



University of Warwick institutional repository: <http://go.warwick.ac.uk/wrap>

This paper is made available online in accordance with publisher policies. Please scroll down to view the document itself. Please refer to the repository record for this item and our policy information available from the repository home page for further information.

To see the final version of this paper please visit the publisher's website. Access to the published version may require a subscription.

Author(s): Bridgette Sullivan-Taylor & Layla Branicki

Article Title: Creating resilient SMEs: why one size might not fit all

Year of publication: 2011

Link to published article:

<http://link.aps.org/doi/10.1080/00207543.2011.563837>

Publisher statement: This is an electronic version of an article published in Sullivan-.Taylor, B. and Branicki, L. (2011). Creating resilient SMEs: why one size might not fit all. *International Journal of Production Research*, Vol. 49, No. 18, pp. 5565-5579. The *International Journal of Production Research* is available online at <http://www.tandfonline.com/doi/abs/10.1080/00207543.2011.563837>

Creating Resilient SMEs: Why One Size Might Not Fit All

Dr Bridgette Sullivan-Taylor*

Assistant Professor of Strategy and Organisation, Director, Strategy, Organisational Learning & Resilience Research Unit (SOLAR), Marketing and Strategic Management Group, Warwick Business School, University of Warwick, Coventry, CV4 7AL. Tel: 00 44 (0)24765 74163, Fax. 00 44 (0)24765 24628 msmbst@wbs.ac.uk

&

Dr Layla Branicki

SOLAR Research Fellow, Marketing and Strategic Management Group, Warwick Business School, University of Warwick, Coventry, CV4 7AL. Tel: 00 44 24765 22945, Fax. 00 44 (0)24765 24628 msmlb@wbs.ac.uk

*Corresponding author; all authors are from Warwick Business School.

This paper draws upon research supported by Cabinet Office Grant no: 02078391462

7000 words

Creating Resilient SMEs: Why One Size Might Not Fit All

B. Sullivan-Taylor¹ and L. Branicki

All authors from Warwick Business School, University of Warwick, Coventry, UK

This paper is a first step towards addressing a gap in the field of organisational resilience research by examining how small and medium enterprises (SME) manage the threat and actuality of extreme events. Pilot research found that the managerial framing of extreme events varied by a range of organisational factors. This finding informed further examination of the contextual nature of the resilience concept. To date large organisations have been the traditional focus of empirical work and theorising in this area, and yet the heterogeneous SME sector makes up approximately 99 percent of UK industry and routinely operates under conditions of uncertainty. In a comparative study examining UK organisational resilience, it emerged that SME participants had both a distinctive perspective and approach to resilience when compared to participants from larger organisations. This paper presents a subset of data from 11 SME decision-makers. The relationship between resilience capabilities, such as flexibility and adaptation, is interrogated in relation to organisational size. The data suggests limitations of applying a one-size-fits-all organisation solution (managerial or policy) to creating resilience. This study forms the basis for survey work examining the extent to which resilience is an organisationally contingent concept in practice.

Keywords: Extreme events; organisational resilience; SME; strategic uncertainty.

1: Introduction

A recent review of key small business journals found no published articles that made references to either ‘crisis management’, ‘business continuity management’ or ‘disaster recovery’, and that in these fields ‘*little in the way of consideration has been afforded to how concepts, findings and outcomes are appropriate to smaller firms*’ (Herbane, 2010:44). Research has also found that small and medium enterprises (SME) suffer the most in times of crisis and are the least prepared of all organisations (Ingirige et al, 2008). How SMEs plan for and respond to extreme events is under examined (Runyan, 2006). Despite coping with uncertainty being a frequent theme in organisational theory (Pfeffer and Salancik, 1978; Aldrich, 1979; Cummings and Wilson, 2003), little research has been conducted into how managers from different types of organisations deal with the uncertainties created by the threat (and sometimes the actuality) of extreme events. A pilot study indicated that attitudes and approaches to extreme events varied by a range of organisational factors, and that understanding of the contextual nature of the resilience concept in relation to organisational size remains limited (Sullivan-Taylor and Wilson, 2009). This paper is a first step in addressing this gap in terms of both theory and practice.

This paper emerges from a three year UK comparative study examining the impact of sector, geographic location and industry upon organisational resilience. From the first year of the project, it was identified that a small subset of participants from SMEs had both a distinctive perspective and approach to dealing with extreme events, when compared to those from larger organisations. This paper analyses this unique and in-depth data subset composed of 11 SME senior decision-makers. The highlighted themes stand in stark comparison to the 150 participants from large organisations. In particular, the relationship between resilience capabilities, such as flexibility and adaptation, and the strengths and weaknesses associated with the SME sector are explored. Finally, it is suggested that there are significant limitations associated with attempting to apply a one-size-fits-all organisation approach to creating resilience. This claim has implications for both policy and practice, particularly as organisations are increasingly expected to be self-reliant in the face of extreme events. The reported research informs future survey work examining the extent to

¹ Corresponding author. Email: Bridgette.Sullivan-Taylor@wbs.ac.uk

which resilience is an organisationally contingent concept, and the factors that inform these contextual differences in practice.

