

Entrepreneurial Skill and Regulation: Evidence from Primary Sector Rural Entrepreneurs¹

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Structured Abstract

Purpose

In this paper we undertake a qualitative case-based analysis of the factors affecting the capability of primary sector rural entrepreneurs to manage regulation. We suggest a conceptual framework to aid understanding of their skill and capability when managing regulation.

Design/methodology/approach

Using a multiple case study approach the entrepreneurial skill of rural entrepreneurs is examined in light of three sets of factors: institutional regulatory, social capital and economic market.

Findings

Our case analysis indicates diversity in the skill of rural entrepreneurs to manage regulation across sub-sectors including dairy and stock farming, fruit growers and vegetable/horticultural producers. Our conceptual framework indicates that there are three areas that influence entrepreneurial skill: relationships with national cooperatives, relationships with the institutional regulatory environment, and relationships with the economic market environment. This provides us with a conceptual framework to aid understanding of the interplay of factors affecting entrepreneurial skill and capability to manage regulation.

Originality/value

This study contributes to the emerging stream of literature highlighting the importance of industry sector context for understanding the complex and differing regulatory effects on entrepreneurs' skill and hence capability to manage. Case comparisons allow us to explain and understand why entrepreneurs that operate similar businesses within the same sector respond differently to regulation.

Keywords

Regulation, primary sector, rural entrepreneurship, social capital, entrepreneurial skill.

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Introduction

The capability of entrepreneurs and small firms to manage the extent and complexity of regulation is dependent upon their entrepreneurial skill and this has been a major concern of small firms' member associations and representatives of entrepreneurs worldwide. The World Bank measures and monitors business regulation through their annual reports on *Doing Business* (World Bank, 2014). Indications from this are that regulation has been 'modernised' by a number of countries as they seek to reduce potential obstacles to 'doing business'. Yet the issue of coping with the complexity of regulation still features prominently and regularly in small firm surveys in many developed economies. Being 'rural' may exacerbate this; McElwee and Smith (2012) for example identified 'regulation' as a barrier to entrepreneurialism and diversification in rural businesses.

The nature of regulation is distinctive by sector and although regulation and the impact this has on entrepreneurs and their responses has received much attention (Chen *et al.*, 1998; Pyysiainen *et al.*, 2006), the context of industry sector dimension has yet to achieve the same level of attention from researchers. It is known that the ability to cope with regulation can vary across entrepreneurs in the same sector, Ram *et al.* (2003) and Edwards *et al.* (2003 and 2004) have shown that entrepreneurs in the same sector may respond to regulation in different ways.

In the primary sector, rural entrepreneurs face a complex range of regulatory requirements, required by central, regional and local authorities. These are concerned with animal and food safety, bio-security, environmental regulations, land use regulations and resource consents. Given that rural entrepreneurs, especially those in the primary sector, often have limited resources and networks compared to their urban counterparts (Anderson *et al.*, 2010), managing industry specific regulatory requirements can demand additional entrepreneurial skill for primary sector rural entrepreneurs.

Lang *et al.* note that future place-based entrepreneurship studies are needed to capture the institutional embeddedness of entrepreneurial skill and responses in rural, suburban and urban settings (2014, p. 223). Therefore, our paper answers recent calls for contextualising entrepreneurship research and theories (Welter, 2011; Wright, 2012).

There is still a research gap in understanding differing responses of entrepreneurs, in similar firms and in the same sector, in the context of managing regulation. There is also still limited research that has been devoted to understanding the perceptions and responses of owner-managers to regulation through qualitative research (Kitching, 2007; Kitching *et al.*, 2015). This paper addresses this research gap by using a case study approach to build a conceptual understanding of the factors that affect rural entrepreneurs' skill and capability to manage regulation. We follow Chell's (2013, p. 22) approach to skills, where a skill set is seen as multi-dimensional and includes know-how, emotion and behaviour (or actions).

To understand entrepreneurial skill more fully and within specific contexts, it has been suggested that there is a need for studies that take account of spatiality, embeddedness in local networks and local regional economic environments (Down *et al.*, 2012). Our study seeks to contribute further to understanding of entrepreneurial skill within a specific spatial and environmental context, that is, within local rural environments and the primary sector. Using the lens of institutional theory, we adopt a case study methodology and a sector focus to identify the factors that affect capability to manage regulation in a specific sector (Battisti *et al.*, 2011).

This study contributes to the emerging stream of literature highlighting the importance of the industry sector (context) for understanding the complex and differing regulatory effects on

firms and associated entrepreneurial responses (Kitching, 2006; Welter, 2011; Kitching *et al.*, 2015). Case comparisons of dairy, sheep and cattle farmers as well as fruit and vegetable growers allow us to explain and understand why entrepreneurs that operate similar businesses within the same sector respond differently to regulation. Our case-study approach highlights the contextual factors and processes that contribute to the complexity inherent in entrepreneurial skill responses. While previous work has tended to investigate these contextual and procedural factors in isolation, this study develops a conceptual framework that enhances our understanding of the different responses of entrepreneurs to regulation. To achieve this we introduce literature and previous work, including entrepreneurial skill and institutional theory in relation to regulation. We then outline the focus of the research issue, the research method and present our findings. We discuss a conceptual model which helps to illustrate factors affecting rural entrepreneurs' skill set and capability to manage regulation. Finally, we suggest some implications for entrepreneurs, policy makers and researchers.

Literature and Previous Work

Entrepreneurial skill, the nature of rural entrepreneurship and the impact of regulation are discussed here. Then, two theoretical areas are drawn upon to underpin our approach to understanding entrepreneurial skill and the impact of regulation; these are institutional theory and social capital theory.

Entrepreneurial skill

Entrepreneurial skill incorporates behaviour which may be strategic, tactical and personal (Chell, 2013). Benjamin (2006) defines entrepreneurial behaviour as 'a process of strategic thinking required to maintain an independent belief system that supports discovery, exploration and exploitation of wealth opportunities that destabilize prior market equilibrium, demonstrating innovation, creativity and entrepreneurship to generate new flexible, adaptive and responsible market spaces that reward people ready, able and willing to meet emerging individual and societal needs, wants, hopes and expectations' (p.6). Entrepreneurial skill incorporates attitudes that have a specific object and can be approached also as something that can be changed through communication or experience (Shaver, 1995, Pyysiainen *et al.*, 2006). Pyysiainen *et al.*, (2006) note that skills related to social resources, social ties or networks and therefore for improving social embeddedness are important for diversified rural businesses. These authors also note that farmers' entrepreneurial actions can be related to situational and personal factors. For example, the authors suggest that entrepreneurial tasks may be seen at two levels – basic functional skills and the critical meta level tasks such as pursuing opportunities and social networking – both of which are highlighted in our study.

