A Qualitative Study of Contractors' Views on Prequalification in the New Zealand Construction Industry

Fiona Jones: 300505467

School of Health / Te Wāhanga Tātai Hauora, Victoria University of Wellington

HLWB513: Research Project

Dr Chris Peace / Dr Joanne Crawford (Supervisor)

22 October 2021

Word Count: 19,952 (excluding reference list and appendices)

Acknowledgements

Throughout the writing of this dissertation I have received a great deal of support and assistance.

I would first like to thank my supervisor, Dr Joanne Crawford, whose expertise was invaluable throughout the project. Your gentle delivery of insightful feedback and encouragement was the constructive support I needed to reign in my thinking and keep going.

I would also like to thank my tutors, Dr Chris Peace, Andy White, Dr Alexandra Muthu and Helen Sadgrove for their valuable guidance throughout my studies. You provided me with the tools that I needed to choose the right direction and successfully complete my research project.

In addition, I would like to thank Dr Drew Rae whose expertise was invaluable in formulating the research questions. You encouraged me to take on a topic I thought held no spark and instead found to be illuminating.

Many thanks also to the participants that took part in the study who gave up their time and shared openly about their experiences, enabling this research to be possible.

And my biggest thanks to my family for all the support you have shown me through this research, the culmination of three years of distance learning. For my kids, sorry for being even grumpier than normal and for all the extra chores. And to my husband, Glyn, without your unwavering belief I would not have dreamed I could do it (and yes, I know it was mostly you who did the chores, thank you!).

Abstract

The purpose of this study is to explore New Zealand construction contractors' perceptions of prequalification, a typical contractor selection instrument. Outsourced construction work tends to be inherently high-risk. The contractors completing it are resource-constrained and overrepresented in harm statistics. For example, the construction industry, which is strongly associated with a contracting model, makes up 8-10% of the New Zealand workforce but accounts for 25% of the fatalities (CHASNZ, 2019).

Current research on prequalification mainly focuses on identifying ideal criteria and decision-making models with an acknowledged dearth of studies examining its effectiveness. A consequence of the focus on prequalification methods without validation has been prioritising client or hiring enterprises' perspectives, often leaving contractor voices unheard. Given the high level of resource invested in prequalification, this study aims to offer insight into how contractors' perception of prequalification influences the implementation of their safety systems and generally impacts their safety.

Semi-structured interviews were conducted with 14 participants from the New Zealand construction industry, chosen for its high rates of contracting and harm. Braun and Clarke's (2019b) reflexive thematic analysis method was used to code and analyse the data. The codes were refined and organised into themes and then categories, not based on quantifiable measures but on capturing something important relating to the overall study purpose (Braun & Clarke, 2006).

In analysing the data, three categories of themes emerged: participants' perceptions of prequalification processes, the people and relationships involved, and the commercial and personal impacts it has.

Participants viewed prequalification as a generic and unfair process that was overly complex and did not facilitate learning or better safety outcomes onsite. Although proud of their people and work, mistrust of client and third-party prequalification companies' motivations for requiring prequalification has led to misunderstanding and disconnection despite an expressed desire to engage in a meaningful way.

Prequalification was perceived as bringing extra loading to participants resources, which they felt clients seemed unaware of, and a sometimes-insurmountable level of pressure to change their Safety Management Systems. The outcome for participants was a

sense of being unheard, dictated to, and stressed to the point of having a substantially negative impact on their wellbeing.

The pressure exerted by prequalification caused the contractors studied to manipulate their safety statistics and change or add to their Safety Management System. Furthermore, these changes were frequently made reluctantly, and the participants saw little benefit or improvement in them. The influence of prequalification may also increase the risk to participants' employees, either directly by the imposition of unsuitable or unfamiliar controls or indirectly by the diversion of resources and complicating communication. Participants also indicated that prequalification is directly impacting their wellbeing by generating high levels of stress as they navigate the process of attaining prequalification.

Although not definitive, this study may give pause to those who place their faith in prequalification as a panacea and prompt reflective thought on the human impact it has on the contractors upon whom it is imposed. Furthermore, future researchers who attempt to validate prequalification are encouraged to consider in their conclusions the impact of a remedy that might be more toxic than curative.

Contents

List of Tables

Introduction

The impact of the 2010 Pike River Mine disaster, which took 29 lives, had an indelible mark on New Zealand (NZ) health and safety legislation, impelling the Health and Safety at Work Act 2015 (HSWA) and the establishment of a new Regulator (PRRC, 2012). However, that 13 of the 29 victims were contractors and compensation offered to their families was minimal has been a less visible element of the story (Lamare et al., 2015).

Increased outsourcing and the small nature of most contractors have a cumulative effect on risk and uncertainty, making contractor safety a subject of significant interest and focusing researchers and clients on contractor selection processes (Mayhew et al., 1997). Processes that originally considered financial and quality capacities have extended to include safety and are often collectively referred to as 'prequalification' (Holt, 2010).

Although the validity of prequalification as an effective measure to reduce harm remains unclear, its prevalence as a selection tool has become standardised (Holt et al., 1995; Huang & Hinze, 2006). Many 'good' or 'best' practice guides specify its use and reinforce the sense of assurance derived from it (HSE, 2011; Inouye, 2015; WorkSafe, 2019b). As safety prequalification has increased in uptake, so has the research surrounding it, with researchers focused on deducing the optimal criteria or decision-making method. However, few have attempted to validate their results by examining the predictive accuracy of their model, and those that have tend to use proxy and self-reported measures for which the supporting theory is, at best, divided.

As a Safety Professional, I have experienced first-hand the many interfaces of prequalification as a contractor selection instrument, from imposer to imposed upon. This experience and the abundant reference to prequalification as a safety mitigation tool has impelled this study. With much of the literature focusing on clients' and hiring contractors' needs, little or no thought is given to the perceptions of contractors required to submit to prequalification processes to win work (Baroudi & Metcalfe, 2011; Jennings & Holt, 1998).

What is the Harm in Contracting?

WorkSafe (2019b, p. 5) define contracting as "when a PCBU[1] (the contracting PCBU) hires someone else (the contractor – also a PCBU) to carry out temporary work under contract". However, Mayhew et al. (1997, p. 164) consider defining the noun 'subcontractor', which tends to be used interchangeably with 'contractor', as complex because it encompasses a range of working arrangements with blurred boundaries. This ambiguity in definition means reliable statistics relating to the extent of contracting and subcontracting are challenging to find. There is, however, a consensus in the literature that economic factors and market uncertainty have required a more flexible and lower-cost workforce. This change is driving global growth in contracting and subcontracting, which are often associated with poor health and safety (H&S) outcomes (Inouye, 2015; Mayhew et al., 1997; Swuste et al., 2012; Underhill & Quinlan, 2011).

Three key themes arose in the literature describing why poor H&S outcomes manifest for contractors: the vulnerability associated with small contractor enterprises, the outsourcing of high-risk work and the complexity of communicating H&S information through layered contracting chains.

Size Matters

In a trend that is replicated internationally, the NZ economy is dominated by small businesses (0-20 employees) who make up 97% of all enterprises, the highest proportion of which work as contractors in high-risk industries such as construction (MBIE, 2014; OECD, 2002; Salguero-Caparrós et al., 2020). Mayhew et al. (1997) found that small businesses were less likely to see value in H&S risk assessment, training and supervision. In a review of vulnerable workers in small businesses, Lamm (2014) found smaller enterprises have insecure work pipelines, fewer resources and are culturally and ethnically diverse. These factors may also explain the derogation of H&S found by Mayhew et al. (1997). In their thematic analysis of fatal incident reports from the Australian mining industry, Valluru et al. (2020) abductively reason that the time and financial pressures experienced by subcontractors can lead to safety work being deprioritised. The link between resource constraints and H&S capacity and motivation was mirrored by Legg et al.'s (2009) findings from case studies of nine small NZ businesses across various industries.

---

[1] A PCBU is a Person Conducting a Business or Undertaking

The dearth of statistical information available for small businesses was significant in making any estimation of the resulting H&S burden for small businesses in NZ unknowable (Legg et al., 2009). Lamm (2014, p. 161) aligns with this in concluding small businesses are "notoriously difficult to research" with their voice likely to be "marginalised and 'invisible'". Quinlan and Bohle (2008) make the same point of uncertainty by highlighting a likely distortion of reporting resulting in an understatement of work-related injuries and disease, which would also contribute to contractor voices going unheard. In connecting small businesses, precarious work and the adverse effects on the H&S of workers, Quinlan and Bohle (2008, pp. 499, 506) assert "the response of governments and regulatory agencies to these problems has been, at best, spasmodic and partial" and "the larger shift to a more fractured and atomistic labor market" has rendered Safety Management Systems (SMS's) and regulatory protection as having "little meaning".

The Pressures, Disorganisation and Regulatory Failure (PDR) model developed by Quinlan and Bohle (2004) indicates sources of income insecurity and the intense competition for work influence safe work practices and organisations' lack of commitment to a stable workforce. They also assert that H&S employment regulation is weakened by precarious employment arrangements (Quinlan & Bohle, 2004; Underhill & Quinlan, 2011). These themes are consistent throughout the literature.

Inherent Risk

Labour flexibility, associated cost reductions, the externalisation of less rewarding and dangerous activities, and the transference of financial risk are listed by Manu et al. (2013) as justifications for subcontracting in their study based on the British construction industry. Although there are reasonable economic grounds for subcontracting, the negative consequences are significant, with many authors asserting a relationship between high rates of injury and illness and industries dominated by outsourcing, such as construction and agriculture (Harvey et al., 2019; Mayhew et al., 1997; Underhill & Quinlan, 2011). This connection is validated by WorkSafe (2020), which consistently lists construction and agriculture as having some of the highest injury and illness rates. The construction industry is strongly associated with a contracting model and makes up 8-10% of the workforce in NZ, however, it accounts for 25% of the fatalities (CHASNZ, 2019). These statistics add weight to

Valluru et al.'s (2020) assertion that being an expert in the work may not translate to an expertise in safety.