2: Situating the research

The following sections situate the research by defining extreme events, positioning organisational resilience and relating these fields to the SME sector.

2.1: Extreme events

An extreme event might be perceived by managers as a hazard – defined as potentially harmful – but as it can be difficult to assess the likelihood of such an event, its time frame, location or magnitude, it cannot be said to constitute a risk (McGee, Thomas and Wilson, 2005). Extreme events by their very nature expose organisations to high levels of strategic uncertainty (Sullivan-Taylor and Wilson, 2009), which might impact not only business as usual but ultimately organisational survival. Extreme events in this framing can be understood as ‘environmental jolts’ (Meyer, 1982), and can range from severe weather events, infrastructure failure, fuel crisis, global credit crunch, flu pandemics and terrorism. It is argued that the frequency of extreme events is increasing (Ingirige et al, 2008). These types of events can affect all types of organisations irrespective of size. In this paper the threat or actuality of an extreme event is presented as an acute and urgent picture of uncertainty that is difficult to interpret, thereby leading to highly challenging strategic decision-making conditions (Wilson, Branicki and Sullivan-Taylor, 2009). Within this framework it becomes important to understand the capabilities organisations require to prepare for, and respond to, extreme events.

2.2: Organisational resilience

This research builds upon the fields of business continuity, crisis and disaster management. Whilst there is fragmentation and a lack of conceptual clarity within these literatures there are broadly two key bodies of thought within organisational theory (Sullivan-Taylor and Wilson, 2009). The first is an organisational-intuitionist perspective that takes a systemic view of the production and management of crisis. For example, Perrow (1984) focussed upon internal failure cases to argue that ‘normal accidents’ occur in organisational systems shaped by high levels of complexity. The second approach is identified as the organisational resilience perspective and examines why some types of organisations have very low rates of failure (Weick and Sutcliffe, 2001). A detailed examination of these approaches lies outside the scope of this paper (see, Sullivan-Taylor and Wilson, 2009). This paper focuses upon the strategic dimensions of the challenges faced by senior decision-makers in relation to extreme events. This approach differs from much existing work in three key respects:

- Its focus on macro shocks (including internal failure to cope with them);
- Its focus on different types of organisations;
- A greater emphasis on the planning and preparedness stage of data collection.

This research aims to extend the field of organisational resilience and in this respect represents part of ‘*a new paradigm of emergency planning*’ (Coaffee and Rogers, 2008:104). It essentially takes a resource based view (RBV) which focuses upon ‘*the financial, physical, human, and organisational assets used by a firm*’ (Barney, 1995:50). It is argued that it is identification of relevant resources and capabilities that enable an organisation to prepare for, and respond to, extreme events (Hamel and Valikangas, 2003). An organisational capability is defined as a ‘*firm’s capacity to deploy resources for a desired end result*’ (Helfat and Lieberman, 2002:725). Primacy is therefore given to managerial agency and the extent to which organisations can generate a more proactive, informed and effective stance.

This paper utilises the Weick and Sutcliffe (2001) four category framework (as tested in pilot research, Sullivan-Taylor and Wilson, 2006; 2007; 2009) to examine SME participant perceptions about their own organisation's existing capabilities to cope with extreme events:

- **Resourcefulness:** the capacity of managers to identify potential problems, establish priorities and mobilise resources to avoid damage or disruption;
- **Technical:** the ability of managers to ensure that organisational systems perform to high levels when subject to extreme stress;
- **Organisational:** the preparedness of managers to make decisions (however counter-intuitive these might sound initially) and to take actions to reduce disaster vulnerability and impacts;
- **Rapidity:** the capacity of managers to make decisions on threats (e.g. from terrorism) without undue delay.

2.3: The SME sector and organisational resilience

Large organisations may dominate the literature but small businesses are vital to the economy (Robbins et al., 2000). In the UK, it is reported that SMEs account for 99.9 per cent of all businesses; 59.2 per cent of private sector employment and 51.5 per cent of private sector turnover. In 2007, this equated to an estimated 22.7 million people employed and £1,440 billion in turnover (BIS, 2009). Making up such a large proportion of enterprise, the operation of SMEs across a wide range of sectors has the potential to impact normal functioning of daily life, whether it is through the disruption of service provision, or as a part of complex and delicate supply chain networks (de Vries and Shields, 2006:34). It has also been noted that SMEs may gain increasing significance under conditions of economic recession (Stokes, 2002:17).

SME definition is a 'fundamental issue' (Stokes, 2002:6). Whilst '*there is no single uniformly accepted definition of a small firm*' (Storey, 1994:8), the Annual Small Business Survey 2008/09 defines SMEs as '*businesses with zero to 249 employees*', whilst also highlighting the heterogeneity that can be found within this broad category of enterprises (Williams and Cowling, 2009:7). The research agenda, however, can be seen to be most influenced by the Bolton Report (1971), which combined a more complex sector situated numerical taxonomy of SMEs, with a range of characteristics thought to be held by such enterprises (Storey, 1994). The characteristics identified by Bolton illustrate fundamental differences in the operational context of SMEs and indicated why '*a small firm is not to be seen as a scaled down version of a larger firm*' (Storey, 1994: 86).