Many formulations of entrepreneurial skill imply the presence of situational factors: markets, customers, investors or human resources, social networks and ties (for example Pyysiainen *et al.*, 2006). We argue that these situational factors become even more prevalent in a rural context.

Why does rural make it different?

Rural entrepreneurship can be defined as all forms of entrepreneurship that take place in areas characterised by large open spaces and small population settlements relative to the national context (Kalantaridis and Bika, 2006). This definition is helpful to us here as we are trying to understand rural entrepreneurship and responses at an aggregate level. Korsgaard *et al.* (2015) explore the concept of 'rural' as a socio-spatial concept in rural entrepreneurship and also

distinguish between types of rural entrepreneurship. We note from this that there are different types of rural entrepreneurship and that these engage in different ways with their rural setting.

Additionally, we note that an entrepreneurial activity is ‘distinctly rural’ if it needs arable land. It is sometimes easy to ‘see’ that a venture is essentially rural, yet it is less straightforward to state *why* this is the case as well as how rural entrepreneurship can be defined as a construct (Korsgaard *et al.*, 2015). Despite this, rural entrepreneurship, for us, draws on the innate (natural, cultural, historical, human, social and/or financial) resources of a place where the venture needs to support its development (Jack and Anderson, 2002; Johannisson and Dahlstrand, 2009; Gaddefors and Cronsell, 2009).

Burnett and Danson (2004) note that, arising from research exploring socio-economic frameworks of rurality, is the fact that any conception of the rural sphere must be framed within recognition of its complexity. They also note that theory has stressed the importance of the local and the regional environment in realising the benefits of tacit knowledge, learning, trust and cooperation; and also that the actions of entrepreneurs within these contexts depend on their locational context. Stathopoulou *et al.* (2004) suggest that rurality defines a territorially specific entrepreneurial milieu with distinct physical, social and economic characteristics: ‘location, natural resources and the landscape, social capital, rural governance, business and social networks, as well as information and communication technologies, exert dynamic and complex influences on entrepreneurial activity in rural areas (2004, p. 404).

Being *rural* also means some distinct characteristics for the businesses/entrepreneurs operating in that context. For example, time and distance between suppliers, services, and distributors. It includes loss of capital from decline in primary sectors (particularly sheep and beef in New Zealand’s case), falling local incomes and demand following deindustrialisation, as traditional industries close plants. Also, selective depopulation with the more skilled, younger and educated tending to move away for education and jobs and local difficulties in achieving economies of scale and scope in networking opportunities (Burnett and Danson, 2004), are also noted by these authors and others (e.g. Deakins *et al.*, 2002).

Regulation

Managing regulation is not often noted in the lists of tasks generated when defining and describing entrepreneurial skill sets; yet it impinges on many sub-skill sets which typically include marketing, innovation, management, risk taking and financial control (Chen *et al.*, 1998; Pyysiainen *et al.*, 2006). Managing regulation is an important element within an entrepreneurial skill set.

Kitching (2006) indicates that there are critics and proponents of regulation, but that regulation is necessary to achieve economic development and growth. There is also a paradox inherent in regulation; it can be used to advantage by entrepreneurs through meeting minimum requirements and ensuring quality of production. Entrepreneurs may also voluntarily adopt standards through cooperative action that go beyond state or legislative requirements (Camisón-Zornoza and Boronat-Navarro, 2010).

Regulation policies may be classified within a taxonomy of categories (Gouldson, 2004). These categories have been specified as ranging from command and control regulation policies to collective voluntary ones where regulation is determined by collective action of entrepreneurs. They typically include the following categories:

- Command and control:- coercive regulation policies and will impose sanctions for non-compliance.
- Market-based:- sets the level of standards, but allows entrepreneurs to decide how to meet those standards.
- Information-based:- mandatory obligations, but threat of sanctions is based on information
- Voluntary individual self-regulation:- based on voluntary agreement undertaken by individual entrepreneurs to institute proactive policies, but without sanctions or coercive power.
- Voluntary co-operative:- rural entrepreneurs may act in a collective way through membership of networks, clubs etc to achieve voluntarily set standards.

Another way of considering regulation, particularly in relation to the rural context, is that suggested by Gorton *et al.* (2011) when they report that farmers operating under extensive private regulation are more likely to obey appropriate public regulation. While Gorton *et al.* (2011) focus on implementation and enforcement (rather than the process of standards setting), they do report that some [rural] producers operate in a regulatory void and others are subject to extensive external control via private standards. Somerville *et al.* (2015) go so far as to suggest a particular view on regulation and rurality – that rural culture is associated with wider dislike or occasional rejection of government regulation.

Such theoretical considerations imply that entrepreneurs in rural areas face a number of issues in managing regulation that may incorporate all elements of the categories of regulation policies identified above. As noted earlier, these include access to information, technology and limited opportunities to access networks. These considerations make entrepreneurs in the primary sector and rural locations an important focus.

While many studies have alluded to the additional barriers that rural entrepreneurs (farmers) face in respect to regulation (eg. McElwee and Robson, 2005; McElwee, 2006; McElwee and Annibal, 2010; McElwee and Smith, 2012), recent research in the farm sector by McElwee and Annibal (2010) goes further and suggests that farmers are weak in skills such as business and management and also have difficulty in accessing appropriate skilled labour. McElwee and Smith (2012) have also identified ‘regulation’ as a barrier to entrepreneurialism and diversification in rural businesses. They also note that “...as well as finance, the [rural] entrepreneur usually has to possess the land, the skill sets and the networked contacts to be able to operate effectively” (2012, p.21).

Institutional theory

Many formulations of entrepreneurial tasks and skills imply the presence of situational factors: markets, customers, investors or human resources, social networks and ties for example (Pyysiainen *et al.*, 2006). We argue that these situational factors become even more prevalent in a rural context and that institutional theory is one way of making sense of some of these situational factors.

Institutional theory implies that organisations such as small firms operate within a social and legal framework of socially shared norms and values (Smallbone *et al.*, 2012). In institutional theory, a distinction is made between formal and informal institutions, which in the case of the latter include social norms and codes of behaviour that emerge over time as a result of repeated interaction. Institutional theory can provide a useful lens through which entrepreneurial skill

and actions can be understood in relation to a specific regional environment and context. Decision making can only be understood in relation to a specific regional environment which determines the set of rules and regulations, or regulation policies, that small firms operate within (North, 1991). Institutional theory implies that organisations, such as SMEs, operate within a social and legal framework of socially shared norms and values. Scott (1995) has developed this concept further where institutions are “social structures that have attained a high degree of resilience” (Scott, 1995, p. 33). The legal and social systems will influence entrepreneurs’ actions and strategic decision-making (Hessels and Terjessen, 2010).

