

**Capacity and capability development of
Canterbury subcontracting businesses:
Features, motivating factors and obstacles**

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About the Resilient Organisations Research Programme

“Building more resilient organisations, able to survive and thrive in a world of uncertainty, through research and practice”

We live in an increasingly complex world dealing with a broad spectrum of crises arising from both natural and man-made causes. Resilient organisations are those that are able to survive and thrive in this world of uncertainty.

Who we are:

The Resilient Organisations Research Group (ResOrgs) is a multi-disciplinary team of over thirty researchers and practitioners that is New Zealand based and with global reach. A collaboration between top New Zealand research Universities and key industry players, including the University of Canterbury and the University of Auckland, ResOrgs is funded by the Ministry for Science and Innovation through the Natural Hazards Research Platform and supported by a diverse group of industry partners and advisors. The research group represents a synthesis of engineering disciplines and business leadership aimed at transforming organisations into those that both survive major events and thrive in the aftermath.

We are committed to making organisations more resilient in the face of major hazards in the natural, built and economic environments. Resilient organisations are able to rebound from disaster and find opportunity in times of distress. They are better employers, contribute to community resilience and foster a culture of self-reliance and effective collaboration.

What we do:

The ResOrgs programme of public good research is aimed at effective capability building through research activities with significant impacts on policy and practice. Activities and outputs of the group, in existence since 2004, include informing and focusing debate in areas such as Civil Defence Emergency Management, post-disaster recovery, and the resilience of critical infrastructure sectors, in addition to core activities in relation to organisation resilience capability building and benchmarking. We have produced practical frameworks and guides and helped organisations to develop and implement practical resilience strategies suitable to their environment.

Why we do it:

In an increasingly volatile and uncertain world, one of the greatest assets an organisation can have is the agility to survive unexpected crisis and to find opportunity to thrive in the face of potentially terminal events. We believe such resilience makes the most of the human capital that characterises the modern organisation and offers one of the greatest prospects for differentiating the successful organisation on the world stage. This resilience is typified by 20/20 situation awareness, effective vulnerability management, agile adaptive capacity and world class organisational culture and leadership. More resilient organisations lead to more resilient communities and provide the honed human capital to address some of our most intractable societal challenges.

For more information see our website: www.resorgs.org.nz

Executive summary

This report provides an understanding of the nature of Canterbury subcontracting businesses operating in the space of earthquake reconstruction in Christchurch. It offers an in-depth look at the factors that influence the development of their capacity and capability to withstand the impact of volatile economic cycles, including the 2008 global financial crisis and the subsequent 2010/11 Canterbury earthquakes.

There have been significant changes to the business models of the 13 subcontracting businesses studied since the earthquakes. These changes can be seen in the ways the case study subcontractors have adapted to cope with the changing demands that the rebuild posed. Apart from the magnitude of reconstruction works and new developments that directly affect the capacity of subcontracting businesses in Canterbury, case studies found that subcontractors' capacity and capability to meet the demand varies and is influenced by the:

- **subcontractors' own unique characteristics**, which are often shaped by
- **changing circumstances in a dynamic and uncertain recovery process**; and
- **internal factors in relation to the company's goal and employees' needs** (See Figure 1)

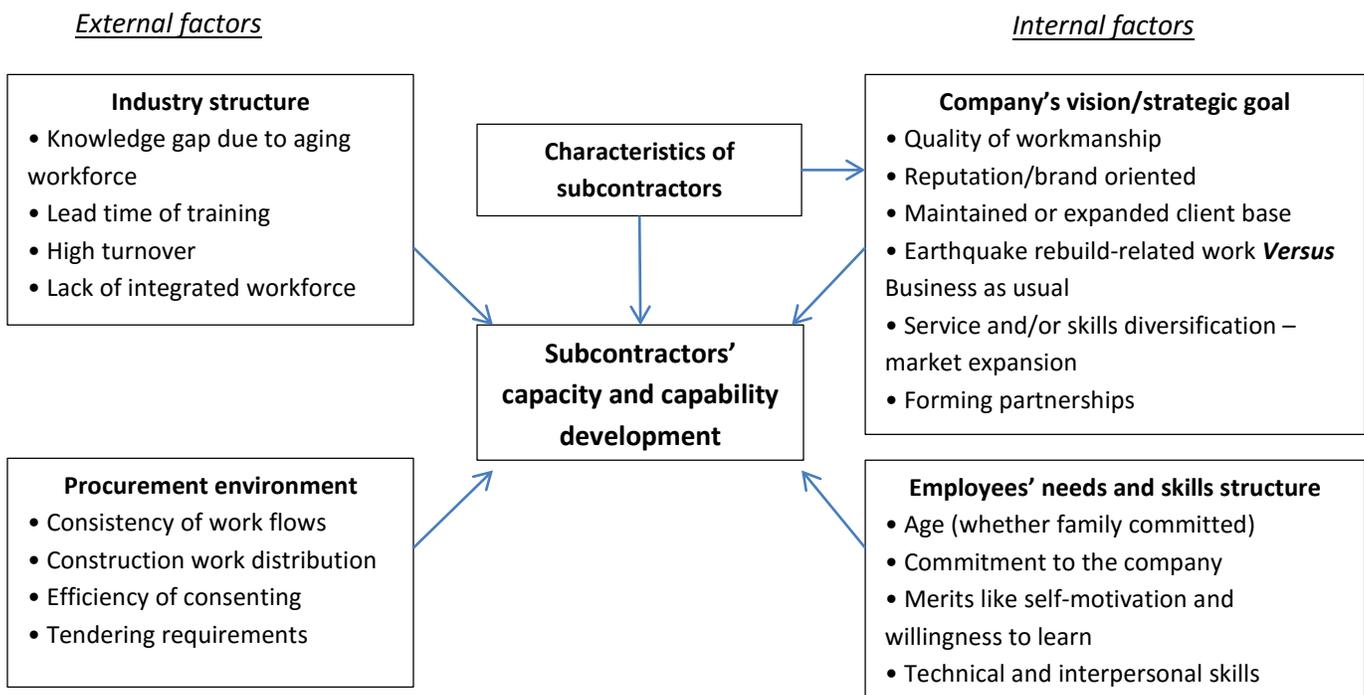


Figure 1: Factors influencing capacity and capability development of case study subcontractors