Many have argued that small and large firms are fundamentally different, and that SMEs may share common characteristics, such as resource scarcity, which set them apart from larger organisations (Penrose, 1959; Wynarczyk et al., 1993; Storey, 1994; Stokes, 2002). Resource scarcity is a key issue for SMEs, and in relation to resilience, this is a crucial consideration as '*best practice is [typically] identified in resource rich large enterprise contexts*' (Herbane, 2010:44). SMEs suffer from resource constraints that include lack of access to finance, lack of technological resources and constraints related to human resources (Vossen, 1998). SMEs have been affected directly and indirectly by extreme events and yet have fewer resources '*to plan, respond and recover*' (Ingirige et al., 2008:583). In a 2006 report to DEFRA one respondent claimed that, '*there is a big difference between the big companies and the SMEs. Big companies have plans in place for almost all eventualities, small ones don't*' (Peck, 2006:32) and it is commonly accepted that SMEs can be disproportionately impacted by extreme events at an earlier stage.

Vossen (1998) described small (as opposed to large) firms as having several relative advantages. Some examples of these included: little bureaucracy, rapid decision-making, rapid and effective internal communications, shorter decision chains, capacity for fast learning and the ability

to quickly adapt routines and strategies. There is also tendency for work to be more informal and to have a greater face-to-face characteristic due to the size of the organisations (Storey and Sykes, 2006). Additionally, it has also been argued that there are a number of key non-size distinctions experienced by SMEs, the most significant of which, for the purpose of this paper, is the central role of 'uncertainty' (Storey, 1994: 75). Storey earlier highlighted that '*the fundamental characteristic, other than size per se, which distinguishes small firms from large is their higher probability of ceasing to trade*' (1994:78). Given that smaller firms operate with greater external uncertainty in their environment, (Storey, 1994:11) although this may contribute to the low SME survival rate it might also enhance '*flexibility and responsiveness*' (Stokes, 2002:18). Survival in effect becomes part of business as usual. Due to the more difficult market conditions '*the small firm is less concerned with formal systems and its decision-making processes,*' (Storey, 1994:74) and may as a result have a higher tolerance for ambiguity and adapting to change (de Vries and Shields, 2006: 41).

It has been argued that '*today's operating environment calls for new organisational capabilities*' (Rice and Caniato, 2003:23), and yet, perhaps, SMEs possess some of these survival instincts through their exposure to a higher level of environmental uncertainty than experienced by large organisations. The relative strength of small firms is argued to be in terms of behavioural characteristics such as flexibility, adaptability and innovation (Vossen, 1998). Weaknesses are predominantly in relation to resource constraints, as they tend to have fewer financial resources and limited access to capital (Kirchoff, 1994).

2.4: UK policy context

In order to create more resilient organisations, statutory requirements have now been placed upon the private sector companies that constitute the Critical National Infrastructure. It can be argued that this move represents an attempted shift of responsibility from the state to private organisations. The Civil Contingencies Act (2004) focuses on a specific subset of large organisations and yet recent research has found that SMEs struggle disproportionately during extreme events and lack preparedness (Ingirige et al., 2008). The requirements of the CCA are likely to be extended to more organisations. Taking into account characteristics of SMEs (e.g. resource scarcity) this paper explores the extent to which a prescriptive approach would be appropriate for the sector and questions whether SMEs need to be convinced, incentivised or mandated to plan for extreme events, or whether they already possess capabilities within their existing repertoire that will help them to be resilient.

3: Research design

From a comparative study of UK organisational resilience, it emerged that SME participants had both a distinctive perspective and approach when compared to participants from larger organisations. A gap has been identified in understanding how SMEs prepare for, and respond to, extreme events. Taking into account the theoretical framework, this section details how the study was conducted and the data interrogated.

3.1: Sample

This paper presents a subset of data from 11 SME senior managers. This data is taken from the first of a three year research programme that combines qualitative and quantitative data collection stages. Year one consisted of 11 focus groups conducted with senior decision-makers, from across a wide range of UK organisations, based within four UK regions (London and Southeast, Northwest, Yorkshire and Humber and West Midlands). Extreme events have been examined through qualitative research (Meyer, 1982; Gephart, 1984; Roberts, 1990; Vaughan,

1990). The research took a theoretical approach to sampling (Glaser and Strauss, 1968; Strauss and Corbin 1998) and was informed by a pilot study (see Sullivan-Taylor and Wilson, 2006; 2007; 2009). Drawing upon the work of Cornish (2005) organisations that form part of the Critical National Infrastructure (CNI), support CNI or play a role in everyday life were invited to attend the focus groups. The full sample consisted of 161 senior level managers, drawn from 135 organisations including, national and regional government, public and private CNI organisations, multinational companies and a smaller number of SMEs. The SME community was underrepresented, making up only seven percent of the overall sample. The SME sample was distributed throughout the focus group series rather than in a single event. This paper uses the subset of data supplied by the 11 SME managers (detailed in Table 1) and draws upon both verbal and written responses.