Local and regional policy environments provide the context in which to understand strategic decision-making by entrepreneurs. Decisions will be made that can only be understood in the context of the regulations of the local environment. This needs to be narrowed further to sector specific entrepreneurs as the regulatory environment, especially in the primary sector, is sector specific. Institutional theory assumes that entrepreneurs will have limited information and will operate with bounded rationality in their decision-making (Simon, 1997). Hence, they will seek means to improve their information set by joining networks which maximise their resources such as cooperatives and producer associations. The New Zealand situation with regard to cooperatives and producer associations will be outlined in the context section later in this paper. This concept of joining networks highlights an important point about the nexus between our two underpinning theory strands (institutional theory and social capital). We contend that this is an illustration of the connection between the two concepts, where the network provides a source and reservoir of information, but can also play a role in the influencing the institutional framework, for example, by lobbying for change in the regulatory environment.

Social capital

As noted above, institutional theory and social capital are linked, particularly in relation to entrepreneurs and regulation. Social capital is derived from networks and relationships in which entrepreneurs are embedded (McKeever *et al.*, 2014; Kitching *et al.*, 2015) and is a significant factor in entrepreneurial performance (Stam *et al.*, 2014). However, we have already noted that institutional theory indicates that entrepreneurs operate within a specific legal and social contextual framework that includes shared values (Smallbone *et al.*, 2012). This is closely related to the construct of social capital by Coleman (1988) where ‘closed’ professional networks are more likely (than sparse and incomplete networks) to allow members to share tacit knowledge through common values. However, in Burt’s (1997) construct of social capital, the structural nature of sparse networks provides access to a wider range of information (Rost, 2011). Institutional theory indicates the importance of the situational context which will then determine the extent, nature and structure of networks.

Networks and access to social capital can be seen as having three dimensions; structural, functional and cognitive (Nahapiet and Ghoshal 1998), with perhaps access to the cognitive dimension being the most important since this implies a shared understanding of the value of relationships. For example, Jonsson and Linbergh (2011) indicate its importance for accessing external finance. Thus the dimensions of social capital add to both human and financial capital of firms. In an extension of the resource-based view (RBV) of the firm, social capital is seen as a relational concept in which the extent of an entrepreneur’s embeddedness in networks is a key factor influencing the acquisition of resources (Nahapiet and Ghoshal, 1998). In this approach the entrepreneur is able to use networks to access a ‘reservoir’ of knowledge. As indicated by Anderson and Jack (2002, p. 195) this can give access to tacit knowledge as well as actual physical resources.

“This reservoir, or network of resources and information, may represent and offer a rich source of explicit and implicit knowledge, experience and privileged access to physical resources.”

Social capital needs to be understood in terms of local institutions and entities (Cohen and Fields, 1999). It has been suggested that social capital is spatially limited or ‘space bound’ (Westland and Bolton, 2003), dependent on the local and regional institutional environment. Hence the process of acquisition of social capital through networks and personal relationships is inter-dependent with the institutional environment.

The confidence and actions of entrepreneurs is further reinforced by the level of trust that is developed in a specific regulatory environment (North, 1991). Trust is recognised as a key factor affecting the process of acquiring resources, whether tacit or physical, from entrepreneurial relationships and networks (Anderson and Jack, 2002). Entrepreneurs need to have confidence and trust in the regulatory environment, enabling trading to take place (Kitching, 2006). For example, at a basic level this might mean ensuring property and contract rights are upheld. Regulation may go further, where there is perceived market failure, for example in regulating financial providers.

Managing regulation in the rural environment

The capability to manage regulation does not appear to be homogeneous across all businesses. For example, where case studies have been undertaken, they have revealed that some entrepreneurs are better able to manage regulation than others in the same sector (Ram *et al.*, 2003). This is likely to reflect differences in entrepreneurial skill. For example, this could be because of differences in an entrepreneur’s awareness of regulation (Fairman and Yapp, 2005), different attitudes towards regulation (Vickers *et al.*, 2005) or different capacity to discover, interpret and adapt to regulation (Kingston Small Business Research Centre, 2008). Further, research has revealed that entrepreneurs may have some discretion to adapt to or comply with regulation depending on business resources and market contexts (Blackburn *et al.*, 2005, Edwards *et al.*, 2003) and that they also have variation in motivation to comply and adapt (Amodu, 2008).

In the UK, the Burgess (2008) Rural Advocate’s report highlighted a number of factors that inhibited rural business development, innovation and productivity, but specifically that rural businesses struggle to access government support and to work in partnership to address the obstacles they face (e.g. planning, infrastructure, accessing services or training) (McElwee and Annibal, 2010). Institutional embeddedness of entrepreneurial actions is also noted, Lang, *et al.* (2013) suggest that the influence of regulative institutions in local entrepreneurship is tempered, if not superseded, by specific place dependent normative and cognitive institutions and that the fit between the different institutions is decisive for the emergence of entrepreneurial actions in a specific location. They show how rural entrepreneurship is affected by different local institutional contexts and how entrepreneurs are able to change, directly or indirectly, local institutions over time, in turn shaping rural entrepreneurial activity.

De Rosa and McElwee (2015) write on rural development policies and the support of family firms in rural areas (in the EU). They find that recent European rural policies provide rural entrepreneurs with opportunities that may lead to strategic development of farm ventures and that ‘little is known about the extent of clustering and networking in the farm sector and [this] requires further exploration’ (p.22). De Rosa and McElwee (2015) also note that recent literature examples have not devoted enough attention to farmers’ ability to gain access to rural development policies. We see that many European studies currently focus on the EU’s Common Agricultural Policy (CAP) Policies, for example on generational renewal, income

support, farm diversification, quality packages and so on (De Rosa and McElwee, 2015). While the New Zealand environment does not have such a focus, the messages remain relevant and we see that a 'New Rural Paradigm' (OECD, 2006) has emerged, depicting new roles for multifunctional farmers for example (De Rosa and McElwee, 2015; McElwee and Smith, 2012).

De Rosa and McElwee (2015) also suggest that rural entrepreneurship is context specific because of a different set of opportunities. They suggest that entrepreneurs working in rural marginal areas should behave differently.

McElwee (2008) underlines the scarcity of advice to support farmers and a lack of support services and trained extension staff, separately identified as barriers to entrepreneurship by Kahan (2013) become linked barriers in the case of rural enterprises (De Rosa and McElwee, 2015). McElwee and Smith (2012) also contend that farmers do not systematically access business advice networks and that they are less likely to access opportunities because of limited social networks.

