief and reconstruction in post-crisis situations.* New York: UN-Habitat.

United Nations Development Programme – UNDP. 2004. *Reducing Disaster Risk: A Challenge for Development.* Geneva: UNDP.

United Nations Development Programme - UNDP. 2011. *Summary human development report 2011. Sustainability and equity: A better future for all.* London: UNDP.

United Nations - UN. 2011. *Pakistan Floods 2011. Early Recovery Framework.* New York: United Nations.

Von Meding, J.K. Oyedele, L. and Cleland, D.J. 2009. Developing NGO Competencies in Post-Disaster Reconstruction: A Theoretical Framework. *Disaster Advances* 2(3), 36-45.

Wiersema, M.F. and Bantel, K.A. 1992. Top management team demography and corporate strategic change. *Academy of Management Journal* 35(1), 92-121.

Wisner, B. 2004. *At risk: Natural hazards, people's vulnerability and disasters.* London: Routledge.

World Economic Forum - WEF. 2010. *Engineering & construction disaster resource partnership: A new private-public partnership model for disaster response.* Geneva: World Economic Forum.

Authors' Biography

Dr. Jason von Meding is a Senior Lecturer at the University of Newcastle, in New South Wales and was previously a Lecturer at Queen's University Belfast. His research background includes a honed expertise in decision-making processes and predictive tools for modelling human behaviour and environments, as well as the assessment of building performance in extreme conditions. He has researched extensively in the humanitarian sector and within developing country contexts, supervising several current doctoral projects in disaster management and post-disaster reconstruction.

Matthew Campbell is a post-graduate researcher at Queen's University Belfast under the supervision of Dr. von Meding.