[Table 1 about here]

3.2: Data collection

The focus groups lasted between three and four hours and were fully taped and transcribed. Each followed a semi-structured schedule that focussed upon definitions, perceptions and experiences in relation to Weick and Sutcliffe's resilience categories (2001). Focus group discussion was supplemented by a workbook process. Participants were asked to complete a pre-printed workbook, constituted of both open and closed questions, which followed the thematic areas in the overall focus group structure. Participants were also encouraged to note down any additional thoughts. The open-ended data from the workbooks was inputted to a tailor-made online database.

3.3: Data analysis

The qualitative data analysis package NVivo was used to complete interpretive thematic coding. This approach was taken to safeguard against being overwhelmed by the data or destroying its meaning through over-intensive coding (Eisenhardt, 1999:137). The first stage of analysis involved identifying the SME subset within the data and extracting this whilst maintaining the original form of the responses. Analysis was then framed around the Weick and Sutcliffe categories (2001), although emergent themes were also sought out. Several readings were independently undertaken by the authors to identify common key themes and to confirm inter-coder reliability.

4: Findings

The SME data subset was found to have unique characteristics when compared with the full year one dataset. Analysis revealed recurring patterns and themes relating to the Weick and Sutcliffe (2001) categories:

1. **Resourcefulness:** *was a key barrier to SME resilience which related to identifying problems, establishing priorities, and mobilising resources;*
2. **Technical systems:** *was not a major priority for SMEs, but there was an overall emphasis on supply and infrastructure and the role of interorganisational dependence;*
3. **Organisationally:** *SME managers tend to talk about 'muddling through' and question taking action;*
4. **Rapidity:** *SMEs have a positive potential for timeliness and agility; rapidity in practice.*

These themes will be explored in-depth using illustrative quotations drawn from the data subset.

4.1: Resourcefulness is a key barrier to SME resilience

Within the organisational resilience framework '*resourcefulness*' relates to the capacity of managers to identify potential problems, establish priorities and mobilise resources to avoid damage or disruption. Three key themes from the data will be discussed: identifying problems, establishing priorities and mobilising resources.

4.1.1: Identifying problems

The SME managers all perceived their challenges as being different to those experienced by larger organisations. A key distinction was how extreme events were defined:

'An extreme event is anything which is particularly life threatening' (Managing Director, Manufacturing).

'An extreme event could be a major non-payment of an invoice, or flooding, or a failure in our electronic facilities in our workshop' (Director, Manufacturing).

'There are events that happen in small businesses that just totally challenge the existence of the organisation, which you don't get in big ones. For example, the death of a key person in the organisation, I've had that' (Chairman, Enterprise Board).

Extreme events were seen to be more localised and shocks from the macro environment were less likely to be discussed or prioritised.

4.1.2: Establishing priorities

All managers felt that an awareness of their geographic and supply chain context was critical but they did not feel that they had the appropriate skill, knowledge or information to identify the challenges faced:

'We need to know possible issues that could affect us, once we know we can develop plans but we need help with this' (Managing Director, IT and Communications).

The managers felt that it was difficult to identify relevant 'threats' for their organisation in part due to the way in which media *'creates a constant shifting of priorities'* (Managing Director, Manufacturing). Managers perceived that it was difficult for SMEs to pre-empt and therefore plan for extreme events due to lack of consistent information. It was felt by a number of the SMEs that it was the role of Government to not only supply clearer information but to both support their organisation in becoming more resilient and to respond in case of an extreme event. There however appeared to be a lack of clarity about the balance of responsibility and accountability between the organisation, emergency services and the Government:

'There is a need for a clearer understanding of what government can and will do... We have to prioritise our time and we try and do the best we can but are we making the right decisions?' (Director, Housing).

Cash flow and resource were however cited as the key reason why resilience activities were not prioritised.

4.1.3: Mobilizing resources

Without exception, financial resource implications were cited as a key driver of, and barrier to, resilience activities and also as a key differentiator from the larger organisations that were in the focus groups. It was felt, overall, that SMEs cannot be resilient in the same way as larger organisations, as they do not have the *'options, size and resources'* (Chairman, Enterprise Board). Whilst the survival of the organisation was seen to be paramount, and extreme events were seen to be a threat to survival, the concerns of survival, as usual, tended to take precedence over additional resilience activities. Core business and resilience were seen to compete for strategic priority and aligned resource:

'We'll just ignore it because we don't have the resources to do it. It's the difference between a big business and a small business. Big business, you make a decision on the basis of what is value, the small business you make a business decision on the basis of what you can afford' (Chairman, Enterprise Board).

'There is a tension between the investment required and the return on investment... I have to ask myself what the cost is and what financial support we can get' (Managing Director, IT Company).

4.2: Technical systems were not a key focus for SMEs

The organisational resilience '*technical*' category focuses on the ability of managers to ensure that organisational systems perform to high levels, when subject to extreme stress. This category revealed two recurring sub-themes relating to supply and infrastructure, and inter-organisational dependence as detailed below.