The importance of international economic market factors for primary agricultural producers has been highlighted by a number of economic reports. For example, the Corliolis Report, for the former New Zealand Ministry of Economic Development in 2012, indicated that there was a need for the sector to increase the extent of value-added gains in the food processing sector in the light of the increasingly competitive international economic markets. The report pointed in particular to the potential from increased exports from the food processing sector (Corliolis, 2012). The OECD's round table discussions of member nations has identified the potential role of monopsony buyer on producers, that is, single buyer power of large retail corporations (OECD, 2007). Others have identified critical trends in the sector, including international pressures and potential state responses (see for example, Wissemann *et al.*, 2003).

Research Issue

In this study we explore the factors that impact on rural entrepreneurs' skill set and hence capability to manage regulation. In particular we focus on the dynamic relationship between three sets of contextual factors: institutional regulatory; social capital; and market economic on primary sector rural entrepreneurs' skills and actions and, hence, capability to manage regulation (see Figure 1).

Research Methods and Context

New Zealand is a small open economy with a population of around 4.4 million (<http://www.statistics.govt.nz>) distant from major centres of population. Large areas of New Zealand can be considered to be remote and rural. There are only three cities with a population of more than 300,000 – Auckland (largest), Wellington and Christchurch. Together these cities account for about half of New Zealand's population (Statistics New Zealand, 2010).

New Zealand's regulatory environment, like other developed nations is determined by a combination of local, regional and national government bodies. Perhaps because of this regulatory environment, New Zealand has proportionately a high business population per capita with over 457,000 registered businesses (Ministry of Economic Development, 2010). However, with 98 per cent of firms employing fewer than 50 employees, 89 per cent employing 5 or fewer and 68 per cent having no employees, the number of small firms in New Zealand is broadly comparable internationally.

New Zealand has traditionally had a strong primary sector. This strong primary sector accounts for 9.2% of GDP, compared to an OECD average of 2.0%. This contribution is reinforced by a manufacturing industry that contains an important food manufacturing sub-sector. The primary sector accounts for 25% of the value of New Zealand's exports (NZIER, 2012). In this respect, the capability and performance of the agri-business sector is disproportionately important for the local, regional and national economies.

Rural contexts are characterised by a number of factors, shaped by markets and legislation; compelling rural entrepreneurs to engage in processes related to regulation. Examples of regulation within the New Zealand context are shown and described in Table 1. Some of these are specific to New Zealand, for example the Resource Management Act (RMA) and the New Zealand Emissions Trading Scheme (NZETS). These two regulations help to shape the context in New Zealand and are described here as they are mentioned later when we discuss analysis of our case material.

[Take in Table 1: Examples of Regulation in the New Zealand Context]

Examples of cooperatives in New Zealand are Fonterra, Silver Fern Farms, ENZA and Turners and Growers. Cooperatives are a feature of New Zealand's primary sector and are in some cases the dominant market force in a sector. See Table 1 for a description of these cooperatives.

These organisations have their own set of voluntary regulation around safe and secure farming practices and members are regularly audited. Such voluntary cooperative regulation is expected to increase because of the growing demand (by buyer corporations) to track produce to source origin. Cooperatives play a major role for rural entrepreneurs and the businesses in this sub-sector not only by monitoring voluntary regulation, but by facilitating the development of systems and processes to deal with regulation.

Previous work on the impact of regulation and entrepreneurial skill has had a bias in approach to quantitative and survey-based work (see studies mentioned earlier in this paper, for example, Kitching, 2007). More recent work has included qualitative and case based research and has indicated that entrepreneurs can have a wide range of responses which may be complex in nature (Edwards *et al.*, 2003 and 2004; Kitching, 2006 and 2007; SBRC, 2008).

The study reported in this paper, is part of a large scale qualitative research programme that examined small business capability to comply with regulation. This paper focuses on the 17 cases that were recruited from the rural primary sector. These case interviews consisted of dairy, sheep, and cattle farmers, as well as fruit and vegetable growers. In the light of our research questions we consider cases from two sub-sectors:

- Dairy, sheep and cattle farming (10 cases)
- Fruit and vegetable growing (7 cases)

The rationale for the focus on these 17 cases is in response to the need to examine rural entrepreneurs' skill sets and actions in the cases of specific sectors and specific local regulation policy environments, as outlined in our literature review. The primary sector provides an environment that is closely regulated and localities may be close to areas that are conservation areas or have strict environmental controls. In addition, there are regulations which govern

agricultural production that are concerned with health and safety, food production and these cases include examples of voluntary regulation. Hence, it is argued that these cases provide an opportunity to examine rural entrepreneurs' skill sets and actions across a range of regulation environments.

This focus also reflects the need to take account of the embeddedness of rural entrepreneurs in local networks and hence their access to social capital. In our discussion of social capital we have indicated that it will be influenced by the extent of an entrepreneur's embeddedness in networks and that it will influence the acquisition of resources.

Our inductive approach and process for interpretation of results, including building theory from cases, is based upon that recommended by Eisenhardt and Graebner (2007). They argue for theoretical sampling where cases are selected because they are particularly illuminating or illustrative or chosen because they will have theoretical insight. Multiple case studies provide a strong base for theory building (Yin, 2003). Eisenhardt and Graebner (2007, p. 27) suggest that cases should be selected for their capacity to shed light on contrasting ability and experience. The multiple case study approach has enabled replication logic to be applied to build concepts and interpret findings (Eisenhardt and Graebner, 2007).

Case Data

A summary table of the cases is provided in Table 2. This gives brief details of the type of business, produce grown and supplied, nature of business, location, an indication of size by turnover and involvement in local networks or more national cooperatives.

[Take in Table 2: Case Businesses of Primary Sector Rural Entrepreneurs]

Data was collected through face to face interviews conducted by the authors with the owner-managers of each business; a number were effectively family owned and run and interviews took place with two or more individuals in each business. Business profile data was collected. The size and operation of the individual businesses is indicated by turnover rather than employment since the latter was not necessarily a good indicator of the size and operation of the individual businesses. Some of the fruit and vegetable growers employed large numbers of casual workers at peak seasonal periods which tended to inflate FTE numbers.

Institutional Regulatory Factors

We identified a range of different regulations that affected respondents, ranging from public regulation, that tends to be rather coercive with sanctions for non-compliance, to private regulation which tends to be voluntary, but enforced through membership in cooperatives.

Public regulation

Dairy, sheep and cattle farmers indicated that they were particularly affected by local authority regulation. Examples mentioned included the Resource Management Act (RMA) where respondents reported that they need to obtain resource consents in relation to construction of tracks and culverts, irrigation and effluent disposal.

In case 7 the farm was located close to the urban area of New Zealand's capital city. Due to the location the resource consent process was perceived to be more difficult than for farms in more remote rural areas.