These harm statistics may explain the prevalence of construction-based studies in the contractor safety literature, and these tend to highlight training as amplifying the inherent risk (Mohammadi et al., 2018). In their research into the application of High Reliability Organisation Theory in the construction industry, Harvey et al. (2019) state the "project-based nature, transient workforce, widespread outsourcing of labour and financial pressure of the construction sector limit opportunities for investment in employees and learning from experience". In their international survey of construction professionals, Gunduz and Khader (2020, p. 9) also found a lack of investment in employees, with insufficient safety training indicated as a top hazard. Emphasising a "labour and machinery intense environment" which "interacts with accelerating and overlapping activities", Gunduz and Khader (2020, p. 1) neatly summarise my experience as an H&S Manager in the NZ construction industry.

Communication Complexity

The complexity of contracted projects leads to multiple communication interfaces between clients, main contractors, and layers of subcontractors. The result of this complexity for subcontractors is that "the communication of important issues and updates hardly reaches them at times" (Valluru et al., 2020, p. 12). In their mixed-methods study, Gao et al. (2018) found that in the complex labour structure of international construction projects, language and cultural barriers significantly impacted safety management, a situation exacerbated by high turnover rates and low safety awareness of local workers. In their survey of the Korean construction industry, Choe et al. (2020) found communication challenges for subcontractors who had frontline staff with lower H&S competencies and high turnover rates.

Choe et al. (2020) also considered intra-organisational communication, finding that although there was no statistical difference in site safety management practices between contractors and subcontractors, the gap between head offices and sites was significant. They concluded this disparity, which may be interpreted as an example of the difference between work as imagined and work as done (Hollnagel, 2014, pp. 40-41), could "negatively impact the safety performance of a project by pressuring construction site employees who

manage safety to satisfy a safety target that is excessively and optimistically estimated by the employees at head offices" (Choe et al., 2020, p. 9). In contrast to Choe et al. (2020) finding no gap between Korean contractors and subcontractors, in their ethnographic study of Australian construction sites Lingard and Oswald (2020) found differing understandings of safety, particularly concerning site safety rules between principal contractors and subcontractors. While it is possible this variance is an example of the cultural differences noted by Gao et al. (2018), the difference in study methods, survey versus ethnography, cannot be discounted. The differences in understanding observed by Lingard and Oswald (2020) may be better explained by the inability of site SMSs to cope with subcontractors identified by Mayhew et al. (1997) and Valluru et al. (2020). Valluru et al. (2020, p. 9) characterised sub-contractors as often working on multiple sites with varying SMSs leading to "confusion amongst the employees" and "sometimes losing track of the SMS they are functioning under". This systems failure was seen to leave subcontractors vulnerable to risk (Valluru et al., 2020).

The importance of leaders in communication and the influence of safe practices is often referenced in the literature. For example, in a mixed-methods study of the Australian civil construction industry Bahn (2009) found that larger businesses had a lower likelihood of worker injury, attributed to a difference in communication and interaction between managers and workers. Bahn (2009) asserted that the CEO's of larger businesses were likely to view the risk of injury as higher than the working owners of smaller businesses. Because these active owners work directly alongside their employees, it was concluded they are likely to impose their risk perception directly onto workers. This conclusion aligns with the views of Wu et al. (2016) on the importance of leaders as role models. In their survey of Chinese high-speed railways construction projects, they concluded charisma was a necessary leadership quality and role modelling the most effective influencing technique. They also indicated that safety motivation and coaching was less effective than anticipated (Wu et al., 2016).

Lingard et al. (2020) found in their longitudinal case study of an Australian public infrastructure programme that the initial tension created by a client imposing H&S controls was alleviated through the development of interpersonal relationships. By engaging in "boundary spanning behaviours" and building these local channels of communications,

clients were able to more effectively influence contractors' H&S practices (Lingard et al., 2020, p. 1).

The prosecution of Phil Stirling Building Limited (PSB) and Duncan Engineering Limited (DEL) in February 2019 demonstrates the cost of getting inter-organisational communication wrong (WorkSafe, 2019a). The 2017 incident where PSB and DEL failed to communicate while working on the same site left two workers seriously injured and both companies with significant financial penalties. WorkSafe's (2019a, p. 1) assertion that "communication on jobs with multiple contractors was vital" is shared by Gressgård and Hansen (2015), who emphasise the value of inter-organisational learning found in communication and collaboration. Building on this with resilience engineering theory and stressing the importance of communication and leadership, Harvey et al. (2019, p. 531) state, "workers are adaptable – using initiative to work independently – but without clear lines of authority, regulation, and prioritisation of safety, the natural human tendency towards efficiency leads to unsafe workarounds and violations rather than resilient performance adaptations".

Prequalification as a Panacea

Given that outsourced work is associated with high harm statistics, small enterprises, and challenging communicating chains, it is understandable that working with contractors is perceived as 'risky'. This perception has prompted many organisations to envelop safety into their existing selection processes, seeking assurance by requiring contractors to undertake a prequalification process to assess their likely competency and draw predictive conclusions about their future safety performance (Holt et al., 1995; Huang & Hinze, 2006; Inouye, 2015).

Despite a potential conflict of interest, prequalification researchers also underscore the importance of 'good practice' contractor selection, often starting with statements similar to Palaneeswaran & Kumaraswamy's (2001, p. 73): "Contractor selection is a critical activity that plays a vital role in the overall success of any construction project" (see El-Sawalhi et al., 2007; Holt, 2010; Jafari, 2013; Russell et al., 1992 for more). In their literature reviews, prequalification researchers often reiterate the history of contractor selection as detailed by Holt et al. (1995). Mapping the impact of the post-war Simon Committee Report of 1944 to the 1964 Banwell Report and other influences on modern tendering trends, Holt

et al. (1995) explain the shift from open to selected tending processes, creating a need to pre-filter contractors. This pre-filtering is often referred to as prequalification (Iyer et al., 2020), which in a composite of various definitions, Acheamfour et al. (2019, p. 71) define as "a pre-tender process of selecting a pool of contractors with the required capabilities to execute a project to meet client's specific objectives".

The Liability of Contracting

As in the case of HSWA, the introduction of legislation can be aimed at driving improvement (PRRC, 2012), and Holt et al. (1994b) assert that this has likely triggered the inclusion of H&S in prequalification. Walters and James (2011) deduce from a literature review of supply chain influences that without regulatory pressures employers are unlikely to voluntarily adopt preventative H&S measures. Salguero-Caparrós et al. (2020) conclude in their literature review that while legislation can improve H&S, it can be too complicated for small businesses to understand. Salguero-Caparrós et al. (2020) also acknowledge prequalification may be considered one of the incorporeal barriers of which Hollnagel (2008, p. 221) deemed "a reactive approach which is insufficient by itself to guarantee safety".

The inference of liability limitation taken from the many 'good' or 'best' practice guides which reiterate the importance of contractor selection (HSE, 2011; Inouye, 2015; WorkSafe, 2019b) may explain the views of organisations like those Inouye (2020) found to consider prequalification a success despite acknowledged concerns, and the practitioners whom Holt et al. (1994b, p. 247) suggested had "particular importance attached to prequalification". WorkSafe (2019b, p. 9) explicitly lists an expectation that contracting parties will "choose the best contractors and site managers for the job using prequalification". A position further reinforced by the acceptance of an Enforceable Undertaking (EU) against Downer New Zealand Limited where the review and improvement of prequalification processes constituted more than 45% of the total EU value (Robertson, 2017). However, Wilbanks (2018, p. 37) likens prequalification to desktop auditing, in essence, a documented system assessment or "an assessment of what the contractors said they were doing, and not one of whether the program requirements were, indeed, routinely met". That such process would be considered to meet the due diligence requirements of seeking and communicating H&S risk or the risk assessment component inherent in the 'so

far as is reasonably practicable' (SFAIRP) test imbedded in legislation seems unlikely (Peace, 2017; Peace et al., 2017).

It is also worth mentioning much of the narrative around selection and prequalification processes focus on the client or hiring contractor's voice and the risk contractors bring to them (Baroudi & Metcalfe, 2011; Jennings & Holt, 1998; Mills, 2005). As with Nunes (2012) finding that clients can expose contractors to unknown risks, Wilbanks (2018, p. 39) also questioned the risk clients might bring to contractors, suggesting it may be "wise for all parties to challenge the current and popular paradigm".

Assurance in a Documented Approach

There is a view that the documented safety management systems (SMSs) required for prequalification drive better H&S outcomes, though the literature is far from united in this. For example, in their survey of safety officers, Fernández-Muñiz et al. (2009) indicate that documented SMSs improve risk prevention. Vinodkumar and Bhasi (2011) and Manjourides and Dennerlein (2019) assert that certification of such SMSs improves H&S performance, however, Heras-Saizarbitoria et al. (2019) found only a loose association. Safety research, however, is tending toward a growing criticism of the "paper safety" identified by the Nimrod Review, where the three parties involved were accused of "simply going through the motions together of producing 'paper safety'" (Haddon-Cave, 2009, p. 565). Dekker (2014) claims the bureaucratisation of safety has caused a detraction from more value-adding safety activities, an opinion shared by other safety researchers (see Blewett & O'keeffe, 2011; Rae & Provan, 2019 for more) and the H&S professionals responsible for completing such work (Provan et al., 2018). In more specifically prequalification-focussed research, Hatush and Skitmore (1997a, p. 34) found the construction professionals interviewed felt "the formal procedures necessary to collect the information seem to have taken on a life of their own". Wilbanks (2018, p. 36) suggests that without a proven legal or practical benefit "safety and health professionals should grow circumspect about their devotion to written safety programs for the purposes of contractor safety prequalification". Beyond the drivers for requiring SMSs, Valluru et al. (2020, p. 10) question the validity of clients and principal contractors verifying the suitability of subcontractor SMSs given the work subcontractors undertake is "clearly outside their domain".