- The report shows that case study subcontractors **share common features** which to some degree affect the way resources are organised and managed. As most subcontractors are small-sized enterprises, there appears to be a close link between the management style of the entrepreneur and its resourcing practice. They tend to have a limited financial resource base and internal knowledge base. The size of business operation and capacity is relatively small compared to larger contractors. However, subcontractors tend to have a close link with local communities.
- The lingering issues related to the **construction industry's structure**, such as an aging workforce, lead time of training, high turnover (30% on average) and lack of integrated workforce planning across the subcontracting sector, were particular challenges for subcontractors' workforce planning and have increased their recruitment and training costs.
- With their small business operation and capacity, subcontractors were particularly vulnerable to **market forces and fluctuating workflows**. Workflow fluctuations and low efficiency of the consenting and tendering process were reported to have a particular impact on subcontractors. Subcontractors form a continuum, with some fully involved in the infrastructure-rebuild related works and others having reduced their rebuild commitments while increasing their business as usual building activities. There was a significant shift between 2013 and 2014 from the horizontal rebuild towards newly subdivided areas in the Canterbury region.
- **Individual subcontractors' business strategy and/or their vision** have a substantial impact on the way skills are sourced and developed. A solid client base was found to be the first priority among most subcontractors, which largely dictates the direction of capability development and resourcing approaches, such as recruitment on a permanent basis, expanding business as usual markets, forming partnerships with other companies and diversification of services and skills.
- **Workforce characteristics** such as technical and interpersonal skills, commitment to the company, self-motivation, willingness to learn, and age were subcontractors' primary considerations when offering employment. Most workers employed by the subcontractors studied were in the 30-to-late-50s age bracket. Subcontractors generally opted for

contingent workers by recruiting younger workers (under 25 years old) in an attempt to ensure flexibility in the use of labour and to enable them to respond to uncertainties in the economic environment.

- **Sectoral variations** have been identified with vertical rebuild in the central Christchurch nominated as facing the most challenges with demand outstripping supply of tradespeople and challenges in retaining subcontractors in infrastructure repair and rebuild works. The size of the shortfall is dependent on the ability of government, project clients and contractors to successfully import and redeploy new workers (new entrants, apprentices, and workers from outside) into Christchurch. There is a need to provide the necessary structural and social infrastructure, including temporary accommodation and/or housing facilitation.

The case studies show that for many subcontractors, a low level of skills development is predominantly due to their limited financial and operational capacity rather than unwillingness to invest in skills development. Hence, policy makers who are interested in raising the profile of subcontractors in the country might want to focus more on helping them to build their capacity to develop skills.

The case studies demonstrate that the state of capacity and capability development in construction subcontractors is not static. It changes over time as the mix of determinant factors changes. Being through the bust and boom cycle following the 2008 financial crisis and the 2010/11 Canterbury earthquakes, most subcontractors realise that having a productive and competent workforce and core capability is the key to creating a virtuous circle between quality of work and sustained client base in a small company. It remains critical that some of the issues identified in this report, such as high turnover, youth employment, lack of knowledge transfer within the subcontractor and at the sector level, and lack of investment in training and skills development, can be addressed in a systematic way. Better engagement of subcontractors should be the first step towards any of the solutions.

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1. Introduction

The 2008/09 global economic crisis had affected the New Zealand construction industry with employment down 5% from 190,000 to 181,000 by June 2009 (Department of Labour, 2009). The downturn had an employment impact on subcontracting businesses which are vital to the performance of the sector (BCITO, 2008). The surge in construction activity following the Canterbury earthquakes offered the sector the chance to develop skills and capital base for improving its economic prospects. However, increasing rebuild requirements in the region raised concerns about the capability of the entire construction industry to deliver a timely rebuild.

As the demand of repairs and rebuilds in Christchurch escalated over time, contracting organisations reported that their business model has fundamentally changed due to the restructuring of construction activities as a consequence of the earthquake sequence itself and of the reconstruction (Chang-Richards et al., 2015a). The impact of the earthquakes, however, was felt most by small to medium subcontracting businesses (Chang and Wilkinson, 2012):

- For micro-sized subcontracting businesses, the impact was primarily associated with time and cost overruns due to the stretched capacity across both earthquake-related jobs and business as usual projects;
- For medium-sized subcontractors, their aspiration of growing business was limited by the shortages of experienced personnel who could form their core competency;

By casting construction subcontractors' thoughts back to the year of 2008 when the global financial crisis occurred, and the following years of the 2010/11 Canterbury earthquakes, this study offers an in-depth look at the factors that have affected the development of their capacity and capability to withstand the impact of such a bust and boom cycle.

Key areas examined in this study include:

- the characteristics of the construction subcontractor businesses in Canterbury;
- the motivating factors for, and existing obstacles to developing their capacity and capability;
- and

- the key learnings for developing sustainable subcontracting business concerning human resources management systems, reducing the knowledge gap, training requirements, and any issues currently being encountered during the rebuild and future expectations.

The emerging issues facing Canterbury rebuild subcontractors and case study findings of 13 subcontractors, including how they develop their resource capability, their recruitment and retention strategies, the challenges they were facing during the rebuild and their resourcing policies and practice, were reported in (Chang-Richards et al., 2015b) and (Chang-Richards et al., 2015a), respectively. This report, however, concentrates on the nature of the subcontracting sector, which allows for more detailed analysis, including backward linkages with major contractors and forward linkages with suppliers and labour. It also focuses exclusively on understanding the motivating factors and obstacles faced by subcontractors in Christchurch in developing their capability to sustain their business. The results are based on the case study of a range of subcontracting businesses in May 2014.

