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Sensemaking through cue utilisation in disaster recovery project management

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Abstract

This study examined the role of cue utilisation as a basis for sensemaking in disaster recovery project management. Sensemaking is a critical skill that involves organising and prioritising information to achieve an accurate representation of project situations. A mixed between-within groups design was used to test three groups of participants with different levels of project management experience in the context of disaster recovery. A total of 68 participants completed a situation judgment test that incorporated assessments of four elements of cue utilisation related to disaster recovery project management: cue identification, cue precision, cue discrimination, and cue prioritisation. Statistically significant differences in performance were evident between naïve and non-naïve groups in cue identification, cue precision and cue prioritisation. The results confirm the role of cue utilisation in the context of disaster recovery project management and provide the basis for an assessment tool that could be deployed in practice.

Keywords: Sensemaking; Cue utilisation; Disaster recovery project management

1. Introduction

Major disasters such as flood, storm, drought, landslide, earthquake and tsunamis leave wide-scale devastation in many parts of the world (Centre for Research on the Epidemiology of Disasters [CRED], 2016). In 2015, there were 346 natural disasters that impacted 113 countries, resulting in 22,773 deaths, with over 98 million people affected, and US$66.5 billion in economic losses (CRED, 2016). By comparison, in the previous decade (2005–2014), 367 natural disasters were recorded, with a death toll of 76,424, over 173 million people affected in 116 countries, and a combined economic loss of US$155.8 billion.

The regularity with which catastrophic events occur has resulted in the proliferation of disaster response and recovery projects (Crawford et al., 2013). These projects are crucial in the early stage of recovery where the aims include the provision of relief and support to victims. However, they are also important over the longer term where efforts are directed towards the rehabilitation and reconstruction of assets, and the development of community resilience for future disasters (International Federation of Red Cross and Red Crescent Societies (IFRC), 2012).

Successful disaster recovery projects require the development and implementation of detailed plans, structures, and arrangements that are capable of coordinating the efforts of government, voluntary, and private agencies (Tun and Pathranarakul, 2006). Given the impact on the community, together with the significant investment of multiple agencies, there is an interest in understanding the nature of this type of project management and how the processes and strategies can be improved to better respond to disasters in the future.

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The nature of disaster recovery is such that, inevitably, there tends to be an acute sense of urgency in the implementation of projects (Walker and Steinfort, 2013) due to a desire for normality amongst the population affected, together with the prevention of illness and disease. However, technical, economic, socio-political, and environmental issues impose a level of uncertainty in the implementation of these projects (Denis, 1991). This uncertainty is compounded by the challenge of integration, with the involvement of various stakeholders, each with different degrees of influence and interest (Walker and Steinfort, 2013). Together, these pressures of urgency, uncertainty, and the need for integration create different levels of complexity within a project (Turner and Müller, 2003).

The complexity associated with projects becomes apparent in the information processing demanded of disaster project managers where there is a potential for both information overload and a lack of information that create difficulties in coordination and communication (Preece et al., 2013). Disaster management practitioners often report difficulty in visualising clearly, the demands of the situation (Walker and Steinfort, 2013). As a consequence, early warning signs may be dismissed or overlooked, or attention may only be directed towards a particular issue or concern to the exclusion of others (Havelka and Rajkumar, 2007).

Clearly, the strategies that disaster practitioners employ to make sense of emergent situations affect the trajectory and effectiveness of the response and recovery efforts. Disaster recovery operations require faster and coordinated actions that depend primarily on the capacity of disaster practitioners to recognise threats and opportunities that then enable the application of the necessary resources (O'Sullivan et al., 2013). Therefore, effective and efficient sensemaking is critical in disaster recovery projects to ensure that resources are allocated appropriately for the benefit of the population affected.

There is little emphasis on sensemaking in contemporary models of training and assessment in disaster management. This is possibly due to the perception of sensemaking as a non-technical skill that is somewhat ubiquitous and difficult to explicate. The primary aim of the present research was to establish whether there are differences in aspects of sensemaking between experienced and inexperienced project managers during simulated disaster recovery scenarios.

2. Complexities in disaster recovery projects

For disaster management practitioners, sensemaking constitutes a critical skill necessary to comprehend the complexities associated with disaster recovery (Weeks, 2007). Complexities are inherent characteristics of projects that challenge the ability to fully grasp, predict, or control the project state and outcomes (Vidal et al., 2011). The nature of these complexities can be examined through levels of multiplicity and ambiguity.

Multiplicity constitutes the number and variety of components, together with the interdependencies inherent in a project state (Davies and Mackenzie, 2014). The dynamic context in disaster recovery involves various actors that connote multiple interactions, agendas and conflicting objectives or interests (Kennedy et al., 2011). Multiplicity is evident within agent (individuals, families, and disaster responders), organisational (insurance companies, engineering and construction companies, local and national government agencies, international aid agencies), and cross-boundary levels (across jurisdictions) (Kim and Choi, 2013; O'Sullivan et al., 2013).

Ambiguity and uncertainty arises from a lack of knowledge, information, and/or forecasts concerning different aspects of a project. Technical or scientific uncertainty stems from a limited understanding of the nature and extent of a disaster, the required techniques, and/ or the risks that may impact people and/or the environment during recovery (Denis, 1991). Socio-political uncertainties arise from a lack of knowledge about the needs, capabilities, culture, and political relationships present in the affected communities (Denis, 1991). However, the most prominent issue confronting many of these practitioners relates to the uncertainties and challenges in resource and supply that results in cost overruns, deferred deliveries, cost surges, and profiteering (Chang-Richards et al., 2013).

The complexities associated with disaster recovery projects relate to the fact that the context exists outside a business-as-usual framework. The multiple interactions of actors and systems that are poorly defined and organised (Walker and Steinfort, 2013), and the lack of predictable management processes (Havelka and Rajkumar, 2007), result in several problems, including limited or ineffective planning, inaccurate assessments, design problems, safety neglect (Kim and Choi, 2013), risk management issues (O'Sullivan et al., 2013), and integration/ coordination/ communication problems (Ismail et al., 2014).

3. Sensemaking and cue utilisation in disaster recovery project management

Disaster recovery projects often appear as a series of emerging or evolving events, such that there is a constant experience of being at the 'edge of chaos' or in the zone between stability and instability (Thomas and Mengel, 2008). Sensemaking enables the identification and labelling of these events (Weick et al., 2005), so that they can be visualised clearly and thereby controlled and managed (Maitlis and Christianson, 2014). Therefore, the accuracy and efficiency of this process of identification constitutes a critical precursor to higher-order cognitive strategies such as decision-making and problem-solving, particularly in complex, time-constrained environments (Klein, 1998).

In creating an accurate mental representation of a project state, particularly in time-constrained conditions, disaster recovery managers must draw on relevant features from the environment that are indicative or diagnostic of an event. The feature–event associations that are formed and stored in memory constitute *cues* that are subsequently retained in memory and are the basis by which *sense* can be derived (Wiggins, 2015a). The repeated application of cues reinforces the association between features and events, thereby increasing the likelihood that they will be activated in future encounters.

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