An Opportunity to Learn

Outside of liability considerations and the assurance derived from SMSs, a commonly cited reason for organisations to require their contractors to prequalify is the opportunity it provides contractors to identify areas for improvement (Awad & Fayek, 2012; Holt et al., 1994a; Rashvand et al., 2015). Baroudi and Metcalfe's (2011) qualitative study found clients also believed prequalification facilitated communication and created a fair playing field. Contractors may not share this view, however, as the same research found contractors felt prequalification stifled innovation. Jennings and Holt's (1998) survey suggested contractors had little faith in the quality of the prequalification, believing instead that clients were ultimately more focused on lowest price. Mills' (2005) survey found a similar disparity in client and contractor views, with contractors rating the importance of safety factors in prequalification higher than clients did.

The Effectiveness and Effect of Prequalification

The prolific volume of literature written by prequalification researchers is primarily focused on two factors (Acheamfour et al., 2020; Holt, 2010):

1. The selection criteria used, claiming this as the most important factor to study because the results of any algorithm would be meaningless without correct criteria (see for example Dennerlein et al., 2020; Doloi, 2009; Hatush & Skitmore, 1997a; Mills, 2005; Russell et al., 1992).

2. The correct algorithm to make the best decision, claiming either selection criteria have been amply covered or the more complex and vital factor is the decision making, often cited in more recent literature as a 'multiple criteria decision-making problem' (see for example Afshar et al., 2017; El-Sawalhi et al., 2007; Hasnain et al., 2018; Holt, 1998; Ng, 2001; Sonmez et al., 2002).

The standard of this research raises questions and may relate to the postpositive world view of the researchers, that the 'right' set of criteria or decisional algorithm exists and we should continue striving to find it (Creswell & Creswell, 2018). This shared world view has led to many employing quantitative methods, particularly surveys, as Holt (2010) also noted in an examination of contractor selection research. For example, although Russell et al. (1992, p. 128) use qualitative interviews to develop their survey for assessing

prequalification criteria, the survey results are then used to definitively declare the most important criteria and prescribe their use (Russell et al., 1992, p. 120). This approach remains prevalent, for example, Rashvand et al. (2015) use a process of two surveys, first to narrow and rank criteria, and then to develop a prescriptive prequalification model. However, the use of surveys limits respondents' options to reply, so declaring the results as prescriptive actions rather than perceptions should be questioned. Rae et al. (2020) encourage researchers to recognise "the limits of quantitative surveys for measuring anything other than individual psychological constructs". Similarly, Holt (2010, p. 319) suggests surveys are "more convenient to the researcher than relevant to the research problem".

With little research on the effectiveness of prequalification, some researchers have identified this as an opportunity for further study (see for example Dennerlein et al., 2020; Liu et al., 2019). An attempt to validate the process of prequalification was undertaken by Manjourides and Dennerlein (2019), who compared leading and lagging indicators extracted from a prequalification database. The score applied by the prequalification agency to the contractors SMS (lead indicator) was compared to various recorded injury rates (lag indicators), with the result that higher SMS scores were related to lower injury rates. Manjourides and Dennerlein (2019) then used these results to assert that prequalification methods based on SMS assessment are supported. However, there are significant limitations to their study, including the acknowledged self-reported and unacknowledged indirect nature of the measures used. Rae et al. (2020, p. 6) state "precision is not a solution to epistemic uncertainty" and would likely consider the use of self-reported and proxy measures in this study as "bad data". A view supported by Inouye (2020, p. 5) where clients interviewed about their prequalification process raised concerns about "savvy" contractors who were "gaming the system" through underreporting incidents or submitting plans designed to "pass the muster". Wilbanks (2018, p. 38) comments on the side-industry created by this approach and cites numerous consultants selling such plans. Regardless of intent, Iyer et al. (2020) note that even prequalified contractors can perform poorly on projects when risks are not considered during the initial prequalification process.

The "creative" management practices suggested by Inouye (2020, p. 5) and the pressure of intense competition identified by Quinlan and Bohle (2004) raise the question as to what cumulative effect this is having on the behaviour of those required to prequalify, a

narrative that could not be found in the literature reviewed. A salient consideration when added to Mayhew et al.'s (1997) thoughts on the contracting payment-by-results system bearing similarity to the incentive payment systems known to encourage perverse behaviours, negatively impacting safety outcomes.

Another possible unintended effect of the universal adoption of prequalification is the evolution of ever more complex models meaning "these solutions may simply be replacing one 'demanding' state with another" (Holt, 2010, p. 319) and unhelpfully widening the gap between practitioners and researchers (Almklov et al., 2014; Shorrock, 2020).

The Gap and the Opportunity

Over time open tenders have been replaced by selected tenders, in parallel with a growing risk awareness driven by the evolution of H&S legislation, creating a push to choose contractors with systematic care. Contractors are often small enterprises, working in high-risk industries with complex chains of communication, resulting in higher rates of injuries and illness. This situation makes their plight a concern for safety researchers as we strive to find solutions that improve safety outcomes.

Prequalification is thought to offer a solution, reducing liability and increasing communication and learning. However, there is much debate in the literature about the true assurance and relationship-building to be gained and doubts surrounding the quality of the associated research. Therefore, the crucial question is: *Is the process of prequalification an effective means to reduce harm?*

To achieve a definitive view of the efficacy of prequalification, the ideal solution would be to directly map the output of various prequalification models, often scores, against the observed harm events of associated projects. Given the challenges in accessing validated prequalification results and verified injury data, this is likely to be a Don Quixote task.

However, there is significant investment from contractors, clients, and regulatory bodies in prequalification with little research on its impact given the competing demands contractors experience from H&S duties to resourcing and project delivery. Therefore the purpose of this study is not to attempt to validate nor invalidate prequalification, but to give voice to the currently marginalised contractors upon whom prequalification is imposed. The

objective is to explore the perceptions of contractors and form a view of behaviours they see as being driven by the requirement to prequalify, including:

a) how prequalification impacts contractor SMS implementation? For example, data collection, documentation, and work practices; and

b) what effects prequalification has on contractor safety generally?

Methods and Design

Literature Review Strategy

An initial literature review was undertaken to refine the direction of the study by understanding the factors affecting contractor safety, the history of contractor selection, the development of prequalification research and the safety theories that may support or challenge its effectiveness.

The search was conducted on the Victoria University of Wellington Te Waharoa and Google Scholar search engines and then extended to include Scopus, ScienceDirect, ProQuest, EBSCO, and Research Gate searches.

The search covered:

1. General contractor safety.
2. Contractor selection and prequalification.
3. Supporting safety theory and science.

Keywords included combinations of "contractor", "subcontractor", with and without "health" and "safety". These were then expanded to include "selection" and "prequalification". To explore related safety theory, various search terms were used including "indicators", "paper safety", "certification", "safety management system", "safety outcomes", "legal", and "liability".

The search was restricted to books and peer-reviewed journal articles available online. To gain a perspective on the foundation and development of the associated research, no limitation was placed on the date of search results. Abstracts of the articles were scanned for relevance, and papers from their reference lists also reviewed.

Websites searched included WorkSafe NZ (WorkSafe), the Ministry of Business, Innovation and Employment (MBIE), the Organization for Economic Cooperation and Development (OCED) and the International Labour Organization (ILO).

The story developed from the literature is one where despite a growth in research relating to prequalification, contractors continue to experience poor HS outcomes. Although contractors are significant stakeholders in the prequalification process, there was little research that included their perspectives. Not including contractors in the narrative has

limited the understanding of how the requirement to prequalify has impacted their management of safety.

Therefore, the interest of this study is contractors' perceptions of prequalification and its influence on their management of safety and the implementation of their safety systems. The focus on perceptions resulted in a qualitative approach being taken (Creswell & Creswell, 2018). Qualitative research is often criticised as being inexact when considering the subjectivity and replicability of the study (Labuschagne, 2003; Mays & Pope, 1995). However, as the perceptions studied were not widely covered in the current research, any reduction in value this represents is offset by the richness of the data obtained (Braun & Clarke, 2013; Teddlie & Yu, 2007).

A constructionist worldview has focused me on exploring contractors' generation of meaning from prequalification requirements in the form of their perception of the safety behaviours it drives (Crotty, 1998). Therefore, it is essential to acknowledge that my findings are considered to have been constructed by me and influenced by my values and assumptions (Braun & Clarke, 2013). This point is notable because I have worked as a Safety practitioner for third-party prequalifiers, clients and contractors and experienced many views of prequalification, from value-adding to imposition. Although this experience brings a beneficial level of technical knowledge, it has required an explicit level of self-awareness to recognise the impact of my behaviour and question the influence of conscious and unconscious bias and assumptions on my findings (Braun & Clarke, 2013; Maxwell, 2009).

Participants

The high harm statistics associated with the NZ construction industry and my experience working in this industry has motivated the purposeful sampling of construction-based enterprises (Henry, 2009; Maxwell, 2009; Mays & Pope, 1995). While this restricted the breadth of data gathered, as previous research identified an association between safety outcomes and organisation size, enterprises with varying employee numbers were included in the sample, allowing exploration of this factor (Bahn, 2009; Legg et al., 2009).

I initially expected that a sample of ten enterprises would likely provide an adequate data corpus (Braun & Clarke, 2013). Although a prior determination of sample size was not compatible with the relativist ontology of the study, this sample size was posited as a

pragmatic rule of thumb, open to revision as required (Braun & Clarke, 2013; Sim et al., 2018).

I recruited participants via reoccurring advertisements on LinkedIn and the Safeguard Forum. Individual participants selected were in roles within their organisation that included primary responsibility for H&S management. I made this decision because they would likely have direct knowledge of H&S activities, including completing prequalification responses. Following the recruitment of the first ten participants, it became apparent that representation from organisations with less than 20 employees was absent from the sample. This absence would have impacted the ability to source the depth of information Teddlie and Yu (2007) suggest a small but carefully selected sample can achieve. Therefore, more targeted advertising was undertaken through CHASNZ and their database of small contracting organisations, yielding a further four participants.

My experience in the NZ construction industry led to having professional relationships with two of the participants recruited. Both relationships are amicable with no commercial implications and proved beneficial in making the participants comfortable answering the interview questions with open conversation.