This study will be of use to those who are interested in improving employment and business development practice in construction subcontractors. This includes policy makers, productivity centres and training organisations. Entrepreneurs and managers of construction subcontractors may also find it useful to learn from other businesses' experiences, particularly their learnings from the 2008 financial crisis and subsequent earthquake reconstruction. Furthermore, the New Zealand construction industry leadership groups can benefit from better understanding many of the factors that influence the strategic resourcing choices firms make in attaining a sustainable goal.

2. About the case studies

The case study organisations were selected in consultation with Christchurch employers' organisations including the Canterbury Chapters of the Specialist Trade Contractors Federation

and the New Zealand Building Subcontractors' Federation. A sample of 30 subcontracting businesses was drawn. The initial list was then reduced, based primarily on whether the company is involved in civil works for infrastructure rebuild in Christchurch and the company's willingness to be interviewed in depth. However, other considerations such as the diversity of companies in terms of size, type of business, years in business and form of labour were also taken into account. In total, 13 subcontracting businesses who were engaged in civil works for infrastructure rebuild were studied in May 2014 (See Table 1).

Table 1: Basic profile of case study subcontractors

Case study subcontractors	Number	Organisational coding
<i>Business ownership category</i>		
Family business	4	S1, S2, S7, S11
Incorporated	3	S3, S9, S13
Incorporated family	3	S4, S10, S12
Limited company family	3	S5, S6, S8
<i>Organisational size</i>		
Micro-sized ($E_p \leq 10$)	3	S1, S2, S7
Small-sized ($E_p \leq 50$)	7	S3, S5, S6, S8, S9, S11, S13
Medium-sized ($50 < E_p \leq 100$)	2	S10, S12
Large-sized ($E_p > 100$)	1	S4
<i>Years in business</i>		
Less than 10 years	1	S13
10-20 years	3	S1, S9, S11
21-30 years	3	S3, S6, S7
31-40 years	2	S5, S12
More than 40 years	4	S2, S4, S8, S10

Note: E_p denotes the number of employees

Face-to-face interviews with 13 subcontractors were conducted, collecting the following information:

- a) their business experiences during the 2008/09 financial crisis and subsequent to the 2010/11 earthquakes;
- b) changes to business model and capacity requirements since the earthquakes
- c) the motivating factors for, and existing obstacles to their successful resourcing; and
- d) the key learnings for developing sustainable business

The research design and data collection methods complied with the requirements of the Human Ethics Committee of the University of Auckland (Reference number 7520). The Annex provides a short description of each company.

3. Characteristics of the construction subcontractor businesses

Apart from the magnitude of reconstruction works and new developments that directly affect the capacity of subcontracting businesses in Canterbury, case studies found that subcontractors' capacity and capability to meet the demand varies and was influenced by the:

- subcontractors' own unique characteristics, which are often shaped by
- changing circumstances in a dynamic and uncertain recovery process; and
- internal factors in relation to the company's goal and employees' needs (See Figure 1)

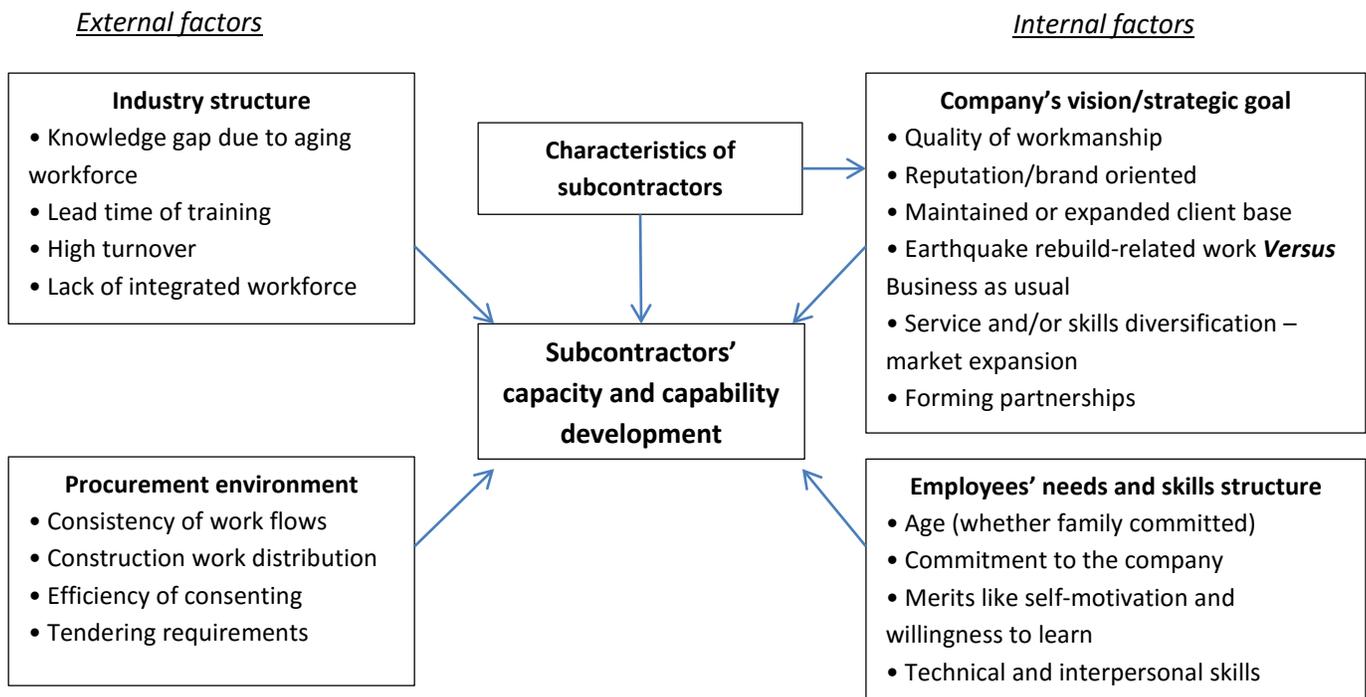


Figure 1: Factors influencing capacity and capability development in case study subcontractors

A preliminary study shows that the extent and forms of resourcing practice adopted by subcontractors, especially those small ones (number of employees is less than 50) differ from that in large organisations (Chang & Wilkinson, 2012). Case studies of subcontractors in this research, however, show some particular characteristics of subcontracting firms that influence their capability development and thus resourcing practice (Table 2).