4.2.1: Supply and infrastructure

The majority of SME managers were not focussed on performance under conditions of extreme stress. There was some limited focus upon continuity of production lines, supply chain and infrastructure provision. In particular the manufacturing SMEs represented, emphasised '*continuity of business*' supported by good planning and robust technical systems (Director, Manufacturing), but more as part of business as usual, than of resilience.

4.2.2: Interorganisational dependence

A dependence upon external organisations, in particular, supply chain, infrastructure provision and customer base, were seen as critical. SMEs were reported to have limited control and high vulnerability to knock-on effects from extreme events, which affect organisations in their geographic or supply community. Despite this dependence, and recognition of the subsequent need to collaborate, little had been done to understand or mitigate these potential threats:

'Resilience is best achieved through collaboration but we've very rarely considered how resilient our suppliers are' (Director, Manufacturing).

Some of the managers were aware of the opportunity to learn from larger organisations to improve the robustness of their supply dependencies:

[A large high street retail chain] *'worked with some of their small suppliers, they said we've developed a continuity plan; we have an expertise and we want to share that with you and ultimately if you don't have your business continuity plans in place we won't buy from you'* (Managing Director, Business Continuity Consultancy).

An emerging incentive for SMEs also appeared to be the attitude of insurers to business continuity:

'I thought the Local Authority would be on my back but it was my insurance company, saying where's your system, what are you doing?' (Director, Tourism and Leisure).

This raises the potential for suppliers, customers and insurers to create business incentives for resilience activities, that otherwise, may remain unaddressed.

Overall, the managers tended to focus on the day-to-day processes of their own organisation. Resilience was on the agenda only when required by larger firms or insurance companies.

4.3: Organisationally SME managers tend to talk about 'muddling through'

The '*organisational*' aspect of the framework, focusses on the preparedness of managers to make decisions (however counter-intuitive these might sound initially), and to take actions to reduce disaster vulnerability and impacts. A key recurring sub-theme emerged from this analysis, in relation to questioning whether to 'take action'.

4.3.1: Taking action?

As discussed, many SMEs function under conditions of uncertainty and resource constraints as part of business as usual, and as such, additional activities to make the organisation more resilient may not be viable:

'The managing director deals with so many aspects of the business and then you can't have a plan. There's no sophistication because you're battling day to day' (Managing Director, Business Continuity Consultancy).

The managers discussed complacency towards resilience, as both a reality and a challenge for SMEs. It was, however, perceived that the risk was not necessarily complacency *per se*, but rather the *'degree of complacency'* (Finance Director, Travel and Leisure sector). The SMEs reported a key strategic tension in balancing the demands of business as usual and planning for extremes. Views varied widely; many of the managers believed that it was not 'worth' being prepared, whilst to an extent this echoes previous findings (Sullivan-Taylor and Wilson, 2009), it appeared more marked in SMEs:

'I mean certainly if you're looking at a lot of the SME sector, the reality is, its whats the minimum we can do to get away with it' (Managing Director, Consultancy).

'As a small business, being prepared is not worth it. I don't have business continuity plans, it doesn't merit it, as a practical pragmatic view, I will just muddle through. I know in essence time taken to create, maintain, review is quite a cost and if you're not big enough, you can't afford it' (Managing Director, IT and Communications).

'Now, to be blunt, we're a small organisation and we've only got limited resources ... It's not really complacency, it's the practicality ...I've covered my bases, what more do you want me to do?' (Director, Tourism and Leisure).

A Regional Head of Strategy and Business Planning for Business Link believed that it was crucial that this culture of complacency was replaced by *'a culture of business continuity planning'* and this was shared by a number of the managers:

'We need to broaden the awareness of every employee, so its part of the corporate culture, so that there is a robust process for managing extreme events... there is too much reactivity and not enough planning' (Managing Director, Manufacturing).

This section illustrates that the planning and testing approach, familiar to business continuity managers from large organisations, might not be appropriate for SMEs.

4.4: Rapidity: SMEs have positive potential for timeliness and agility

The *'rapidity'* category of the framework focusses on the capabilities of managers to make decisions on threats (e.g. from terrorism) without undue delay. Here the dataset was interrogated to investigate the potential for SME timeliness and agility.

4.4.1. Rapidity in Practice

Even though SMEs may not have the infrastructure or resource base of larger organisations, the smaller number of staff employed and flatter management structures may, in fact, create an opportunity for rapidity under conditions of extreme uncertainty:

'Big companies have resilience that comes from their infrastructure... What the smaller businesses have in their favour is agility' (Managing Director, Business Continuity Consultancy).

Intra-organisational relationships may enable the rapid implementation of decisions, whilst also supplying a support network to staff involved in an unfolding event:

'Because we are a small organisation of 50 people we try and establish relationships and work through them' ... it's more like a family. We support each other and that's actually very important' (Director, Travel and Leisure sector).

Characteristics of SMEs, such as these intra-organisational relationships, may also increase the basis for agility in both *'timing and actions'* (Director, Manufacturing) as a quick response may come from non-technical approaches to the extreme event, where leadership and decision-making is more direct:

'Big business has to do it because they have to engage with an awful lot of people, and communication is very difficult. There are personal responses, in small and medium enterprises, to the risks that occur in business' (Managing Director, Manufacturing).