The two captured demographics of participants, their roles and the total number of employees in their organisation, are described in Table 1 below:

Table 1. Interview Participants

Number of Employees in Organisation	Role of Participant
1	Owner/Director with H&S responsibility
10	Owner-Operator
10	HSE Advisor
15	Contract Manager
20	Director and General Manager
22	Operations Manager
55	QHSE Manager
60	HS&E Manager
75	SHE Manager
77	Health and Safety Coordinator

120	Compliance and Risk Manager
240	Health and Safety Manager
390	Health and Safety Business Partner
5,000	National Health and Safety Manager

Based on the sizes of the participants' organisations, I used the following definitions when considering the results:

- Small – less than 50 employees (effectively in this study, they were less than 22)

- Medium – between 50 and 100 employees

- Large – More than 100 employees

Data Collection and Analysis

As there was little research to direct a more defined approach, I conducted semi-structured interviews (Maxwell, 2009). This interview technique allowed a broad focus on the study objectives while retaining the flexibility to explore other perceptions and subjects that arose and allowed participants to tell their own stories (Kvale & Brinkmann, 2015; Nathan et al., 2019). See Appendix A, page 75, for a copy of the interview schedule reviewed and trialled with two H&S Advisors connected to the NZ construction industry before use. I used feedback from these two H&S Advisors to ensure the questions were easily understandable, likely to elicit the information sought, and able to be completed within a 60 - 90 minute timeframe. I conducted the interviews in person where possible, but where this was not viable due to distance or COVID-19 restrictions[2], I used online video calls. All participants gave permission for the interview audio to be recorded.

Braun and Clarke's (2019b) reflexive thematic analysis method was considered to align with the study's intent and my worldview as a researcher. This six-phase method for identifying, describing, analysing, and reporting themes and patterns within data is characterised by Braun and Clarke (2006, p. 83) as being able to provide "a rich thematic description of your entire data set". Although some depth and complexity may have been sacrificed with this approach, the richness of the overall description has remained (Braun &

---

[2] At the time of the interviews there was concern relating to potential fluctuations in the 4-tiered Alert Level system first introduced by the NZ Government in March 2020 to help combat the spread of COVID-19. These concerns often limited my ability to travel.

Clarke, 2006). A drawback of thematic analysis is its poorly described methodology; however, the benefits of its flexibility and relative ease of use were judged to outweigh this shortcoming (Braun & Clarke, 2013; Nowell et al., 2017).

I transcribed the data verbatim (Kvale, 2007), and read and re-read the data to facilitate the necessary familiarity for insightful coding, as suggested by Braun and Clarke (2006). Following this, I coded the dataset by selecting keywords, ideas or short descriptions. As few quantitative studies have explored contractor perceptions of prequalification, the coding process I used was an inductive analysis without using a pre-existing coding frame (Saldaña, 2016). The coding was not applied line by line as espoused by Charmaz (2006), but to the meaning units suggested by Rennie (2006) as determined once the I became sufficiently familiar with the data. The generally explicit nature of the data gathered allowed me to conduct the analysis at a semantic level (Braun et al., 2019). I made the codes as descriptive of participant thoughts as possible and recorded more interpretative ideas in a research journal (Saldaña, 2016).

I then organised the codes into potential themes, not based on quantifiable measures but on capturing something important relating to the overall study purpose (Braun & Clarke, 2006). By allowing the coding to be data-driven, a cross-section of experience related to the study objectives was gained, providing descriptive and interpretive themes (Braun & Clarke, 2006). This approach was supported by the semi-structured interview data collection method to identify unexpected themes (Braun & Clarke, 2013).

The data was reviewed, checking descriptions and meanings of the identified themes, ensuring they remained consistent throughout the participants' interviews and accurately reflected their voices. This step resulted in a refinement of the themes, with some merged and others discarded as misinterpretations. I then sorted the themes into organisational categories and reviewed the data again to develop the story each category told (Braun & Clarke, 2013; Maxwell, 2009). This review also facilitated identifying illustrative quotes for inclusion in this report as examples and sources of insight (Patton, 2015). The writing of the report enabled a final opportunity for analysis as I moved between the data, codes and themes, and incorporated the literature into the final discussion (Braun & Clarke, 2006). The complete framework of codes, themes and categories developed can be found in Appendix B, page 78.

Rigour/Validity Strategy

The concept of data saturation is often applied to determine sample size and reflect the validity of data gathered. As this study sits in a relativist paradigm, the idea of data saturation as information redundancy does not connect with the concept of subjective and reflexive analysis, which "can never be complete" (Braun & Clarke, 2019c, p. 10). Instead, Malterud et al.'s (2016) alternative of 'information power', which focuses on the richness and relevance of the data, was employed. The ethical requirement of anonymity enabled honest answers from participants, improving the quality of the interview data gathered (Sieber, 2009). However, Malterud et al. (2016) warn the decision is not a simple one for the novice researcher in making the interpretive judgement of when Braun and Clarke's (2019c, p. 10) standard of "rich, complex, messy data" that will "burst with potential" is reached. Using verbatim transcripts and the addition of four further participants from smaller organisations gave rich data, satisfying me that I had achieved the required standard and reduced the potential to produce data that would support mistaken conclusions (Maxwell, 2009).

Unlike the positivist assumption of 'correct' codes existing in data which can be verified by inter-rater reliability scores (Mays & Pope, 1995), Braun and Clarke (2019a, p. 5) argue that "inter-rater reliability scores can be understood as showing that two researchers have been trained to code data in the same way, rather than that their coding is 'accurate'". Codes should instead be conceptualised as subjective and organically evolving throughout the coding process (Braun & Clarke, 2013). Therefore, I kept a research journal where I recorded interpretations, assumptions, and decisional reasoning throughout the study and used it to assist with review and reflection, including the inclusion, or not, of contradictory evidence (Braun & Clarke, 2013; Mays & Pope, 1995). Additionally, I used the 15-point checklist of criteria for good thematic analysis developed by Braun and Clarke (2006). The use of this checklist was to ensure I applied a robust and interpretive analytical process, and to verify the credibility of the findings, these were shared with participants (Braun & Clarke, 2013; Mays & Pope, 1995; Nowell et al., 2017).

Ethical Considerations

As the study involves human participants, approval was sought and granted (application number 29266) from the Victoria University of Wellington (VUW) Human Ethics

Committee (HEC). The study was conducted in a manner meeting the VUW Human Ethics Policy principles, including respect and care for persons, minimisation of harm and responsible research conduct, with all conflicts of interest declared. The approach aligned with Maxwell's (2009) recommendation to consider ethical issues in all aspects of the research. Participants were recruited following the VUW Human Ethics Guidelines and provided with an information sheet as detailed in Clause 11.3. Informed consent was required from both participants and their organisations and recorded via a written consent form either in-person or via email (Sieber, 2009).

Information obtained during the study was not highly sensitive but may potentially have personal or commercial implications. Therefore, information was treated as confidential, with data de-identified by removing company and individual names to ensure no participant or organisation is identifiable (Sieber, 2009). I collected all information in compliance with the New Zealand Privacy Act 2020, stored it securely, and minimised transportation. During the collection of data, there were no adverse incidents that required reporting to HEC.

Treaty of Waitangi Considerations, Obligations and Vision Mātauranga

Recognising the Treaty of Waitangi as an integral part of New Zealand's ethical framework, the research design incorporated the critical principles of partnership, participation, and protection. The importance of relationships as the foundation for equitable partnerships has driven an engagement approach that demonstrates respect and allows participants control over their involvement and extent of participation. By focussing on the experience and perceptions of contractors, a group traditionally not given a voice in prequalification research, I hoped to obtain a mutually beneficial result and encourage a more equitable approach to the prequalification process (Sieber, 2009).

Organisations and participants were asked to share any tikanga Māori (Māori protocols and practices) as part of the consent and information sharing process. However, no matter of Māori cultural bearing that would impact individual or collective rights, or mātauranga arose in participants' recruitment or data collection and analysis.

Findings

"It's a diverse and weird thing that prequalification."

The purpose of this study was to explore the perceptions of contractors who are required to prequalify and the behaviours they see as being driven by this requirement. This included prequalification's influence on contractor SMS implementation, such as data collection, documentation, work practices, and other general impacts on contractor safety. However, the semi-structured nature of the interviews led to participants sharing a far wider story.

Three broad categories of themes emerged in analysing the interview data, which will be discussed in this section. These categories were:

- perceptions and understanding of the prequalification process;
- perceptions of the people and relationships related to prequalification; and
- the impact of prequalification on participants and their businesses.

Category 1: The Process

This category of themes sets the context within which participants view the prequalification process and includes their perceptions of what they are being asked to do and its efficacy. As elaborated on below, the picture predominantly painted was of being required to participate in a generic and unfair process that was overly complex and did not facilitate learning or better safety outcomes onsite.

A One-Size-Fits-All Approach

"We have this almost, the one-size-fits-all, so cast the net wide, get it back, and you just know for a fact that a lot of the questions aren't even relevant."

The most cited perception of prequalification was of a generic process, a one-size-fits-all formula not tailored to individual company needs. All but one of the participants felt that the questions asked in prequalifications were not relevant to the work their business does or proportionate to the risks they manage and were instead "a blanket approach".

An example of the mismatch between generic prequalification approaches and the work participants complete included an organisation who undertake a high number of confined space entries below ground. In completing a prequalification, they were instructed they needed to have a work at heights procedure that included working on roofs, a type of

work they did not do. The participant explained this resulted in "some heated emails from providers telling us that we're not compliant … while we're trying to explain to them that that's technically not what we do". The sometimes disproportionate nature of prequalification was also a point of contention. A participant lamented the significantly longer time it took to complete the prequalification required to access the worksite (often done on an individual jobbing basis) than the actual work done – "we'll go into site and we can be there for an hour and a half and that's it, we're done. It'll take me longer than that to do the prequal". Not only did participants feel they were asked for things they did not need to have, but they also felt the generic approach missed important things, leaving them with a sense of "trying to shoehorn all the great stuff you do into a generic question".