Table 2: Capability implications of observed characteristics of construction subcontractors

Observed characteristics	Implications for resourcing practices
Close link between the management style of the entrepreneur and resourcing practice	<ul style="list-style-type: none"> • Strong client orientation • Good brand/reputation is the first priority • Lack of succession plans • Strong personnel loyalty considerations
Limited financial resource base	<ul style="list-style-type: none"> • Narrow budget for personnel recruitment and development • Strong retention culture for retaining 'identified' core staff • Over-riding goal of reducing turnover through non-monetary benefits and providing opportunities for career development • Limited strategic workforce planning
Small size of business operations and capacity	<ul style="list-style-type: none"> • Simple and flexible processes and systems • Increased multi-tasking requirements • Strong reliance on on-the-job training • Shortage of management and other administrative resources
Limited internal knowledge base	<ul style="list-style-type: none"> • Dependence on knowledge, experience (know-how) of particular individuals • Focus on knowledge transfer among staff • Recruitment of skills in other specialist areas becomes a channel to diversity business types • Limited use of computer-based facilities
Close link to the local community	<ul style="list-style-type: none"> • Strong preference of recruiting local people to create a local workforce legacy • Informal approach to workforce recruitment and development (e.g. reliance on the Word of Mouth approach) • Company's social events combined with community events • Community culture has a strong influence on the business

3.1 Close link between the management style of the entrepreneur and resourcing practice

Most of the subcontractors studied were managed by owners, labelled as family business or limited company family (Table 1). Several (i.e. S1, S2, S7 and S11) were family businesses with less than 20 employees. Case studies of these subcontractors show that there is a close link between the management style of owner-manager and their resourcing practice. Interviewed entrepreneurs in these companies felt it was very important to sustain business success through developing a strong client base and sustaining the good brand or reputation of the company. There tended to be a more personalised management style and those entrepreneurs were inclined to recruit staff by themselves.

The interviewed owner-managers seemed to have strong personnel loyalty tendencies when recruiting employees. They tended to prefer candidates recommended by acquaintances. According to subcontractors S9, recruiting workers based on the personal recommendations of current employees and other people has the benefit of strengthening the bond of loyalty, trust and commitment to organisational goals. Subcontractor S11, also commented that:

“Most of our work and our workforce are acquired through ‘Word of Mouth’. If our people can do a good job; then jobs come to us, rather than we go to look for jobs. Also if people trust that we are a good company, they would recommend their friends to come to work for us.”

It should be noted, however, that relying on the management capability of owner-managers in those subcontractors also brings with it the risk that there is often a lack of succession plans in the company. For instance, subcontractor S8 ceased its operation in early 2000s as the owner manager retired and no replacement was found at the time. The company has gone through significant transformation from a family business to a subsidiary of Fletcher Construction.

3.2 Limited financial resource base

Case study subcontractors identified one of their particular constraints in investing in skills development was the capital and thin margin constraints which makes them reluctant (or in many cases unable) to provide training access like larger organisations. Several interviewees (e.g. S7,

S11 and S12) mentioned that there is also a higher risk of losing good staff that they have trained than that of larger companies.

Subcontractor S9 emphasised that in order for small subcontractors to form an effective workforce, there needed to be *‘deliberate financial support from the government and deliberate cooperation by subcontracting businesses to identify common problems and find and implement common solutions. This requires vision, trust and information sharing’*. Subcontractor S1 also made a comment on the impact of financial constraints on the development of human capital in his company:

“Constrained budget for small companies like us means advertisement for vacancies become a costly investment. When considering the costs of employing staff, those costs do not just relate to the basic wages. You need to consider the on-costs of things like insurance and annual leave. Advertising costs, our time for sifting applications all have a cost. Training for current staff and induction training for new staff will also add to the costs. In the meanwhile we need to maintain our cash flows. When we add these figures together, we found that we simply cannot afford external training like large companies.”

3.3 Small size of business operations and capacity

Most of the firms studied use simple and flexible processes and systems to help reconcile the desire to recruit good workers with limited human management resources. The limited resource base meant that most subcontractors lack the funds to hire independent managers or administrators until they reach a certain degree of maturity. Consequently, the owner-managers and family as reported by smaller subcontractors (e.g. S1, S2, S3 and S7), needed to carry out the tasks of other functional areas, such as marketing, resourcing and finance, in addition to their day-to-day handling of relationships.

According to subcontractor S8, the small size of business operations also places some demands on their employees to multi-task particularly in terms of dealing with suppliers, customers and other stakeholders in the business environment. Small subcontractors were, therefore, inclined to recruit people having both technical skills and interpersonal skills. Across the subcontractors studied, there was strong reliance on on-the-job training. With limited capacity, some subcontractors (S2,

S5, S6, S8, S11) also reported that they were less able to provide attractive jobs and social protection such as pensions and health care and therefore they had more difficulty attracting and retaining skilled workers.

3.4 Limited internal knowledge base

The interviewed subcontractors generally relied on the technical knowledge/skills of the entrepreneur-manager, or a small group of key and experienced employees in the company. This weakness was highlighted by subcontractor S11 as being a major barrier to innovation, the upgrading of processes and further skills development, exposing the company to the risk of losing that technical capacity.