“The Resource Management Act has had a huge effect. To get anything on the farm, like a farm track, you need the resource consents.”

Environmental regulation, such as that relating to weed control, was another area that dairy, sheep and cattle farmers frequently mentioned that impacts on their operations. Similar to the RMA, environmental regulation was perceived as complex as the regulations cover a diverse area of land that has different environmental requirements.

“I think they’ve got themselves so big and they’re so spread, and in such diverse areas, that they have a problem dealing with individual areas that have specific problems. They use a blanket approach, because they run from Kaikoura down to the bottom of the Waitaki. Well, we have different problems here than they do in Kaikoura.”

The South Island high country farmers further mentioned the Tenure Review Act (see Table 2) for Crown pastoral lease land which was considered to be a lengthy process resulting in a large degree of uncertainty for the individual farmer.

“That tenure review that we did, it took about 8 or 9 years to do it. It was terrible. The whole thing was designed so that the farmer was on the back foot. It was all designed so that the farmer had the least input and it was his future that they were talking about.”

In contrast, the fruit and vegetable growers in our sample were predominantly affected by employment regulation such as the National Minimum Wage (NMW), which was felt to be too generous for the type of industry that they were in and ACC (Accident Compensation Corporation, explained in Table 1) levies which were seen as an additional cost to the business. Due to the competitive nature of their sector and the price pressure they were exposed to, some respondents, such as case 10, felt that the NMW had a ratcheting effect on their wage structure:

“Well, new staff that come on start on a minimum wage but then you have to increase the wage for the staff you’ve already had otherwise the margin between the senior and the minimum wage people gets narrower. So it does affect us right across the board. You can’t just keep bringing the bottom line up without rewarding those more senior people.”

In contrast to case 10, case 12 considered the NMW to be just an additional regulation that had to be dealt with, it was not seen as a particular constraint on the business:

“You’ve got to comply with the minimum wage. I suppose that’s just an automatic thing, isn’t it, really. That has affected us more latterly, because it went up. It went from the youth wage to the minimum wage. There used to be quite a gap between one and the other, but it’s just something you’ve got to comply with, isn’t it?”

Further, the New Zealand Emissions Trading Scheme (NZ ETS) was mentioned as a constraining regulation. While fruit and vegetable growers fall under the NZ ETS, pastoral agriculture is excluded from this regulation. We will discuss potential reasons for this differential treatment of the two sectors in the next section.

Private, voluntary regulation

A key characteristic of the dairy, sheep and cattle farmers was being embedded in a cooperative such as Fonterra or Silver Fern Farms (SFF). These organisations have their own set of voluntary regulations around safe and secure farming practices and members were regularly audited.

In the case of a high country sheep farmer, the respondent admitted that SFF were in effect his main regulator. Because of their requirements his farm was audited each year:

“Silver Fern Farms audit us. We get audited by an independent auditor. So, it’s reasonably strict, and we’ve got to have a lot of bookwork done.”

Such voluntary cooperative regulation was expected to increase because of the growing demand (by buyer corporations) to track produce to source origin.

“The meat that they put through their accredited system, they have to be able to trace that back to an accredited farm. So, when they get to us, they’ve got to make sure that we know when we’ve drenched every animal and when we’ve injected every animal, sprayed the pastures and whatever.”

When looking to the future this farmer could only see the role of Fonterra and the voluntary regulation that they provided becoming more important, with increased requirements to ensure quality and certificate of origin to satisfy final customer requirements.

“Whether we like it or not, 10 years down the track we’re going to be hugely regulated. We haven’t got a choice have we? Just the nature of the beast, isn’t it? That’s probably the thing that most people worry about. It is going to change and I suppose it’s going to be pressure on. It’s going to be driven as much by Fonterra as anything else.”

While a few case respondents did complain about the cost of complying with these regulations (time to complete paperwork), they generally had a positive attitude towards these private and voluntary regulations. They were considered beneficial through setting standards and maintaining high levels of quality – the basis upon which their products were then sold internationally.

In contrast, fruit and vegetable growers were not affected by private and voluntary regulation. Only those that operated in international markets, were affected by regulation imposed by global retailers such as Tesco or global agricultural certification providers such as the Global Good Agricultural Practice (GlobalG.A.P.). The owner of a family run kiwifruit and apple orchard in the Hawkes Bay, for example, viewed additional benchmarking and regulation required through the GlobalG.A.P. scheme as setting an international benchmark that was beneficial to the business.

Social capital factors

We identified two social capital factors that influence the skill and actions of the rural entrepreneurs in relation to regulation.

National cooperatives

With the exception of one respondent, all sheep, dairy and cattle farmers were members of a formal cooperative (either Fonterra or Silver Fern Farms). As indicated in the previous section on private and voluntary regulation, cooperatives played a major role for dairy, sheep and cattle farmers in our study. The cooperatives set voluntary standards to maintain high levels of quality in order to achieve a competitive advantage in international markets.

The exception is a farmer that specialised in rearing rams for supplying to other farmers based on a distinct new cross breed. The respondent has decided to specialise on a niche market because he and his wife wanted to be a ‘price maker rather than a price taker’ (#07). They sold

their sheep directly to up to 400 farms in New Zealand and overseas. As a result they were not embedded in Silver Fern Farms as their main customers were other farmers rather than wholesalers or retailers (see later section).

In contrast, from the sample of fruit and vegetable growers, only one respondent was part of a large cooperative – Turners and Growers – which focuses on exporting New Zealand pipfruit. The cooperative supports its members through collective marketing and advertising overseas. The respondent of a kiwifruit and apple orchard (#15) exports their produce into Asia via the cooperative.

“We don’t have the resources to go out there and actually look at opportunities. They are the best marketer in the world, we see them worldwide.”

Local networks

With the exception of the kiwifruit and apple grower (#15) mentioned above, other fruit and vegetable growers operated predominantly through small local networks rather than national cooperatives or they operated in isolation. Case 12, for example, is an apple grower who is a member of a small, local growers’ cooperative, which had joined together to provide a common packing and grading storehouse facility for the local fruit growers.

“Everyone used to have their own grader and that out in the shed and then a group of growers got together and said well, we may as well build a big one. It was one of the first to actually be a standalone pack-house as such, and it’s grown from there. It is still a cooperative and owner owned with about 15 shareholders.”