The effect of the perceived "one-size-fits-all approach" was most often communicated as a sense of injustice, particularly in the way prequalification submissions are assessed. Regardless of their size, participants felt that they were being compared unfairly to other companies, especially larger or international organisations, with participants questioning "whether it's fair and consistent". The perception of unfair results often left participants dissatisfied and feeling a need to placate their clients, with one participant summarising their experience as:

"They'll just mark you zero if you don't have it, whether it fits with your scope of business or not, which I think is quite unfair because it gets you a lower score; therefore, to the client, it looks like you're not as good."

While the intent was not to find a better way to do prequalification, most participants expressed a desire for prequalifications to "be job specific" and "actually relevant to the company". Additionally, three participants from medium and large organisations expressed a desire to be allowed a voice in the submission process and how they are prequalified. One participant remarked, "that's probably the number one thing … if that was the only thing that changes, I'd be happy, right. So at least you've got a voice to explain what you submitted".

A Box Ticking Exercise

"You feel like you're just going through the motions of satisfying a box-ticking exercise."

There was a perception across nearly all participants that prequalification is performed perfunctorily, more to serve a bureaucratic requirement than to accomplish any

higher purpose. The term 'tick box' or similar was the most repeated phrase used by all but one of the participants and surfaced throughout each interview from beginning to end. The sense of inaneness was also evident in references to prequalification as a game to be played for commercial rather than safety purposes. One participant illustrated this when describing their experience as a H&S practitioner who must complete prequalification as "*this is the field that we chose to play on nowadays, and these are the rules that govern the game, so we just have to become good at doing that*".

Participants from medium companies tended to take this concept further, often talking about the prequalification process as an irritation or something that "wasted a lot of time for no benefit" beyond completing an imposed compliance requirement. Adding to this is a generalised sense of resignation that prequalification is an entrenched requirement, "a necessary evil" unlikely to change or go away.

The only participants who expressed that prequalification was good practice, often supplemented by it being a necessary compliance requirement, were those from medium and large organisations. For example, one participant stated "it's just good practice, right? Some of it of it is probably driven by a compliance aspect". Conversely, participants from smaller organisations were more inclined to express frustration that prequalification is not value-adding H&S work, seeing it is administration work only. One participant captured the sentiment by expressing "the thing is, it's not health and safety, it's administration, and that's the bit that is really frustrating".

Of Synonyms and Complexity

"It does feel a bit to us sometimes like we're just jumping through hoops to tick a compliance box."

Participants, mostly from large organisations, evoked images of circus animals performing complex tricks for an expectant audience as they spoke of their feeling that they were jumping through "prequalification hoops". The perception that prequalification is complicated, elaborate, and difficult was further heightened by a perceived lack of clarity in the questionnaires used to administer it. Many participants, particularly those from medium organisations, voiced challenges with interpreting questions and ambiguous evidence requirements. One participant described the issue as "you don't know what the intent of the question was, and you don't often have that ability to clarify or seek anything further".

Frequently mentioned was the plethora of different terms used for the same thing, which often resulted in a lot of backwards and forward communication to resolve when participants found "the wording they've got here doesn't marry with the system that I use". Participants relayed stories of submitting evidence only to have it rejected several times as incorrect and then offering more extensive portions of documentation only to have that rejected as too much information. This struggle was further compounded when the information being asked for was measured differently or not recorded, particularly with statistical calculations, such as incident rates. One participant commented on their frustration that their clients sometimes did not understand what they were asking for either, adding "that doesn't fill me with confidence".

A Scarcity of Learning

"You don't learn anything except trying to pass the exam so you can carry on with business."

Most participants, regardless of size, felt they received no feedback once a prequalification was completed, with one participant summing up the process of responding to prequalification questionnaires as "you email them off, it's kind of the last you ever hear of them". This lack of feedback was often viewed as a lost learning opportunity and further solidified the perceived superficial nature of prequalification. When asked if they had learned anything from undergoing a prequalification, the answer was often "patience", "tolerance", or "how to try and stay calm" when under stress. Participants also indicated that being required to undergo multiple prequalifications had improved their ability to answer the questionnaires. This repetition was essentially seen as honing their skill at completing prequalifications but had not added anything to their knowledge or understanding of safety. One participant even mentioned attending workshops focusing on how to complete prequalification questionnaires more successfully where "they give you a PowerPoint and they go through every single section".

Of those who expressed a more positive view of learning from the prequalification process, this was usually in the form of more generally appreciating the external perspective on their approach, with three participants suggesting it helped prompt regular review, which they saw as helpful. For example, a participant who came from a non-H&S background and was now working in a full-time H&S role noted the prequalification process had helped them become "more mindful" of what is in their management system,

prompting review and improvement. Another described the "positive shock" of finding out "there's other people out there that are doing better stuff" and the benefit of having a prequalification assessor connect them with another business who they were able to share learnings with. A unique perspective put forward by a participant from a medium organisation was that prequalification could have the "hidden benefit" of educating clients about their contractors' work. This idea was further expanded, suggesting clients had an opportunity to refine their prequalification approach by connecting the results with onsite performance, particularly on projects with a longer duration, and improve their "interrogation" technique.

Despite participants' predominately negative learning experiences, all but two expressed openness to receiving feedback and a willingness to learn from their clients. However, they tended to be sceptical that the prequalification process could achieve this effectively suggesting "the prequalification doesn't give us that opportunity to learn". One participant remarked, "take it out of a box-ticking exercise and actually come to my office and help me". Six participants spoke of the now-defunct Accident Compensation Corporation (ACC) Workplace Safety Management Practices (WSMP) scheme as something they had gained significant learning through in the past. All six expressed regret that this scheme was no longer offered, not because of the ACC levy discount, but because they felt the onsite auditing processes the scheme employed were beneficial learning opportunities. One participant noted the positive impact of their ACC Auditor's ability to affect change because "they actually came into our business and sat down and had a conversation with us" and "went out on site and to see what was happening". This process was seen as better than prequalification, which they viewed as having filled the gap left when ACC WSMP was scrapped in April 2017.

The Gap Between Work as Imagined and Work as Done

"Probably the part they miss is actually talking to the guys or the boots on the ground and actually, does the work imagined actually match the work being done."

The participants interviewed shared a perception that prequalification was not improving safety outcomes but tended to differ in their opinions on whether it was something that, in reality, could do so. Mirroring the difference in perception of prequalification as good practice and necessary, versus paperwork that adds no value,

participants from larger organisations tended to see it more like something that was not quite hitting the mark but with some changes "could be done better". Whereas participants from small organisations were inclined to express outright frustration and had a more pessimistic outlook on the inherent capability of prequalification to improve safety because "all the paper it's written on means nothing". It may be possible that because the split between larger and smaller organisations is similar to that between dedicated H&S roles and operational roles, this difference of opinion could be linked as much to the role as company size.

Also shared across the group was a perceived disconnection between the 'office' where prequalification's are done and the 'site' where the work is done, with a participant noting, "there's not a site where the prequal and the actual work environment would match". When asked if their clients inspected their onsite performance, most stated that there were few or no checks of their work onsite. If inspections were completed, clients did not correlate outcomes with prequalification results. Onsite inspections were considered mainly as something that would be welcomed, where "seeing with your own eyes and asking questions" would add value and result in the best opportunity to learn. This view did come tempered with some caution, as four participants noted that such inspections, when they do occur, can be time-consuming, delay the work being completed on time and undermine trust by creating a sense of being checked up on. One participant remarked about introducing client site checks of their work: "I'm already a little bit bored of our clients trying to tell us how to do our jobs".

Participants also communicated stories of encountering other "cowboy" contractors on shared worksites who they identified as not behaving safely, although they had likely been required to carry out the same prerequisite prequalification process. These encounters were considered to "undermine the whole system" and seen as further evidence of the gap between the perceived administrative work of prequalification and work as done onsite. Half of those interviewed attributed the potential for contractors to give misleading or deceitful answers in response to prequalification questions as a reason for this gap. When asked if they were required to provide evidence to support their answers, there was a mixed response, with equal numbers saying this was often the case or that it was rare. Even when asked for evidence, many felt this was something less scrupulous contractors could easily manufacture or fake, sharing the opinion that "I like to think I'm, you know, reasonably

honest and truthful in responding to that, but I suspect that a lot of others perhaps aren't". One participant summed up the implications by observing that "there could be trust where trust probably shouldn't be".

Adding to participants concerns about the efficacy of prequalification as a safety improvement tool and the level of trust their clients appear to have in the process was its backwards focus, with a perception clients placed an over-weighted emphasis on incident statistics. Participants often saw this as being "always very focused on the negative" with clients not taking the time to look at initiatives that had led to improvement or reflected the positive culture of their organisation. Two participants from larger organisations were the only ones to indicate they had observed some shift towards the use of proactive indicators in prequalification, such as the inclusion of wellbeing activities.

The One That Did Not Fit

A participant from a large organisation made a point relating to the process of prequalification that did not sit well within the above themes. It stood out as unique and is worth capturing. They expressed a concern that regulatory attention has caused prequalification to become focussed almost exclusively on H&S risk, describing the questionnaires as having a "reasonably narrow margin". The participant's view was that H&S was only one of the risks that should be considered when selecting contractors. They expressed concern with lists of prequalified contractors where "people pick off the list and they think they've done everything they need to do". The need to meet the NZ Government Procurement Rules around broader outcomes which requires consideration of social, economic, cultural, and environmental outcomes, was given as an example of other risks to be considered.

Category 2: The People

This category of themes conveys participants understanding of themselves, their clients and the third-party prequalification companies involved in the process. Participants were proud of their people and work, but there was a prevailing sense of being misunderstood. Mistrust of client and third-party prequalification companies' motivations for requiring prequalification has led to barriers being created. As a result, there is

misunderstanding and disconnection despite an expressed desire to engage in a meaningful way.