Despite differences in resourcing strategy, all the subcontractors studied shared an important feature, that they all have a business strategy which emphasises quality, along with a matching human resource strategy that provides incentives for maintaining quality and focuses on knowledge transfer among staff. In most cases, construction work undertaken by interviewed subcontractors was manual work and involved ‘quality control’ by a senior worker or supervisor. As highlighted by interviewees S1 and S7, the productivity and quality performance of their workers, especially those less experienced workers, was limited by the small numbers of experts in subcontracting businesses.

3.5 Close link to the local community

For most subcontractors there is no written recruitment policy as such, but there appears to be a deliberate preference to recruit workers from local communities in Christchurch. Various reasons were given for this, including employers’ perception that local tradespeople are more reliable than those from outside Christchurch because of their connection with local communities and familiarity of the working and living environment. One of the main reasons given by these subcontractors was their sense of obligation to contribute to the social and economic development of Christchurch city.

For instance, the owner-manager of subcontractor S2 said he felt he had a moral obligation to contribute to Christchurch community through the employment of youth. This sense of

responsibility towards the community was also the driving force for the recruitment choice of subcontractors S5, S11, S12 and S13. Subcontractor S5 recruited most of its core and casual workers from the community of Kaiapoi, which accounted for 70% of total workforce.

With the privilege of having readily accessible resources in local communities, more than half of subcontractors studied used an informal approach to workforce recruitment and development (e.g. reliance on the ‘word of mouth’ approach). Several subcontractors also reported their companies were constantly involved in various kinds of community events in terms of co-organising or providing sponsorship. It was also found that community culture had a strong influence on the business in the subcontractors studied. As subcontractor S4 explained that:

“The conventional wisdom concerning local subcontractors is that the prosperity and spirit of local communities (which) we serve is the key or sole motivating factor for many of us to connect closely with locals. So we exist not only as a business, but as part of the community which comes out of it and eager to give back in some tangible or intangible ways.”

4. External factors influencing subcontractors’ resourcing

External factors that influence subcontractors resourcing approach include 1) the lingering issues related to the construction industry’s structure, such as aging population, lead time of training, high turnover and lack of integrated workforce planning; and 2) the procurement environment in which the subcontracting businesses are operating, such as the consistency of work flows from the clients, decisions on construction work distribution, efficiency of consenting and tendering requirements. All these factors, often combine together, seemed to play a predominant role in influencing the subcontractors’ decision on whether resourcing was ‘beneficial and affordable’.

4.1 Lingering issues related to the construction industry structure

Some of the subcontractors studied were highly concentrated in a specific market and relied upon a small group of experienced workers. Aging workers were a particular concern that placed additional stress on small businesses. An investigation into this revealed that older workers in the

construction industry want to remain in their jobs. Although their skills, experience and commitment are valued, there was often a trade-off between that and physical fitness (BCITO, 2013).

However, as mentioned by subcontractors S4 and S13, preventing older workers from retiring early from the construction industry, along with substantial knowledge transfer between these older workers and new workers, has financial implications. The influx of workers in Christchurch means that older workers can be easily replaced. Some subcontractors (S1, S7 and S10) suggested that incentives are needed to encourage those near-retirement workers to stay longer and help the company to build up the skills of new workers.

The New Zealand construction industry has a labour turnover rate of over 20% on average (CIPD, 2007). Subcontracting businesses studied reported that that the Canterbury earthquake reconstruction has seen higher labour turnover rate (30%) than the pre-event level. Case study subcontractors highlighted that the high turnover adds difficulty to their workforce planning and increases the costs of recruitment and training. In particular, subcontractor S4 indicated that

“Before the GFC and earthquakes, we knew that we’ve got a problem in the industry as the annual staff turnover (i.e. the percentage of leavers compared with the size of the total workforce) was above 15% or 20% across the board. This may possibly due to low levels of reward, or to poor working conditions, or unpleasant or repetitive work.” (Subcontractor S4)

Observations from several subcontractors (i.e. S3, S5, S6, S9 and S12) revealed that the problem of high staff turnover post-earthquakes might also lie elsewhere in the structure of the industry where the less competent and/or unmotivated people have entered the career due to the high demand in the rebuild sector; or in the recruitment method of the business where inappropriate methods of selection were used. Other symptoms of the problem reported by case study organisations include rising rates of absenteeism and poor motivation among young people resulting in low productivity.

The lead time for apprenticeships for trainees to become competent worker without supervision was another factor reported by subcontractors studied influencing their decision on resourcing. Case study organisations indicated that there may be some time before workers from these

programmes are fully productive. Subcontractor S7 reported that it would take at least 2 years to train a new entrant to become a qualified drain layer.

When asked about the implementation of the Construction Sector Workforce Plan (Construction Sector Leaders Group, 2013) at the subcontracting sector, more than half of subcontractors studied raised the need for the sector to receive more attention from the government departments in terms of funding and employment benefits. Some subcontractors (e.g. S4, S9, S12) suggested that there was still a lack of integrated workforce planning in the subcontracting sector due to the lack of engagement of employers. In addition, subcontractor S2 commented that:

“We are aware that the training providers are geared up and responsive to our workforce needs. But we felt that they should disseminate information about training to us in advance in order to assist us to re-align our respective annual training for trades with their training schedules. Otherwise, late publication of their training schedules will result in insufficient response, and we also have to postpone our training plans. Better engagement from either side (the subcontractor and the training provider) is needed to help them tailor their provision to our needs.”

4.2 Procurement environment

Government economic policy, according to the majority of subcontractors studied, has a great influence on the local market demand and revenues for businesses targeting that market. Case study subcontractors were asked to estimate the percentage change to their rebuild work since 2013 relative to the level of new works in other markets. Results show that the subcontractors form a continuum (Figure 2), with some fully involved in the infrastructure-rebuild related works and others having reduced their rebuild commitment while increasing their business as usual.