Those operating in isolation were a specialist plant nursery, a vegetable grower and a grape grower. These respondents had no obvious networks they could use for advice and support and no cooperative in the form they existed for the stock and dairy sub-sector. Cooperatives not only have an important role in providing information and advice, but in providing a voice for their members through an advocacy role in regulation design and implementation. In the case of fruit and vegetable growers, it is apparent that their industry was rather fragmented and lacking power to negotiate on behalf of their members. This became apparent in relation to the Emission Trading Scheme mentioned in the previous section. Respondents considered it unfair that, despite the fact they were growers, they were negatively affected by the scheme since it increased their compliance costs, whereas dairy, sheep and cattle farmers were not similarly affected. They saw NZ ETS as framing good intentions by the State, but perceived that they were one of the anomalies under the system as they were a user of coal and diesel fuel for heating glasshouses, for example (#10).

“It’s affecting us significantly because plants have not been included in the credit listing. It’s only trees, like pine trees and stuff like that. I think the veggie growers’ association have now amalgamated and going to try and make a claim on a mass basis whereas the nursery and garden industry haven’t really come on board”

Isolation issues became apparent when discussing a meeting that had been arranged with the Minister for the Environment to discuss regulatory issues that affect the sector. Whereas, in the previous cases, existing networks would have alerted the importance of the meeting to the owner, in this case, the respondent became aware of it too late to participate:

“We didn’t know anything about it until the day before, or two days before.”

Market economic factors

The sheep, dairy and cattle farmers did not engage directly with their markets, but sold their entire stock to the cooperative they belonged to i.e. either Fonterra or Silver Fern Farms. Members get a uniform, but fluctuating pay-out reflecting global market conditions.

As mentioned before case 7 was an exception, where the owner engaged directly with the domestic and international market because of the highly specialised niche the business was operating in.

In contrast, most fruit and vegetable growers engaged directly with their markets and the differences are presented below.

Domestic market

Three of the eight fruit and vegetable growers in the sample (#10, #11, #16) served the domestic New Zealand market only which they described as a highly competitive environment. As small scale producers they were not able to sell directly to supermarkets, but relied on large wholesalers or chain retailers who in turn dictate the price paid to growers. They struggled to compete and secure contracts. As a result the businesses struggled to survive financially and regulation was seen as an additional cost that the businesses struggled to meet.

The owner of the specialist nursery (#10) suggested that the chain retailers were the price setters for this sub-sector and that profit margins were very narrow:

“Usually they start off and say ‘That particular plant will sell for \$9.90’ and then they work out their costs of whatever they are, rates and rents and wages and all that sort of thing and they say, ‘We can only afford to pay you \$4.50’. In that \$4.50 we’ve got all our costs and wages included and instead of having \$1.50 profit, we’re only down to the cents.”

Under such price pressures, one of the regulations that affected the business was the NMW (see previous section).

International markets

Five cases (#12, #13, #14, #15, #17) operated predominantly in international markets with 95 per cent of their revenue generated through exports. The apples, kiwifruit and pipfruit growers relied heavily on seasonal workers and at peak times their operations grew from micro businesses employing fewer than five staff to large operations employing around 100 seasonal workers.

From an export perspective, it seemed that the businesses in this group had shifted their focus from Europe towards Asia, which offered the advantage of a fixed price for their products rather than a forward price as is common in Europe. For some respondents, the focus on Asian markets had resulted in large investments i.e. developing and planting new crops to suit the different needs in Asia. Some of the apple growers for example had planted new crops to achieve larger and sweeter apples for the Japanese market.

As indicated earlier, for exporters into Europe, regulations set by global grocery retailer Tesco emerged as an issue. Tesco for example, decreased the level of spray residue allowed on apples to gain competitive advantage. This forced apple growers to change their practices to be able to sell their produce to Tesco. Other than Tesco, GlobalG.A.P. was the other key regulator for these businesses.

Respondents accepted the financial and administrative costs of complying with these private and voluntary regulations and they viewed compliance as a necessary requirement to allow them to compete in international markets. Case 15 is illustrative of producers in this sub-sector. The owner in this case viewed additional benchmarking and regulation required through the GlobalG.A.P. scheme as setting an international benchmark that was beneficial to the business. This case, however, was the only one within the sample of fruit and vegetable growers that operated through a large national cooperative. Via the cooperative the owner could not only obtain a guaranteed, but also a higher price.

“It’s a certificate and an accreditation to say that we’ve achieved all measures. We were the first in New Zealand to get GlobalG.A.P. and we’re one of the few who’s got Tesco’s Nature’s Choice Goal. We don’t view those costs as hindrances, we actually view them and embrace those changes and those costs with open arms, knowing that it’s obviously going to benefit us for the future.”

“For our kiwifruit, for instance, we know it’d be worth probably \$2 less a tray.”

The other cases in this sub-sample were still vulnerable to fluctuating prices which depended on market conditions from year to year. Income therefore was prone to fluctuations.

The crop is harvested back in February-March and not sold until sometimes July-August and then getting receipts back in October, November, December. It’s very difficult to put a peg in the sand and say where our profitability is going to be.” (#15)

Discussion

In this section we discuss the findings in light of our research issue which, as described earlier, focuses on the interconnections between the three sets of factors: institutional regulatory, social capital and market economic.

Institutional regulatory factors

The institutional context is part of the environment for all rural entrepreneurs. However, we have seen that the impact of institutional regulatory factors was highly variable depending on rural entrepreneurs’ skill set and actions. This diversity supports an institutional perspective giving credence to the importance of the regional and local environment for rural entrepreneurs’ skill set and actions. For example, the effect of the NMW (a national regulation) was very different even within the same sub-sector. Growers that operated in relative isolation (such as vegetable growers) were much more affected than those able to be in a strong cooperative (such as fruit growers), indicating the importance of the interaction between the formal institutional and informal social environment. The skill of rural entrepreneurs in terms of managing regulation can only be understood when both are taken into account.

Differences could be distinguished between entrepreneurs’ attitudes and experience when dealing with regulation. This nature of experience and ability of the entrepreneur to learn was an important factor. This suggests that a conceptual framework needs to take into account experience and the ability to learn as introduced in our literature review. Learning about regulation and changes in regulation is an important factor that impacts on how entrepreneurs manage. Three themes emerged from the analysis in relation to learning: sources of information and advice, the level of engagement with these sources and the capability to implement and act upon the information and advice obtained. Interviews revealed that an entrepreneur’s capability to translate information and advice into business practice can be more important than availability and access to information. Entrepreneurs that seemed to manage regulation well

were characterised by having access to a range of different sources of learning, were well embedded in a network of trusted advisors and displayed a proactive approach to learning. Active involvement with their industry and internal systems that could translate into action was also important, for example through good communications with employees. These factors were reflected in our case study firms and illustrate the importance of the interaction between the external and internal environment.