SMEs may in effect demonstrate resilience capabilities in their day to day survival; what looks like complacency may just be a more cost effective and informal way for smaller organisations to cope with extremes and to quote one Managing Director:

'I mean, in reality, don't underestimate muddling through, because it might be more effective for a small organisation than doing a hell of a lot of planning' (Consultancy).

4.5. Findings summary

The data has been analysed against the four categories in order to examine the extent to which SME managers perceived their organisations to possess resilience capabilities and to begin to validate the appropriateness of these categories to the SME context.

An examination of the *'resourcefulness'* category revealed similar approaches taken by the sampled SMEs towards becoming organisationally resilient: firstly in terms of identifying problems (extreme events were a threat to survival of the organisation); secondly in establishing priorities (complete dependence upon the media or government for advice on risk priorities); and thirdly in mobilising resources (core business and resilience competed for priority and resources). These findings differed from the larger organisations in the dataset.

The *'organisational'* aspect of the framework focusses on the preparedness of managers to make decisions. SME managers were found to prefer *'muddling through'* a crisis rather than taking proactive actions. This was arguably due to the how SMEs inherently manage under conditions of uncertainty and resource constraints as part of *'business as usual'*; hence, questioning the *'one-size-fits-all approach'* to planning for extreme events. This also begins to indicate that SMEs may already possess some of the capabilities to cope with high levels of uncertainty.

The *'technical'* category revealed two recurring subthemes. The ongoing performance of supply and infrastructure, under conditions of extreme stress, differed from the larger dataset due to the heavy dependence upon external suppliers. Due to outsourcing, a lower priority was given to resilience activities. The second sub-theme, inter-organisational dependence, was seen as critical, due to SMEs vulnerable position, however, in practice little had been done to understand or mitigate these potential threats. Managers tended to focus on day-to-day processes and resilience was only prioritised when it was a requirement.

The *'rapidity'* category of this framework focusses on the capabilities of managers to make decisions on threats (e.g. from terrorism) without undue delay. Here the dataset was interrogated to investigate the potential for SME timeliness and agility, and it was found that flatter management structures enable rapid implementation of decisions and increase agility. SMEs may, therefore,

possess resilience capabilities due to their informal approach to addressing problems on a daily basis. It was however found that the lack of a shared vocabulary for managers to discuss their resilience practices, poses a challenge for researchers in this area. Some practices may be interpreted as under-preparedness, when they might actually be resilience, in another form.

5: Discussion:

Several key themes are revealed in the data. By applying the Weick and Sutcliffe's categories (2001) *resourcefulness*, *technical*, *organisational* and *rapidity* to the subset of data from SME senior decision-makers it was found, that the traditional challenges faced by SMEs in terms of resource scarcity, cash flow and dependence upon external infrastructure and systems (Storey, 1994) were also pertinent to the concept of resilience. Whilst broadly developed from a study of larger organisations, the categories did seem to have some resonance for the SME managers. There was a tendency for the SME managers to focus upon 'muddling through' extreme events and this in part was attributed to constraints in the areas of *resourcefulness*, *technical* and *organisational* capabilities. However, *rapidity* was seen by the managers as an important existing capability. Storey argues that uncertainty is a fundamental characteristic for SMEs (1994:78) and this was found to be critical in the managers framing of extreme events and resilience. SMEs routinely cope with ambiguity and adapt to change, due to their vulnerable market position (de Vries and Shields, 2006:41); this capacity for *rapidity* was found in everyday practices.

Practices such as tight knit intra-organisational relationships and flat organisational structures (Storey and Sykes, 1996) were seen to lead to rapid decision-making and implementation, and this in turn, was identified as creating flexibility in the mode of response to extreme events. Survival was identified by many of the managers as part of daily routine, and therefore, it wasn't a case of meticulous preparation for a specific extreme event scenario, but rather being able to adapt and improvise as the environment is altered, a capability also identified as significant to resilience by Weick and Sutcliffe (2001). Many of the managers felt that given the limited resources available, resilience activities such as dedicated resilience managers were neither feasible, nor desirable. Resilience was not prioritised over core business practices and the managers felt the need to survive the day-to-day crises as opposed to the big event. The exception was, if a potential extreme event were to directly threaten the cost base of the organisation in the short term. Examples of such 'extremes' were more likely to take the form of a major non-payment by a customer or the death of a key staff member. The extreme events reported as relevant to SMEs were less focussed on the exogenous shocks, such as terrorism or extreme weather events, that are often prioritised by larger organisations (Sullivan-Taylor and Wilson, 2009). The vulnerability of SMEs to extreme events is highlighted by the application of the Weick and Sutcliffe categories (2001), but this process also revealed strengths that smaller organisations can build upon to become more resilient.