A Lack of Understanding

"It's almost quite perverse, isn't it? Where you're actually asking your subbie to do a specialised piece of work because you're not good enough at it yourself, but then you're critiquing it. And then assessing whether they are good enough or not, to give them the green light to do it."

The participants interviewed all spoke in-depth about their people and the diverse yet specialised work they do, expressing pride in the projects they had worked on successfully and sense they "genuinely care about each other". They felt they had an intimate understanding of their work and the risks involved in doing it, with the sentiment expressed as "we've got some major risks, but we know them, so we, you know, we know how to manage them". However, they were less confident in their clients' and third-party prequalification companies' ability to share this understanding, paraphrasing the behaviour as "we don't quite understand what you do but actually we'll put our little lens on it".

Discussion of a perceived lack of understanding of their work often gave rise to examples where they felt clients had pressured them to adopt their approach to risk management, although this did not fit the work the company undertook. For example, one participant described the immense effort of having to gain approval to use safety glasses that differed from those specified by their client because "it had to go all the way up the chain". Their work carried a risk of extreme ultraviolet light exposure, and so they used shaded glasses, but the client required clear glasses when working on their site. Another example given related to what a participant perceived as a third-party prequalifier not understanding the small size of their organisation. The prequalifier insisted they have a H&S committee with "everything written down", which the participant rightly pointed out they were not legally required to do, preferring instead to manage engagement and communication less formally.

The rigidity of client and third-party prequalifiers' approaches left two participants feeling their clients had no interest in understanding their work. One participant commented that I had learned more about what they do "in the first two seconds of talking" than their clients had in the many years they had worked together. The converse of this was

demonstrated by a participant who described their frustration at a client's H&S Manager who would deliberately feign ignorance or "play dumb" to elicit information. This behaviour was seen as disrespectful and wasting valuable time.

A result of this perceived lack of understanding was scepticism of clients' and third-party prequalifiers' abilities to assess or understand the information submitted during prequalification. One participant spoke about their curiosity of what their clients might make of the "esoteric evidence" they often provided in response to prequalification questionnaires. Many questioned whether the assessors, client or third-party, had the competence to recognise what good practice looked like for their sub-industry. Participants often described assessors as "book smart", not "industry smart". Many participants commented on the frustration of having to spend time explaining what they felt was clear documentation to their assessors, essentially needing to "train the auditor to read our documents". The effect of this was eleven of the participants interviewed feeling considerable scepticism about the fairness of their assessment and the worth of any feedback they might receive from it.

A Loss of Trust

"Everybody's running scared, from a legal point of view."

Participants had deep misgivings about their clients' motivations for requiring them to undergo prequalification. Although some indicated they thought clients might use prequalification to select competent contractors, the most predominant perception was that clients' primary motivation was to protect themselves from legal liability in the event of an incident and to pass the blame on to their contractor. Prequalification was thought to be "self-protection" used to "hide behind", leaving participants feeling they were "always in the kicking line". Despite these misgivings, participants often expressed empathy for their client's situation, assuming their resources to be as equally constrained as their own.

Trust in what clients used prequalification results for was also consistently lacking. Half those interviewed expressed cynicism about how much weight prequalification results had when it came to awarding jobs. Many participants relayed stories of losing work to cheaper competitors they saw as less competent, making them feel prequalification is "more box ticking and someone's probably going to get the job for other reasons that are beyond the assessment of that prequal". There was also a perception prequalification was

frequently an afterthought and applied after a client had already decided to engage a particular contractor. Participants often ascribed this phenomenon to a gap between client businesses' operations and H&S functions, where prequalification was relegated to a token "tick in the box for the health and safety side of the business". The mistrust this engendered was further compounded by a perceived lack of transparency in how participants felt they were assessed. Prequalification was described as a "black hole", and participants expressed a desire to understand better the weightings and scoring systems used.

Participants from small and medium organisations expressed an additional concern relating to sharing private information about their staff and subcontractors. They felt uncomfortable giving names and confidential health information or the results of inspections and investigations and were concerned about the implications of recent changes to the New Zealand Privacy Act (2020), not wanting to "get done for a breach of it". Participants appeared to believe they were required to demonstrate a level of blind trust, with clients offering no assurance about the management of this confidential information for which participants felt responsible and liable.

The Value in a Personal Relationship

"It just makes communication easier, and if the communications easier, it makes collaboration easier, it makes any sort of joint effort easier."

Half of the participants from large and medium-sized companies and all those from small companies indicated a preference for having direct and personal relationships with their clients, particularly at the site level. As one participant explained, this was where they "sort out how you're actually going to do things". Those that had experienced feedback that had led them to believe their clients had directly and thoroughly reviewed the prequalification information they had submitted felt this demonstrated a desirable level of care and interest. There appeared to be a high level of value placed on being able to "look in someone's eyes and say, yeah, I trust that you've got this".

This view was particularly notable in an expressed aversion to online or email-based prequalifications, which participants perceived as impersonal and negatively impacting relationships. Instead, the human element and shared sense of "skin in the game" were seen as building trust, with participants explaining how this helped remove some of the more onerous nature of prequalification. Five participants further expanded on this by

explaining that a more personal and engaging relationship where clients demonstrated a "willingness to take an actual look at what we do" was more likely to allow for customising the prequalification to reflect the risks of their work better. They explained "getting that relationship up is really important" because then "we're working together as a team", facilitating shared learning, and giving a sense of return on investment. For example, a participant involved in a complex rail project spoke of how they had been able to identify hazards their client had been unaware of, becoming notably animated as they recalled the thanks they had received. Another commented that they treat their clients like friends, always doing their best to meet clients' requirements.

Additionally, a participant described how having robust relationships at a site level made them feel like they had an advocate who would "fight for me and try and swing it" when pushing back on some of the prequalification requirements they saw as not relevant to their business. Other benefits given across the participants included an increased likelihood of repeat business, a sense that it was not a one-sided process and better mitigation of site risks. However, a participant from one of the larger companies uniquely articulated their view, explaining that prequalification did not add value to their client relationships. The participant felt such relationships existed independently of the requirement to prequalify, which only formalised this and provided verifiable evidence to the Regulator.

The Wall of Prequalification and the Not-So-Secret Way Through
"We've actively walked away from clients because their cost of compliance is not worth the value of the work."

All participants interviewed spoke of how prequalification had been a barrier to their ability to get work. Both cost and time were cited as factors in their decisions not to engage in work that had a prequalification prerequisite. Often amplifying this perception were experiences with no guarantee of employment even if participants met the prequalification requirement, essentially seeing contracts "dangled like carrots". A sense that the level of achievement required may be too challenging was also cited, with pass rates as high as 75% quoted.

Some participants perceived the requirement to prequalify as taking them away from value-adding site-based activity, including "training the people on the tools … rather

than in the office ticking boxes". Others objected to the pressure they felt was exerted on them through prequalification to change their documentation or management of risk. For example, one participant explained their experience of being required by a client to change their Job Safety Analyses (JSA) to their format. The participant perceived this change as wasting time and violating the consultation process they had engaged in with their staff while developing their JSAs so they "actually said no", choosing to "pull out of the job".

Participants' experiences of clients requiring differing third-party prequalifications further added to the perception of prequalification as a barrier. One participant discussed a client who had been unable to engage them because their payment system could not pay them if they did not hold the endorsed third-party prequalification meaning "it became too hard basket". Another had lost a contract held for 11 years when the client implemented a new requirement to have a third-party prequalification not held by the participant's organisation. There were some instances where participants had asked their clients to cover the cost of third-party prequalification. Though none had been successful in securing payment, some had experienced the prequalification requirement being "wiped".

Besides vocal opposition to the cost of prequalification causing its removal, five participants spoke of instances where the need to prequalify was circumnavigated by subcontracting. All five had directly experienced situations where their lack of the specified prequalification requirement had been removed by subcontracting to another organisation that did hold it. In a similar example, a participant found the barrier was removed by the client deciding "we'll just employ you through this subsidiary of ours". Participants perceived this practice as reasonably common, particularly at a provincial level where the pool of contractors was more limited. One participant, however, experienced the anthesis of this and was required to undertake a third-party prequalification because the client of the company they were contracting to required it, "it was in their rules", even though as the "third tier down by the time we actually do [their] work" they had no direct relationship.

A Blockade of Third-party Prequalification Companies
"There's a lot of players out there making money, a lot of money."

The motives of third party prequalifiers were also heavily questioned by nine of the participants. Beyond the overt cynicism of the profit such organisations were making while being perceived to add little value back to the industry, two participants expressed concerns

at an apparent conflict of interest. They felt it inappropriate that many third-party prequalification companies also sold other safety services or products, including training and safety management systems, with one participant asking: "where do you get your bright ideas from?".

One of the most significant objections raised to third-party prequalification schemes, outside of cost, was their tendency to become a barrier between participants and their clients. There was a sense that clients were "disengaged" from their contractor's management of risk because it had been handed it over to a third-party prequalification company to monitor. This situation left participants with the impression that clients were effectively "contracting out" of their H&S responsibilities. One participant expressed frustration at the perceived transference of accountability, stating they felt it would be unlikely in the event of a severe incident for the prequalification companies to be found standing beside them in court testifying they had assessed their system as safe. In addition, participants felt much of the communication went through the prequalification companies, adding to the sense of disconnection. One participant from a small organisation described being contacted directly by a third-party prequalifier without any prior communication from their client. The prequalification company informed the participant that they were required to undertake a prequalification with them, or they would no longer be able to work for their client. Participants saw this communication approach as a "strong-arm tactic" on the part of prequalification companies.

Category 3: The Impact

This category of themes centred on how participants perceived the impact of prequalification on their business, SMS and on them personally. Prequalification appears to bring extra loading on participants' resources, which their clients seem unaware of, and a sometimes-insurmountable level of pressure to change their SMSs. The result of this is participants left feeling unheard, dictated to, and stressed to the point of having a substantially negative impact on their wellbeing.

A Heavy Burden to Bear
"It's probably the single biggest cost impact to our business that's out of our control in the last five to six years."