Social capital factors

With primary sector rural entrepreneurs, where there is an external cooperative, as with dairy and beef producers, this body acts as important resource, supporting the concept of a reservoir of information that can be drawn upon by the entrepreneur. This reservoir of information gives both collaborative power in buying and selling and an important individual resource providing a source of information and of benchmarking quality. From the cases illustrated, it is clear that voluntary cooperative regulation can benefit the entrepreneur by providing benchmarks on quality and can ensure stability in revenues through the guarantee of market outlets. With the cases that illustrated fruit growers, the participation in voluntary cooperative regulation is a further example of the positive benefits from participation in worldwide quality benchmarks. Participation, and the resulting entrepreneurial skill and capability to manage regulation, supports the inclusion of social capital in a theoretical framework.

Voluntary cooperative regulation provided opportunities for responding to global and economic market factors. For example, by providing greater access to codes and principles and also fostering information sharing and achievement of marketable quality standards. By contrast entrepreneurs in the sub-sector that did not have voluntary and external regulation became price takers so that regulation was viewed as a cost rather than a benefit. These entrepreneurs were more subject to the vagaries of global and international markets or were dependent on large scale buyers. Entrepreneurs operating this way encountered an imperfect information set and faced greater uncertainty in their decision-making.

Where rural entrepreneurs were well embedded in local and national cooperatives, the participation in such networks is a dynamic process illustrative of the importance of social capital as a resource mediated by entrepreneurial actions. The case analysis supports the view that the value of social capital depends on the embeddedness of the entrepreneur in such networks. This was discussed in our literature review (for example, Down *et al.*, 2012) and confirms that this embeddedness can be an important source of information for rural entrepreneurs. While national and local cooperatives provide a reservoir of information and dedicated sector resources (for example, specific software programmes for dairy farmers), such resources are modified by the skill and action of entrepreneurs. For example, the cases of the stock farmers indicated that they had made a decision to adopt cooperative voluntary standards ahead of requirements stemming from international markets in preparation for more stringent bio-security measures on sourcing meat production. The cooperative provided not only a source of information on the likely requirements of international markets, but also put measures in place to contribute to entrepreneurs' skill and action through establishment of benchmarks.

Although in theory the role of the institutional framework can determine entrepreneurial skill and actions, it can be mitigated by internal factors and this helps our understanding of the diversity of impacts and rural entrepreneur skill responses. The role and attitude of the entrepreneur will be an important factor. Some entrepreneurs are able to call upon additional resources, from their employees or from their family. For example, we illustrated in two of our cases (cases 10 and 11) that one entrepreneur was able to call upon experienced administrative

staff to manage regulation, whereas the other was much more self-reliant. With other producers a positive attitude to regulation was apparent combined with the ability to call upon an informal network. Primary producers may operate in isolation, but it is more likely that they are in a close knit network, reinforcing the notion of limited networks, but with strong ties (Granovetter, 1973).

Economic Market Factors

While managing and complying with employment regulation emerged as a major concern for entrepreneurs in other sectors (Battisti *et al.*, 2011), none of the entrepreneurs within the sub-sectors of dairy, stock and fruit production mentioned it as a particular concern. One possible explanation for the differing experience is the nature of the workforce that is employed and the nature of the employment status/agreement. In this sub-sector, casual and short term labour contracts were normal and could be predicted. This suggests that the economic nature of the operating environment was an important factor that affected entrepreneurial skill and capability to manage regulation.

Our findings showed that horticultural growers lacked a significant reservoir of information that may be provided by a cooperative, supporting the stock concept of social capital. In these cases, the institutional framework was more important, since it was clear that entrepreneurial skill set and action in these cases was more directly influenced by market powers of the major buyers and national and local regulation policies, such as employment and NMW requirements. Even here, however, there were attempts to form local networks. Unfortunately such attempts were defeated by spatial locations and dispersed patterns of rural entrepreneurs in this sub-sector. Entrepreneurs suggested that occasional meetings were held, but that they were insufficiently frequent indicating a lack of robustness in such social networks.

The lack of involvement in an external body in the cases of horticultural producers, that were reliant on an internal domestic market and the consequently limited and fragile nature of social capital, meant that regulation was seen much more as a constraint rather than a benefit. The environment for such entrepreneurs is more uncertain and brings similar issues to managing employment regulation (for casual staff) and to managing other types of regulation. For example with responses to the implementation of the NZ ETS and NMW, which were seen as additional cost issues. The lack of a cooperative or active network and limited social capital meant that entrepreneurial skill was much more variable across this sub-sector.

Local producer networks can be an important source of relationships affecting entrepreneurial skill and actions. Spatial variations and locality become important. For example, we have seen that a rural entrepreneur may belong to a close knit local network that can be an important source of information on new regulations or act as conduit for local views. Where local networks are absent or limited rural entrepreneurs may suffer from the isolation that is sometimes associated with remote areas.

This study has investigated the entrepreneurial skill set and capability to manage regulation by primary sector rural entrepreneurs in a specific rural context. We have seen that when faced with the complexity of their regulatory environment, some rural entrepreneurs were able to respond positively and use regulation to their competitive advantage, whereas others in the same sector were affected more negatively. This confirms the variability of impacts of regulation suggested in the more recent literature (Kitching, 2007). The contribution of this study has been to increase our understanding of the importance of different factors that have

influenced these differences in entrepreneurial skill sets in a given regulatory environment (the institutional framework).

[Take in Figure 1: Entrepreneurial Skill and Regulation: Conceptual Framework]

Implications and a conceptual framework

In this section we build on our discussion to develop a conceptual framework that indicates the determinants of entrepreneurial skill and capability to manage in the context of differing regulatory contexts.

In a previous section we identified theories that can contribute to our conceptual framework on entrepreneurial skill and capability to manage regulation by primary sector rural entrepreneurs. These approaches involve a consideration of the linkages and inter-relationships in which our primary sector entrepreneur operates. In terms of social capital, we have stressed that it should be seen as a dynamic rather than a static concept and that it is interpreted and modified by entrepreneurial actions. Voluntary cooperative associations provided a deep source of information or reservoir, however, this was interpreted and evaluated by entrepreneurs over time so that social capital is a process modified and added to by entrepreneurs' own skill, actions and experience.

It is not merely the existence of linkages and inter-relationships which are important, but the reciprocal nature of those links creating the existence of a dynamic process. The variation of capability across our case studies suggests that entrepreneurial skill is influenced by the extent to which the entrepreneur can access and absorb knowledge and learn from the external environment and from external actors. The strength of this reciprocal nature depended on the nature and interplay between the rural entrepreneur with a producer voluntary cooperative body, such as Fonterra or Silver Fern Farms for farmers, or ENZA for fruit growers.