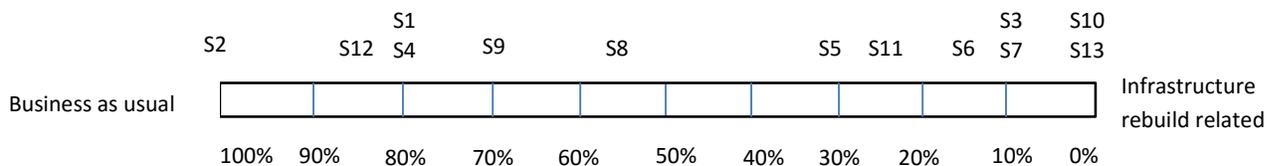


Figure 2: Business-as-usual and rebuild-related infrastructure work: Relative proportions of the subcontractors' involvement

Previous case studies indicated that the continued growth in new subdivisions in Canterbury and strong housing and infrastructure investments elsewhere, particularly Auckland, are drawing away skilled employees and subcontractors from the Canterbury rebuild (Chang-Richards et al., 2014). Evidence from subcontractors in this research reinforced this point and shows that there was a significant move between 2013 and 2014 from horizontal rebuild towards newly subdivided areas in the Canterbury region.

Several subcontractors (S1, S4, S8, S9 and S12) which primarily focused on the rebuild works for SCIRT immediately following the earthquakes in 2011 have decreased their rebuild-related workloads and increased their presence in new subdivisions since beginning of 2014. According to S8, for instance, the housing demand and development strategies post-earthquakes has particularly stimulated the growth of new subdivision areas in Christchurch, while the work of SCIRT alliance was anticipated to wind down in 2015. As a result, some subcontractors were in the transition phase moving from the earthquake-related rebuild market to the subdivision market.

Furthermore, there was a general consensus among the case study subcontractors that the heavy burden of red tape imposed by government, including for example, the prolonged consenting and tendering process and some of the unnecessary health and safety requirements, has fallen disproportionately on them. Several subcontractors complained about the compulsory safety rules around the heavy gear requirements in summer time which was imposed by the SCIRT support office. The complexity of varied requirements has partially resulted in the reluctance of some subcontractors to continue working for SCIRT alliance contractors.

5. Internal factors influencing subcontractors resourcing

The case studies examined suggest that a complex combination of internal factors unique to each subcontractor together influence the resourcing approach adopted. Business strategies that shape resourcing strategies in case studies included: focus on the quality of workmanship, reputation/brand oriented, maintained or expanded client base, deciding on operations in earthquake rebuild-related work and business as usual, service and/or skills diversification for

market expansion and forming partnerships. On the other hand, it was found that the majority of case study subcontractors considered their resourcing strategies in terms of employees' age, their commitment to the company, their merits like self-motivation and willingness to learn, and their technical and interpersonal skills.

5.1 Business strategy and vision

As was discussed in previous sections, individual subcontractors' business strategy and/or their vision has a substantial impact on the way skills are sourced and developed. Case study results show that most of subcontractors pursue a sustainable goal that can help them cope with future 'bust' periods. Therefore, their resourcing approaches were largely guided by policy that can be more consistently tied to business objectives.

There was a consensus across case companies that for business to withstand any other future shocks, a solid client base is the first priority. Figure 3 below describes a common pattern shown in most case studies. For instance, many subcontractors have seen the future opportunities coming from the new subdivision areas in Christchurch and/or other building activities likely in Canterbury region. A conscious move from the infrastructure rebuild to new market areas has been made by several subcontractors studied. It is as yet unknown if these subcontractors who gradually moved out of the horizontal rebuild zone will likely target for vertical rebuild once the building momentum is gained in the CBD.

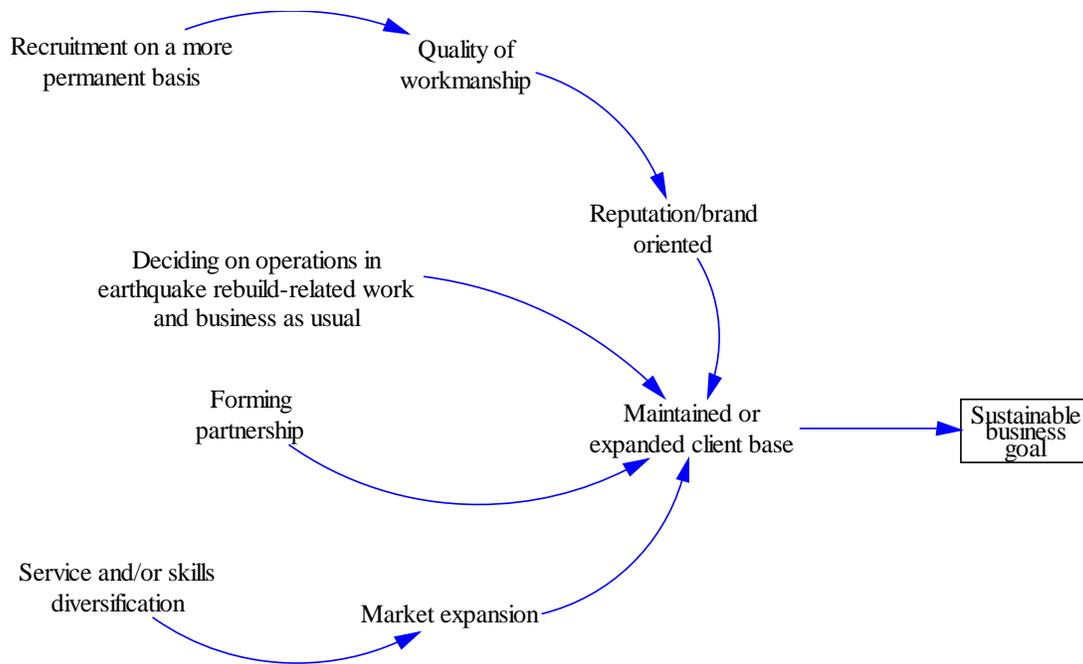


Figure 3: Business goal influencing resourcing strategies of subcontractors studied

Out of 13 studied subcontractors, 6 had the vision to recruit staff on a permanent basis as they found that casual labour required more supervision and often re-work was needed due to their substandard quality of workmanship which may affect the reputation of the company. Additionally, to either maintain the existing client base (e.g. Christchurch City Council, New Zealand Transport Agency) or expanding, focus on business as usual markets to build up their client base will benefit the company in the longer term as rebuild-related work was only perceived to be short-term in nature. Skills diversification was also preferred by many subcontractors as one of best measures for market expansion.