All participants spoke of the financial and time burden of prequalification, which appeared most significant for smaller organisations. A participant from a small organisation described the feeling of "paying to get contracts" as "probably the biggest thing that irks me about prequal". Two participants from larger organisations, however, had invested in a dedicated role to complete prequalification submissions. Participants often noted the direct cost of prequalification through third-party companies as being disproportionately high. In addition, there was frustration that the price was often based on total employee numbers, where participants organisation may only have a small number of employees working for, and therefore generating income from, the associated client.

When asked if the cost of prequalification was recovered directly as part of their contracts, most felt it was not possible to do so, leaving participants with a sense that "the whole prequalification scene's just an imposed burden". The only participant who tracked their prequalification costs stated they were in the "100 to 110 [thousand NZD] bracket" over the last five years. One participant had spent NZD1,600 on a third-party prequalification only to find none of the clients that had requested this offered them any work. Another had a similar experience where they had outlaid considerable costs only to find their client changed their endorsed third party prequalifier, and the prequalification company would not refund their fees, stating "no, that's not part of our policy".

The amount of time spent gathering and collating evidence also caused frustration, with participants describing the "time pressure thing" as being "part of the stress". For instance, one participant said they were working on at least one prequalification a week, and another spoke of questionnaires that "can take me days to do, because there's just so much information that needs to go in there". Many participants commented that prequalification was not always done periodically, instead being required on a job-by-job basis. The situation appeared to be further inflamed by a perception every prequalification needed a differing set of data because "everybody's exam's different". Participants also perceived a shift to clients requiring contractors to hold third-party prequalifications then requiring an additional in-house prequalification to be completed. For example, a participant spoke of a recent arduous experience where they had completed the required third-party prequalification only to find the client "wanted 15 more pages of junk filled out".

Increasing their frustration was a sense that their clients seemed unaware of the cost burden of prequalification. When asked what they though their client's perception of

this cost was, one participant replied, "I don't know if they even know about it, or if they think about it". Participants felt expected to "grunt and get on with it and just see it as another damn cost of business", albeit one that "added no real value". A participant from a small organisation spoke of their concern that the increasing cost of prequalification might have a ripple effect, driving up the cost of projects for clients and other stakeholders including taxpayers.

Linked closely with concern at the time and cost burden prequalification represented was a sense of unnecessary duplication of effort with 11 participants overtly expressing their frustration. Some participants maintained between 11 and 15 different prequalifications, usually a combination of third-party and client-facilitated, leaving a perception of prequalification as being "an enormously expensive, resource sapping, duplication process". All but one participant expressed a desire for a more standardised approach to minimise such duplication, often suggesting an alignment to an external standard such as the AS/NZS ISO 45001:2018 occupational H&S management standard or WorkSafe guidance. To illustrate this point, one participant described their experience with the ISO 9001:2015 standard for quality management systems. They found this quality standard was universally accepted without further evidence of a quality management system being required, commenting "we've never had five different quality exams". They felt a similar approach in safety would be logical because "until the industry realizes we have to have a single measurable standard, and that we can achieve that by any route, we'll be stuck in this really difficult place for a very long time".

For smaller organisations, an outcome of the high cost of prequalification was a perception that it resulted in resources being taken away from other safety activities in the business, effectively chewing up resources for liability coverage. In a material example of this, a participant expressed regret that the rising cost of their prequalification requirements had prevented the business from pursuing an external auditing programme they had been planning to undertake, remarking it was now financially "out of their reach". Another was concerned with the amount of time it took people away from operational roles where they were responsible for crucial competency training. One participant questioned "how much money is being chewed up basically covering one's backside?"

Two participants from larger organisations were the only ones to describe a positive benefit to the investment they made in prequalification. One noted "we have used low

prequal scores on some things to help us get resources to improve in some areas". The other felt it helped drive activity within their organisation that supported internal and external auditing and monitoring activities and kept them on a "continuous improvement path".

An Unwilling Change to Risk Management Practices

"So, I didn't quite have the cojones basically, to push back and go well actually no, I'm not changing my management system."

Many participants felt they had a deep understanding of their risks and a robust SMS in place; however, all participants, regardless of size, felt pressured to make changes because of the perceived need to 'pass' prequalification assessments. Half of the participants from medium and large organisations interviewed indicated they had been required to manipulate or change something in their SMS. However, the impact on participants from small organisations was the most significant, with them all indicating they had made changes to their SMS because of prequalification assessment requirements.

The influence of prequalification SMS changes ranged from the need to copy and paste their information into a clients' templates, the manipulation of recorded statistics (one participant described a "heated disagreement" about how their injury statistics were classified), to the creation of new policies and procedures. A typical example of this was the need to create modern slavery or bribery and corruption policies. However, as their organisation only worked within the NZ regulatory environment, participants felt this type of policy was not a relevant requirement. The level of pressure exerted on one participant to introduce such a policy left them feeling bullied into taking on a level of liability they did not fully understand. Participants perceived some of the changes they had been required to make as substantial and having a "flow-on effect throughout the system and the forms and documents that we use".

Participants from smaller organisations also felt pressure to document risk management practices they had historically managed verbally. Examples ranged from writing meeting minutes to one participant who explained that site inspections tended to be communicated verbally due to the short duration of their work. However, they were looking to start documenting this process in response to increasing pressure from prequalification requirements.

Third-party prequalification companies in particular were perceived to exert substantive pressure on participants to change their SMS to suit their assessment requirements, instructing them "your manual specifically has to say this". Participants often described the approach of their assessors as inflexible and prescriptive. An example was given by a participant who drills holes as part of their work which caused their organisation to be classified as undertaking work that required policies relating to diggers and excavations, which they explained was work "we never do". When asked if they ever pushed back on this pressure, the response was that it was more often "cheaper and faster" to write a policy for something they do not do than seek any sort of exemption or reclassification. The idea that it was more efficient to capitulate than challenge, whether they agreed with the requirement or not, was a sentiment shared by several participants. Another participant questioned the value of prequalification driving organisations to develop documented SMS noting that "if systems could fix everything" then anyone with a certified system "shouldn't get fatalities, but unfortunately that's not the case".

Some participants voiced a reluctance or refusal to change their SMS in response to the prequalification requirements, stating "I wasn't going to re-write our systems to tick their boxes", although most gave examples of how they had. The data did not demonstrate a well-defined threshold, but there seemed for some to be a limit to the level of change they were willing to make. Once it was perceived to go beyond the point of being a "tweak" or a token addition, they became uncomfortable or unwilling to "just jimmying up that sort of policy".

Participants also felt they had to spend significant time and effort in conversations with third-party assessors explaining why their approach differed from the typical. One participant explained, "we're not writing our JSAs for a prequalification company to understand, I'm writing my JSA for trained, skilled staff". The additional pressure unique to third-party prequalifiers is related to their general use of numerical scoring systems. As with the previous theme relating to being assessed fairly, participants from smaller companies saw the potential to be given a zero score as a significant motivator to introduce policies in which they saw no value. In response to one third-party prequalification, a participant acknowledged "thirteen extra things we wrote that've got nothing to do with our business whatsoever". Only participants from medium and large companies felt they could take poor scores "on the chin" without any impact on their pipeline of work.

Another consideration for participants seemed to be the impact of potential SMS improvements they were considering implementing on their ability to pass prequalification assessments. For example, a participant from a small organisation spoke of changing their toolbox meetings to a digital format but being concerned they may not meet the assessment criteria of prequalifications they were required to undergo, explaining "I didn't want us to be penalised". This concern resulted in them feeling the need to ask the administrators of these prequalifications, who proved "a little hesitant", before introducing the change. In a second example, a participant from a large organisation created a list identifying where their current SMS had not met the requirements of prequalifications they had completed. The participant used this list as they developed their new SMS to ensure any "gaps" in their ability to evidence prequalification assessments were filled.

Beyond impacts to their documentation, participants indicated they felt this pressure could adversely affect their employees. For example, a different approach to managing the risk associated with alcohol and other drugs resulted in one participant being required to lose employees they would have otherwise supported through a rehabilitation process. This situation was because their policy allowed for rehabilitation support and a return-to-work plan whereas their client had a "blanket no" policy. The experience appeared to cause deep concern for the workers they felt had been affected unfairly, with the participant worrying "what do I do for the workers, you know?". The situation also left the participant worried about the potential impact on their ability to recruit and retain employees in a constrained labour market where "you don't want to lose any workers". Another participant described having "seven different companies" requiring them to follow "seven different procedures", which left them worried about their employee's ability to recognise when to apply which approach, a situation they felt was "not a good outcome for the staff".

Dictated To and Degraded

"Just yet another contractor grumbling about prequalification."

It was a problematic theme to untangle, but I could not disregard the sense that the participants interviewed frequently felt like they were being dictated to when undertaking prequalification assessments. This feeling was often tied closely with the idea that prequalification questionnaires were one-size-fits-all or the pressure to change their SMS. There was an apparent sense that they had no control over something that had a significant

impact on them. Participants conveyed this impression in the stories they told where they tended to paraphrase their client or third-party prequalifiers as saying "I want", "you must", "you need to" and "no, this is the requirement" or "they demanded".

It came through also in their perception of the process, especially when managed online or via email with no communication or consultation, which a participant described as "a dictatorial process that arrives in your inbox". A frequent example related to the discomfort described earlier in sharing confidential information. Participants felt forced to trust this would be treated confidentially without any perceived guarantee, commenting "they expect you to do it, what they want".

The frustration that their voices were not being heard was also notable and complex. It showed through stories of arguing fruitlessly with prequalification assessors and clients, having to relent and make changes to their SMS that they deemed unnecessary, or accept what they saw as an unfair assessment of their competency. One participant described being made to feel like a whiner whenever they raised objections or questioned their clients on their approach to prequalification. Conversely, a participant spoke of the positive effect of not feeling dictated to when one of their clients returned with some suggested improvements commenting, "it was really nice because they said you might want to, not you must".