6: Conclusions: implications for policy and practice

This paper attempts to begin to address the gap identified by Herbane (2010), by examining the extent to which the Weick and Sutcliffe (2001) framework is an appropriate and useful approach to the examining resilience capabilities in the SME sector. Within the SME data subset limited evidence of capabilities in the *resourcefulness*, *technical* and *organisational* categories were found but relative strength was found in the area of *rapidity*. This paper has therefore found that the framework did resonate with the SME sector but that this requires further examination with a larger sample in order to validate these findings. The reported analysis will therefore help to inform future construct building for survey work in year three of the full study.

The frequency of extreme events, such as severe flooding, appears to be increasing (Ingirige et al, 2008) and whilst some SMEs may have been able to 'muddle through' in the past, this may prove increasingly difficult. SMEs do not hold the resources and technical systems often equated with resilience capabilities and despite the nimbleness and flexibility demonstrated by some

SMEs, there may be a need to become more strategic and proactive in their approach to managing the threat and actuality of extreme events. SMEs typically possess limited resources, and there may be a need for tailored guidance and assistance with the execution of extreme event planning and response. As SMEs constitute such a large part of UK industry the impact of failing to deal with extreme events in their macro environments may have an impact far beyond the single organisation. The significance of the SME sector combined with the current shift in Government policy towards individual and organisational, as opposed to Government responsibility, may require an intervention in the form of specific guidance and support for SMEs.

In the context of resilience one size of regulation or advice arguably does not fit all and it is argued that this is due to the impact of organisational size upon the type of resilience capabilities that an organisation might possess. SMEs are often not able to dedicate financial resources to managing uncertainty, and policy may need to be formulated with this in mind. Guidance or regulation, requiring meticulous planning and dedicated resources may drive more SMEs closer to complacency than resilience, as these goals may be viewed as unachievable, given other constraints. The language of organisational resilience may also seem irrelevant to SME managers and context sensitive re-framing may be required to move this up their organisational agendas. There is arguably a need to frame organisational resilience around the key strengths and capabilities already possessed by SMEs, identified as rapidity and agility, which will help them to deal with uncertainty in ways which suit their organisational context, and operational constraints, in order to overcome the culture of complacency.

This study will form the basis for survey work which will include an SME sample in order to examine the extent, to which resilience is an organisationally contingent concept in practice. Further research is also necessary to investigate how SMEs can develop resilience capabilities given their existing knowledge-base and resource constraints. This research also calls for further consideration of how large organisations can potentially learn from SMEs about adaptation and, therefore, resilience in the face of extreme events.

This paper draws upon research supported by Cabinet Office Grant no: 02078391462

References

Aldrich, H.E. (1979). *Organisations and Environments*. Prentice-Hall: New York.

BIS (2009) *Statistical Press Release URN 09/92 14.10.09*. Accessed: December 2009. Accessible: <http://stats.berr.gov.uk/ed/sme/smestats2008-ukspr.pdf>

Barney, J. B. (1995). Looking inside for competitive advantage, *Academy of Management Executive*, 9(4), 48-61.

Bolton, J. E. (1971). *Small Firms: Report of the Committee of Inquiry on Small Firms*. Cmnd 4811.HMSO: London.

Civil Contingencies Act (2004). Accessed: December 2009. Accessible: http://www.opsi.gov.uk/acts/acts2004/ukpga_20040036_en_1

Coaffe, J. and Rogers, P. (2008). 'Rebordering the City for New Security Challenges: From Counter-terrorism to Community Resilience', *Space and Polity*, 12(1), 101-118.

Cornish, P. (2005). Civil Defence and Public Resilience: the Homeland Security of the United Kingdom. In, K. von Hippel (Ed.), *Europe Confronts Terror*. Basingstoke: Palgrave Macmillan.

Cummings, S. and Wilson, D. (2003). *Images of Strategy*, Blackwell: Oxford.