Furthermore, the firms studied formed a continuum with some having relatively independent operational system with no intention for partnerships with other companies, and others having developed sound contractual and management structures for partnerships of some kind. Recruitment of skills in other specialist areas, in some cases, combined with resource sharing through partnerships, became a channel to diversity business types. The subcontractors which emphasised the role of workers in its mission statement all aim to produce the best quality of

business services in the local market through its competent staff. Those companies had thus invested heavily in skills development.

5.2 Employee skills structure and needs

The characteristics of workforce (prospective labour pool in the market or existing workforce within the company) were also key factors considered by case study subcontractors when deciding on their resourcing strategies. Evidence in case studies found that the majority of subcontractors paid attention to the employees' technical and interpersonal skills, their commitment to the company, their merits like self-motivation and willingness to learn, and their age.

Most workers engaged in the subcontractors studied were in the 30-to-late-50s age bracket. At subcontractor S10, for instance, while the core workers were generally in their 30s and 40s, the majority of casual workers (about 65%) in truck driving and machine operating were in their late 20s. Surprisingly across the case study organisations, only one exception (subcontractor S2) had a positive attitude towards recruiting young-age group under 25 years old. Lack of reliability, motivation and willingness to learn, together with the fact that those group tends to have a high turnover, were the major reasons given by many subcontractors for not willing to take them on for employment.

Case study subcontractors generally opted for contingent workers by recruiting younger workers (under 25 years old) in an attempt to ensure flexibility in the use of labour due to the lower skill sets these workers have and to enable them to respond to uncertainties in the economic environment. However, as reported by several subcontractors (S2, S5, S11 and S13), this form of flexibility comes at the price of increased turnover rate among younger workers and hence lower performance of the company. Subcontractor S5 stressed that:

'The problem of youth employment in the industry needs to be addressed in a systematic way. Young people whom we brought in as a casual basis often do not see themselves as part of the 'family' because they have no sense of attachment to us. In small firms like ours, no extra money can be spent on training them up or offering equal conditions as regular workers. This in turn 'dilutes' their interests in the job and they may have no real commitment to the career they choose – they became 'jumping ship' later on in the industry.'

Overall, the characteristics of the workforce, linked to the company's business goal, had a substantial predictive view for a subcontractor's resourcing strategies because certain strategies depend heavily on worker input and commitment. Case studies show that subcontractors studied had paid more attention to workers' needs and concerns by the time of interviews, compared to their pre-event status. As they became more financially viable by reviving from the 'boom' of post-earthquake reconstruction, they started investing in good conditions of work to promote worker buy-in, which was consistent with their expectation that workers are the driving force in achieving a sustainable business.

6. Conclusion

This report has collated information about the factors that influence the strategies of capacity and capability development, thus their resourcing approaches, adopted by the studied subcontractors in Christchurch. The cases indicate that the majority of subcontractors made conscious efforts to put in place policies and practices that create a competent workforce and motivate workers to contribute to business performance.

It needs to be noted that the resourcing strategies adopted by subcontractors (e.g. investment in skills development, skills diversification, using casual or permanent workers) are shaped by their own characteristics and a range of internal and external factors. Overall, business strategy and a vision to achieve a sustainable business appear to be a driving force to invest in employment and skills development. There is no golden rule or formula to addressing the capacity and skills problem during a boom and bust cycle, as the optimum system depends on the industry structure, procurement environment, characteristics of workforces and the nature of the business.

Being through the bust and boom cycle following the 2008 financial crisis and the 2010/11 Canterbury earthquakes, most subcontractors realised that having productive and competent workforce and core capability is the key to creating a virtuous circle between quality of work and sustained client base in a small company. It remains critical that some of the issues identified in this report, such as high turnover, youth employment, lack of knowledge transfer within the subcontractor and at the sector level, and lack of investment in training and skills development,

need to be addressed in a systematic way. Better engagement of subcontractors by relevant stakeholders, however, should be the first step towards any of the solutions.