Figure 1 provides a conceptual framework that takes into account both the institutional environment, including private voluntary and government regulation, and social capital as a dynamic process. This environment and process is interpreted by individual entrepreneurs who will act on information and experience. In this paper we have focused on case material drawn from the primary sector to develop further our conceptual understanding of the determinants of entrepreneurial skill and capability in response to regulation. Here we have identified the importance of market economic context as called upon by previous writers (Anderson, 2000), the role of social capital as a process (Anderson and Jack, 2002) and have identified the importance of reciprocal institutional linkages (North, 1991).

Figure 1 illustrates the role and importance of relationships that determine entrepreneurial skill in a particular regulatory environment. If we consider the external relationships, it is the reciprocal nature of these relationships that is important; that is, they do not exist as one way flows and it is important to understand the interplay of these relationships. These are characterised by the following reciprocal relationships which have influenced entrepreneurial skill as a response to the regulatory environment.

1. Relationships with National Cooperatives and local networks

Voluntary producer cooperatives have an important role through the setting of international benchmarks on quality, control of production, marketing and distribution channels. The interplay will be affected by the extent of membership and participation and the range of

services provided by the cooperative. For example, both Fonterra and SFF provide regular information on developments in the food sector such as bio-security, information on markets and products and have advocacy roles which can affect the design and development of new regulations. As identified earlier, local producer networks can also provide information and resources. The extent of embeddedness and commitment to use such networks by entrepreneurs will be an important factor in their effectiveness and their efficiency as reservoirs of information and dynamic sources of social capital.

2. Relationships with the Institutional Environment

The institutional environment is influenced by design, implementation and monitoring of the impacts of regulation. Sources of information may be accessed through websites or help lines. The extent of interaction will depend upon the individual rural entrepreneur's requirements, attitudes and experience. Producer cooperatives may have a role through advocacy and may be consulted in advance of new regulations. Local regulations, administered by regional and local agencies (such as resource consents), can be more problematic in terms of relationships since there will be local variation in practice, policing and administration. Nevertheless the interplay will affect entrepreneurial skill and capability to manage regulation.

3. Relationships with the Economic Market Environment

The economic environment is set by institutional actors including state governments and the private sector such as banks, insurance companies and others. The economic environment will be influenced by international events, but such events will be mitigated by institutional interventions. Where there is no voluntary producer cooperative or limited networks, say in the case of vegetable producers, the primary sector rural entrepreneur is directly affected by market and institutional factors. In such circumstances, the major buyers, such as supermarkets, are able to exert buyer power. This is not necessarily negative since it can raise standards and improve incomes, but such buyer power is not counterbalanced by reservoirs of social capital. Hence, entrepreneurial skill, actions and capability of rural entrepreneurs is more limited giving rise to circumstances illustrated by our cases in this sub-sector.

Implications

There are a number of implications suggested from our paper for researchers and policy makers. These include the encouragement of voluntary networks and organisations by national governments or the enhancement of existing mechanisms of policy making in this area. These are explored in more detail through the following measures and we include some implications for future research in the final paragraph of this section.

First, however, it is necessary to understand the contextual environment and the extent of rural entrepreneurs' embeddedness in the local and national networks in order to develop effective support institutions and regulatory policies. For example, voluntary cooperatives may need incentives to become established and to be effective as reservoirs of information and advice on voluntary regulation. Voluntary cooperatives may be able to call upon their experience and information (such as knowledge of internationally recognised standards) to provide an advocacy role which will enable them to be involved in the design of new regulations developed by regional, national and state bodies.

Rural entrepreneurs have limited access to information and whilst the institutional environment and networks can provide access to social capital and other resources, it is important to understand that the effectiveness of such organisations will also depend upon their ability to learn from experience and to act upon new information. Voluntary and other organisations

may play an active role to promote and enable capability in their members through developments of sector specific software, training and other advice systems.

Third, international markets provide their own regulatory factors which may be anticipated to advantage by national or local voluntary organisations and networks. It is through anticipation of international market factors that have enabled some of the cases of rural entrepreneurs, discussed in this paper, to be at the forefront of developments. For example, in developing protocols and procedures that ensure security of origin of produce, of certification and of supply chain monitoring.

Fourth, although the set of factors that determine rural entrepreneurs' skill sets and capability to manage regulation is complex, nevertheless, there is scope for increasing understanding of where effective policy interventions can be made through the identification of 'gaps' in access to information and resources in different sub-sectors, hence a sector specific approach for policy is supported.

For future research, the response of rural entrepreneurs to the impact of international and national regulations also needs to be understood in context. There is a dichotomous relationship between rural entrepreneurs and regulatory change, that is, the actions of rural entrepreneurs may drive regulatory change as well as vice versa. Future research could adopt longitudinal methodological approaches that will provide greater understanding of this dichotomous relationship and changes over time and in different contexts, to this end, additional international comparative studies would be beneficial.

Conclusion

In this paper we have undertaken a qualitative case-based analysis of the factors affecting the entrepreneurial skill set and capability of primary sector rural entrepreneurs to manage regulation. We have applied an institutional and social capital theoretical framework to understand and explain primary sector rural entrepreneurs' skill and capability in the face of the complexity of their regulatory environment. Our case analysis indicated diversity in skill, actions and capability across sub-sectors including dairy and stock farming, fruit growers and vegetable/horticultural entrepreneurs. In order to better understand the variable entrepreneurial actions and response to regulation and to contribute to the development of theory in this area, we have developed an empirically informed model.

Although previous work has highlighted the nature of the likely variability of impacts of regulation (Edwards *et al.*, 2004; Kitching, 2007), there has yet to emerge a model or framework that we can use to better understand the factors that determine such entrepreneurial skill, and capability to manage and why entrepreneurs in similar sectors and in similar firms respond in different ways. We are confident that our proposed framework acts to illuminate the factors influencing the diversity entrepreneurial skill and capability to manage regulation. This framework could be used as the basis for further investigation to test the robustness of the model in different environments and in different sectors.

Developing the conceptual framework following case analysis, as outlined in our Introduction and Research Methods section, does lead to a limitation of this research. This limitation is found in the fact that we used a limited number of cases of rural entrepreneurs. In presenting this analysis we are in danger of limiting explanation of entrepreneurial actions and responses to regulation to those identified in this study. This is not the intention; rather, we acknowledge that this study is intended to focus on the in-depth case material from rural entrepreneurs in the primary sector to better understand and explain entrepreneurial skill and capability in the light

of a complex regulatory environment. Our evidence has identified the main factors that explain the variability of entrepreneurial skill and capability to manage regulation. These factors can be applied in other sectors and in other environments. Therefore, we hope that our contribution can lay down the foundation for further investigation and testing of this framework. It goes beyond previous work which has sought to describe the impact of regulation and while this has been valuable for increasing our knowledge, we have provided a greater understanding of why rural entrepreneurs can have different skill sets, actions and capabilities to manage the complexity of regulation.

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