- de Vries, H. and Shields, M. (2006). Towards a Theory of Entrepreneurial Resilience: An Analysis of New Zealand SME Owner–Operators. *The New Zealand Journal of Applied Business*. 5, (1), 33-44.
- Eisenhardt, K.M. (1999). Strategy as Strategic Decision Making, *Sloan Management Review*, 40, (3),65.
- Gephart, Robert P. Jr. (1984). Making Sense of Organisational Succession: An Ethnomethodological Approach. *Administrative Science Quarterly*, 28, 553-581.
- Glaser, B. G. and Strauss, A. L. (1968). *The Discovery of Grounded Theory*. Aldine: Chicago.
- Hamel, G. and Valikangas, L. (2003). The quest for resilience, *Harvard Business Review*, September, 52-63.
- Helfat C.E. and Lieberman, M.B. (2002). The birth of capabilities: market entry and the importance of pre-history. *Industrial and Corporate Change*, 11, (4), 725-760.
- Herbane, B. (2010). Small Business Research: Time for a Crisis-Based View. *International Small Business Journal*. 28, (1), 43-64.
- Ingirige, B & Proverbs, D. and Jones, K.G. (2008). 'Investigating SME Resilience and their Adaptive Capacities to Extreme Weather Events: A Literature Review and Synthesis', *CIB W89, Building Education and Research (BEAR), Sri Lanka*.
- Kirchhoff, B.A. (1994). *Entrepreneurship and Dynamic Capitalism: The Economics of Business Firm Formation and Growth*. Praeger Press: Westport: CT.
- McGee, Thomas and Wilson (2005). *Strategy: Analysis and Practice*. McGraw-Hill Education: Berkshire.
- Meyer, A.D. (1982). Adapting to Environmental Jolts. *Administrative Science Quarterly*, 27, 515-537.
- Peck, H. (July 2006). *Resilience in the Food Chain: A Study of Business Continuity Management in the Food and Drink Industry. Final Report to the Department for Environment, Food and Rural Affairs*. Accessed: December 2009. Accessible: http://randd.defra.gov.uk/Document.aspx?Document=FT0352_4705_FRP.doc
- Penrose, E.T. (1959). *The Theory of the Growth of the Firm*. Oxford University Press: New York.
- Perrow, C. (1984). *Normal Accidents: Living With High-Risk Technologies*. Basic Books: New York.
- Pfeffer, J. and Salancik, G. (1978). *The External Control of Organisations: A Resource Dependence Perspective*. Harper & Row: New York.
- Rice, J. B. and Caniato, F. (2003). Building a Secure and Resilient Supply Network. *Supply Chain Management Review*, 7, (5), 22-30
- Roberts, K. (1990). Some Characteristics of One Type of High Reliability Organisation. *Organisation Science*, 1, 160-176.
- Robbins, D.K., Pantuosco, L.J., Parker, D.F. and Fuller, B.K. (2000). An Empirical Assessment of the Contribution of Small Business Employment to US State Economic Performance. *Small Business Economics*, 1, (4), 239-302.

- Runyan, R.C. (2006). Small Business in the Face of Crisis: Identifying Barriers to Recovery from a Natural Disaster. *Journal of Contingencies and Crisis Management*. 14, (1), March, 12-26.
- Starbuck, W.H. and Farjoun, M. (2005). *Organization at the Limit: Lessons from the Columbia Disaster*. Malden, MA: Blackwell Publishing
- Stokes, D. (2002). *Small Business Management*. Cornwall: Thomson.
- Storey, D. (1994). *Understanding the Small Business*. London: Thomson.
- Storey, D. and Sykes, N. (1996). Uncertainty, Innovation and Management. In, Burns, P. and Dewhurst, J. (Eds.). *Small Business and Entrepreneurship* (2nd edition). Basingstoke: Macmillan.
- Strauss, A. L. and Corbin, J.M. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks/Sage: California.
- Sullivan-Taylor, B. and Wilson, D.C. (2006). Rare Events, Uncertainty and Organisation: Sensemaking and Theories of Action in the Perceived Threats from Terrorism. *Paper presented at the 22nd EGOS Colloquium*, 6 – 8 July, Bergen, Norway.
- Sullivan-Taylor, B. and Wilson, D.C. (2007). Resilience and Complacency in the Private Sector'. In, Cornish, P. (Eds.). *Britain and Security: Threats; Policy Responses; Technology and the Private Sector; and Values in Security*. London: Chatham House & Smith Institute Joint Policy of Response Publication.
- Sullivan-Taylor, B. and Wilson, D. C. (2009). Managing the Threat of Terrorism in British Travel and Leisure Organizations. *Organization Studies*, 30: 251-276.
- Vaughan, D. (1990). Autonomy, Interdependence and Social Control: NASA and the Space Shuttle Challenger. *Administrative Science Quarterly*, 35, 225-257.
- Vossen, R.W. (1998). Relative Strengths and Weaknesses of Small Firms in Innovation. *International Small Business Journal*, 16, 88-94.
- Weick, K. E. and Sutcliffe, K.M. (2001). *Managing the Unexpected — Assuring High Performance in an Age of Complexity*. San Francisco: Jossey-Bass.
- Williams, M. and Cowling, M. (2009), *Annual Small Business Survey 2007/08*, Department for Business, Enterprise and Regulatory Reform (BERR). Accessed: December 2009. Accessible: <http://www.employment-studies.co.uk/pubs/report.php?id=berr09p74>
- Wilson, D.C., Branicki, L., Wilson, A. and Sullivan-Taylor, B. (2010). Extreme Events, Organizations and the Politics of Strategic Decision Making. *Accounting, Auditing and Accountability Journal*, 23: 699-721.
- Wynarczyk, P., Watson, R., Storey, D., Short, H. and Keasey, K. (1993). *The Managerial Labour Market in Small and Medium Sized Enterprises*. London: Routledge.

Table 1: Sample of SME participants

Participants Organisational Role	Type	Sector
Director	Business Continuity Consultancy	Private
Head of Strategy and Business	Business Link	Network
Managing Director	Consultancy	Private
Chairman	Enterprise Board	Network
Director of health and safety	Housing	Private

Managing Director	IT and Communications	Private
Director Engineering and Sales	Manufacturing	Private
Managing Director	Manufacturing	Private
Director	Tourism and Leisure	Voluntary
Commercial Director	Tourism and Leisure	Voluntary
Commercial Director	Tourism and Leisure	Private