Annex: Profiles of studied subcontractors

Company code	Year established	Ownership structure	No. of Ep	Products/services	Market	BAU Vs. EQ-related	Pinch resources	Resourcing strategies	Business strategies
S1	1999	Family business	7	Commerical machine laid kerb and channel for roading Subdivisions and car parks	Canterbury	80%:20%	<ul style="list-style-type: none"> • Excavator operator • Kerb & channel machine operator 	<ul style="list-style-type: none"> • Ensuring job security • Recruitment on a permanent basis • Investment in training and offering promotion to identified 'loyal' staff • Good conditions of work 	<ul style="list-style-type: none"> • Strong client orientation • Expanding client network • Quality improvement of workmanship
S2	1968	Family business	10	Drain laying and maintenance Manhole installation Trench shield work and excavation	Canterbury	100%:0%	Drain layer	<ul style="list-style-type: none"> • Investment in recruiting and training local young people • Empowering workers to take initiatives • Good benefits 	<ul style="list-style-type: none"> • Strong brand/reputation • Improving company-wide communications
S3	1985	Incorporated	45 (30 in Chch)	Drainage/pipe laying Sheet piling/trench shields Pump stations and manholes Dewatering Pipe bursting and thrusting	Hamilton Christchurch	10%:90% in Christchurch	<ul style="list-style-type: none"> • Excavator operator • Truck drivers • Civil pipe-layer/drain layer 	<ul style="list-style-type: none"> • Retaining mature staff aged between 30 and 50 • Encouraging knowledge transfers among staff 	<ul style="list-style-type: none"> • Service diversity • Market expansion
S4	1950	Incorporated family	190	Construction, surfacing, bitumen products, transport, quarrying, contract management services	South Island	80%:20%	<ul style="list-style-type: none"> • Excavator operator • Drain layer • Project manager 	<ul style="list-style-type: none"> • Reduced recruitment and increased retention and skills development • Improved career path • Good conditions of work 	<ul style="list-style-type: none"> • Forming long-term relationship with other subcontractors • Product and service diversification • Regular review of business plan
S5	1983	Limited company Family	16	Construction of driveways, vehicle crossings, car parks and small subdivisions Asphalt Laying and excavations	Canterbury	30%:70%	<ul style="list-style-type: none"> • Drain layer • Excavator operator 	<ul style="list-style-type: none"> • Retaining family-committed staff aged between 25 and 40 • Strong preference for recruiting local people in Christchurch • Fast track of career path • Good pay at the market rate and other benefits 	<ul style="list-style-type: none"> • Maintain the current size of the company • Maximise business stability • Build good reputation • Employee multi-tasking
S6	1984	Limited company Family	50	Drainage, subdivision, traffic management, project management, quantity surveying, road infrastructure and bridge construction	Canterbury	15%:85%	<ul style="list-style-type: none"> • Truck driver • Excavator operator • Drain layer 	<ul style="list-style-type: none"> • Recruit staff in other newly established services (e.g. electrical services, dairy effluent disposal design and resource consenting application) • Investment in recruiting by using Big Splash and Hayes & Stellar recruitment agency • 2 weeks probationary period 	<ul style="list-style-type: none"> • Reduce rebuild-related work from 85% to 15% by end of 2015 • Expand client base • Diversity services • Instil corporate structure with family values • A possible partnership by joint venture

								<ul style="list-style-type: none"> • An information sharing policy for knowledge transfer 	
S7	1985	Family business	4	Drainage	Canterbury	10%:90%	Drain layer	<ul style="list-style-type: none"> • Recruiting through recruitment agencies and 'buy out' good recruits from them • Direct in-house training provided by directors • Prefer to recruit workers aged between 30 and 50 	<ul style="list-style-type: none"> • Joint venture with a local main contractor and be in charge of the drainlaying jobs • Adding Health and Safety into training schemes
S8	1954	Limited company Family – a subsidiary of Fletcher	31 in Chch	River and marine works Engery pipelines, civil structure and foundation work	Auckland Hamilton Wellington Canterbury	55%:45%	• Plant/machine operator	<ul style="list-style-type: none"> • Having a mentoring and knowledge transfer scheme for new staff • 250 hours of on-job-training before employees are permitted to undertake unsupervised work • Using recruitment agencies for recruiting temporary staff 	<ul style="list-style-type: none"> • Gradually reducing the rebuild-related work and increase the BAU road contracts from NZTA • Having access to all benefits provided by Fletcher
S9	1998	Incorporate d	40	Ground remediation, excavation and other earthworks Driveways and footpaths Foundations, retaining walls Civil construction Truck and excavator hire	Canterbury	70%:30%	<ul style="list-style-type: none"> • Truck driver • Plant operator • Civil engineer 	<ul style="list-style-type: none"> • Using recruitment agencies to find skilled engineers and machine/plant operators • Recruitment from Ireland • Encouraging workers to achieve higher qualifications and participate in Health and Safety training 	<ul style="list-style-type: none"> • Improving relationships and form partnerships with other companies • Exploring the potential of recruiting secondary school students
S10	1955	Incorporate d family	57 (9 based in chch)	Civil construction in roading, subdivisions, drainage, water reticulation, site works, traffic management, aggregate supply, transporting, landscape supplies	Whanganui Canterbury	0%:100% in Christchurch	<ul style="list-style-type: none"> • Truck driver • Plant operator 	<ul style="list-style-type: none"> • Relocating staff from Whanganui office • Recruiting people from other cities of NZ and from overseas • Strong perference for employees aged between 25 and 40 	<ul style="list-style-type: none"> • Building presence and reputation in Canterbury • Diversifying client base
S11	1999	Family business	11	Construction, surfacing and maintenance, bridge maintenance and construction, civil construction and commercial works	Canterbury	25%:75%	<ul style="list-style-type: none"> • Machine operator • Labourer 	<ul style="list-style-type: none"> • Strong perference for recruiting locally through 'Word of Mouth' • 'Equal productivity' policy to increase staff morale and reduce animosity • Rapid growth of staff • Relationship building activities between managers and staff 	<ul style="list-style-type: none"> • Expanding client base by including major consturction companies • Strong bardn/reputation • Quality improvement of workmanship
S12	1979	Incorporate d family	90 (50 based in chch)	Subdivisions, road works, site clearance, house foundations, drainlaying, landscaping, and forestry work	Canterbury (Timaru and Christchurch)	85%:15%	<ul style="list-style-type: none"> • Excavator operator • Site worker • Truck driver 	<ul style="list-style-type: none"> • Intensive in-house training other workers to become skilled excavator operators • Strong preference for local recruits • Using recruitment agencies for recruiting temporary staff 	<ul style="list-style-type: none"> • Christchurch office established after the earthquakes • Relationships formed with large contractors in the SCIRT Alliance team

									<ul style="list-style-type: none"> • Increase the workloads from new subdivisions in Christchurch
S13	2008	Incorproated	20	Pipe and drainage	Auckland Christchurch	0%:100%	Drain layer	<ul style="list-style-type: none"> • 90 day trial for new recruits • Strong preference for candidates with interpersonal skills • Increasing organisational capacity to attract local people 	<ul style="list-style-type: none"> • Semi-alliances with Christchurch subcontractors • Investment in building company capacity (premises, facilities) • Increasing the subdivision work by end of 2014

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