Will your business snap or snap back?
Building a resilient supply chain to survive the changing climate.

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Short abstract
Organisations operating in the global environment are highly vulnerable to manmade and natural disasters. Some organisations perform better than others in these contingencies highlighting the aspect of resilience. Therefore, the concept of resilience has gained momentum in recent years as researchers explore features of resilience. Organisations are indeed concerned with supply chain resiliency; hence, this research builds on previous research which argued that planning is an essential phase towards building resiliency. The research proposes and explores Key Resilience Indicators of the planning phase in order to make supply chains resilient through multiple case studies of agribusinesses in New Zealand.

Keywords: Resilience, crisis management, disaster

Topics: Humanitarian operations and crisis management; supply chains; agribusiness and resources sectors

Methodology: Research Framework

Organisations encounter myriad challenges due to changing global environments; for example political instabilities or threat of financial systems collapsing (Burnard & Bhumra, 2011; Murino, Romano, & Santillo, 2011; Winston, 2014). However, in addition to other global-scale challenges, organisations are highly vulnerable to the effects of climate change (Linnenluecke & Griffiths, 2012; Winston, 2014). Winston (2014) writes that although it is hard to point to one specific weather event relating to climate change, scientists agree that the planet is getting hotter. Such extreme events are taking their toll on people and businesses by increasing limits on resources; hence, impacting prices of commodities worldwide consequently impacting corporate profits and global prosperity (Winston, 2014).

Disasters impacting different countries are increasingly relevant due to the global nature of businesses now (Harvey & Richey, 2001). As globalization picked up pace in the last decade of the 20th century, more operations were pursued off-shore making supply chains geographically more diverse (Simchi-Levi, 2010). Therefore, supply chains become more vulnerable to various types of natural and manmade disasters (Simchi-Levi, 2010). Murino et al. (2011) argue that some organisations are better prepared to deal with such contingencies than others, hence indicating the presence of a critical feature – resilience.
Resilience refers to the ability of an organisation to carry out its functions and return to a stable state after major disruptions (Hearnshaw & Wilson, 2013). The concept of resilience has gained momentum in academia recently as researchers explore aspects which lead to greater resilience.

Various frameworks have been developed recently regarding organisational resilience recently; however, majority of them have attempted to measure organisational resilience by employing retrospective analyses after the adverse event (Linnenluecke & Griffiths, 2012). Another line of inquiry pursued by McManus (2008) and Stephenson (2010) who identified Key Resilience Indicators (KRIs) in organisations prior to any adverse events impacting organisations. More recently, an organisational resilience framework was developed by Radford, Addison and Ahmed (2013) following a study of SMEs. The model pointed out that three stages are involved in building a resilient organisation – commitment, planning and activation. The model also specified KRIs under each stage.

Winston (2014) points out organisations need to reconsider their strategies in light of the “megachallenges” posed by disasters and need to develop measures to mitigate the risks they are exposed to (Simchi-Levi, 2010). Additionally, Murino et al. (2011) have suggested that the decisions taken before the catastrophic event are more important than those taken during or after the event because these decisions determine the ability of the organisation to return to work following a disaster. Simchi-Levi (2010) also writes that even if some companies may be concerned with supply chain resiliency, only a few actively manage risk. These arguments direct attention to the planning stage developed in the model by Radford et al. (2013). There is no doubt that planning for adverse events is an important agenda for resilience (Penrose, 2000; Spillan & Hough, 2003) and researchers have emphasized the need for a plan as “having an effective plan may even be able to turn adversity into advantage” (Spillan & Hough, 2003). Radford et al. (2012) also identify KRIs contributing towards building organisational resilience. We argue these KRIs also have connotations for building a resilient supply chain.

A recent report by the United Nations Intergovernmental Panel on Climate Change pointed out that New Zealand “must wake up” as it could face increased natural disasters in future. Export performance drives New Zealand’s economy which is particularly dependent on its “land-based industries” (Ministry of Primary Industries, 2014). The agricultural industry is the core of New Zealand economy as it contributes 12 per cent of the Gross Domestic Product. As Linnenluecke and Griffiths (2012) point out the agriculture sector is highly vulnerable to catastrophic events; therefore, this research aims to use the KRIs to determine their significance in the agribusiness supply chains. The research aims to achieve this by utilizing a multiple case study approach.

The research aims to contribute in two areas: first, theoretically it will provide a framework for refining the concept of resilience in supply chains particularly relating to the planning stage. Second, practically it will assist agribusinesses operating in highly vulnerable zones to develop appropriate strategies through identification of risks. The avenues for future research include pursuing industry specific KRI identification to increase resilience and enable better planning for disaster.

References