At times there also seemed to be a sense that the dictatorial approach was transforming into something even more offensive where participants felt or spoken down to or degraded. For example, a participant from a small organisation spoke of how they believed a prequalification Assessor was deliberately trying to make them feel stupid by using acronyms and overly complicated language. Another described their outrage at having the SMS that they invested their time into developing graded with what they perceived to be an unfair and "mediocre" score. When they pushed back on this, the participant felt reprimanded for not having the right attitude. The nature of the conversation seemed patronising as the participant recalled the client saying: "that's not the way … you're in a partnership with us, so, you know, we value your feedback", to which the participant responded "I've given you my feedback. I've been doing these meetings for two years" and yet nothing had changed.

Under Pressure

"Prequals are driving health and wellbeing into a dark, dark place."

Many participants spoke of the stress they felt because of the direct and indirect costs associated with prequalification, one adding the impact of the COVID-19 pandemic had further intensified this. However, one of the largest sources of anxiety and stress seemed to be a very salient fear that if they did not complete the prequalification requirements successfully, they would lose work. For participants from smaller organisations, this led to concern they would potentially be unable to pay their employees.

There were many stories where participants perceived the need to prequalify as an ultimatum, with their understanding being: "you must have it, otherwise you can't get work with us". One participant described the result of this as "really stressful" and another as making them feel that "if we get something wrong, either everybody gets paid, or they don't". This pressure appeared to increase further for participants from smaller organisations when an expected level of achievement was required – an example given was a final score condition of 75%. This type of requirement became additional financial pressure for one participant as they missed the necessary result by a small amount and had to repay and resit the third-party prequalification involved. They were further irritated by the feeling the assessor they had been dealing with had been less than helpful because "he wasn't that forthcoming with what he actually wanted".

There also seemed to be significant stress associated with the amount of work in assembling the documentation required to complete prequalification questionnaires, particularly in finding completed field documents. Even participants from larger organisations admitted they struggled to find examples that were "completed 100% correctly", with one noting "the biggest problem is evidencing it". This issue was compounded by the stress of interpreting the questions or evidence requirements, with a participant citing a mixture of "stress, anxiety, and confusion". Regardless of company size, many participants added to this an apprehension from feeling they were gambling because even if they met the prequalification requirement successfully, they still might not receive any work. A participant labelled this a "get on our books and then we'll look at it" approach.

Apparent across participants from all sizes of businesses was the stress caused by the perception their results were "not fair". Stress also seemed to be generated by the perceived futility of challenging these outcomes, which some described as confrontational

and even heated, depicting images of a wrestling match where "every time I push them back and every time, they push me back".

As participants gave examples of stressful situations, third-party prequalifiers featured frequently, and one participant described them as "aggressive" and their behaviour "inappropriate". However, some of the stress participants experienced was generated from internal sources. Participants described being placed under pressure by people in other roles within their organisation to achieve the prequalification results required to gain work or achieve higher results than their competitors. One participant described a manager pressuring them to concede to a prequalification requirement and change their SMS, instructing them to "just give them what they need" even though the participant was sceptical the change was the right thing to do. Another was told "they've scored 100% on this and we've only got 94%, fix it".

The accumulation of pressure appeared to have left many participants feeling like they were carrying the reputation of the business on their shoulders. They described the pressure of needing to keep the business running with prequalifications and keep clients happy, noting that any failure was likely to be perceived as "always our fault".

Discussion

"As a health and safety person, I genuinely believe prequal is important and is a valuable part of the process. As someone who has to jump through the hoops, I'm just not sure we're hitting the target we think we're hitting."

With claims that "the best protection against a bad selection decision is a good selection procedure!" (Holt, 1998, p. 161), it is little wonder that prequalification has become increasingly recommended as a means of reducing work-related accidents (Russell et al., 1992; Wilbanks, 2019). Unfortunately, research relating to prequalification has focused on clients' views and given little attention to those of contractors. This lack of consideration is despite contractors being significant stakeholders both in the prequalification process and the execution of projects (Baroudi & Metcalfe, 2011; Mills, 2005).

The objective of this study was to explore contractors' views and behaviours they see as driven by the requirement to prequalify, including impacts on data collection, documentation, work practices and general safety. The story shared by participants was one of participating in a bureaucratic process that added little value or opportunity for learning, with one participant explaining, "we've certainly learnt nothing out of doing a prequal". The findings also indicate the commercial implication of prequalification is influencing reluctant surrender. Even those uncomfortable in doing so changed their SMS and onsite safety practices in response to prequalification requirements. Additionally, it appears the impact of prequalification might extend beyond systems and safety practices to complicating already complex communication interfaces and eroding trust between participants and their clients. Participants felt prequalification was consuming scarce resources and negatively impacting the wellbeing of the people responsible within the business for gaining prequalification.

Impacts on Safety Management Systems

"That largely comes from a confidence or self-belief in that what we've got is adequate and good. I don't want to change it because of a prequal system that I don't put a lot of value on."

The participants interviewed spoke with pride about their people and their work, expressing a desire to ensure their clients' success. In addition, participants voiced

confidence in their understanding of risk and implementation of an effective SMS. It was not odd then to find that most participants indicated they were reluctant to change their SMS to meet prequalification requirements. What was odd was that most did, particularly those from smaller organisations.

The Right Data

"It's looking back, and it's pulling data, and it's massaging it to answer a question."

Mearns and Ivar Håvold (2003) characterise H&S issues as dynamic and challenging to measure, and using accident data to predict future performance as particularly troublesome. Despite this, prequalification research indicates injury history is the most typical criterion clients use in assessing contractor capability (Choe et al., 2020; Liu et al., 2019; Wilbanks, 2019). Even using proactive indicators is contentious with selecting indicators that impact performance seen as complex and subjective (Liu et al., 2019; Mearns & Ivar Håvold, 2003; Peñaloza et al., 2020).

In the findings, there were weak indicators of prequalification requirements influencing the collection of data. For example, a participant described incident trends being graphed for inclusion in prequalification responses but not often used internally for monitoring safety performance. At the time of the interviews, I was inclined to think that the collection of incident statistics was so enshrined in safety management practices that questioning the influence of prequalification on this would not yield any useful insights. However, on reflection and review of the interview transcripts, it may have been a missed opportunity to further explore the collection of data and ask participants if they would collect this information if it were not required as part of the prequalification process.

What was apparent, however, was that participants perceived prequalification questionnaires to place an overweighted focus on injury statistics, one noting "there's never the other side of it, where they, I guess, take the time to look at initiatives, developments your improvements". Participants indicated they were often required to manipulate their data to meet the varying prequalification requirements of their clients. This process was reported to take significant time and sometimes resulted in subjective judgments about the inclusion and classification of injuries. Echoing Mearns and Ivar Håvold (2003) scepticism of historical accident statistics as effective predictors of future performance, there was a sense

that this left participants feeling they spent more time recording and manipulating this information than they thought was beneficial.

The Right Controls

"I can tell you how to dig a hole like a ninja. I'm no way gonna tell you how to build a house."

A critical factor in why contractors tend to experience poor H&S outcomes is the high-risk nature of outsourced work (CHASNZ, 2019; Manu et al., 2013; Underhill & Quinlan, 2011). In a parallel of the view of Gunduz and Khader (2020) that the construction industry is fast-paced and intense, participants described their work as complex and specialised.

As governed by the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, the high risk of contractors' work requires control measures that effectively eliminate or minimise that risk. The participants gave examples of perceived client over-reach where prequalification requirements and work conditions had driven changes to their chosen controls. These changes ranged from manipulating task-based instructions for their employees to using unsuitable personal protection equipment and dismissing staff who could have been supported through a drug and alcohol rehabilitation programme.

The danger may lie in the debate about whether clients genuinely understand their contractors work well enough to make such impositions. The participants seemed conscious of their limitations and where their skills did and did not lie, though they seemed less convinced that their clients were aware of their own weaknesses. The application of prequalification questionnaires seen by participants as ill-fitting and impersonal, and interactions with assessors perceived as incompetent appeared to drive a view that clients do not understand their work, or worse, do not want to. Participants perceived the prescription of control measures without understanding their work as having an excessively negative impact on their employees. In the examples given of having to remember differing controls for different sites or using unfamiliar documentation and equipment that did not mitigate the risks involved in their work, participants felt this increased the risk to their employees. Valluru et al.'s (2020) finding that working with such variability leaves subcontractors vulnerable to risk would suggest this concern is well founded.

Lingard et al. (2020) concluded that the tension created by imposing H&S controls on contractors was alleviated by building a personal relationship with the client at a local level. This approach gave clients more effective influence over contractors' H&S practices (Lingard et al., 2020). The participants also placed significant value on the personal relationships held at a local level, seeing them as the best opportunity for learning. However, suppose the participants' perception of their clients limited understanding of their work proves correct. In that case, it may be that Lingard et al.'s (2020) assertions of client influence would be best tempered by seeing risk as a two-way street and taking one participant's advice of instead targeting client education (Nunes, 2012; Wilbanks, 2018). By fostering such site-based relationships, clients may be able to better balance the due diligence requirement of ensuring risk is well managed and the liability exposure from imposing unsuitable controls.

The Right Documents

"It was actually cheaper and faster for us to write a policy for something we don't do, to pass the exam."

There has traditionally been a perception that documented SMSs drive better H&S outcomes (Fernández-Muñiz et al., 2009), and the participants interviewed all noted prequalification's focus on written policies and procedures. Wilbanks (2018), however, warned that prequalification might be imposing the requirement for a documented SMS without any significant legal basis or practical benefit.

Participants felt that prequalification required them to document safety activities they managed effectively without documentation, including meetings and inspections. While there is an agreement in the literature that some documentation reflecting work practices can be beneficial, there is also a growing consensus that time spent on compliance paperwork is time taken away from monitoring actual risk (Blewett & O'keeffe, 2011; Guo et al., 2015; Rae & Provan, 2019). Participants appeared to concur with this view, with those from small organisations especially inclined to see prequalification as imposing administrative paperwork that was "not going to keep you safe" and detracted from safety activities.

In one of the few studies that solicited contractors views, Baroudi and Metcalfe (2011) found that prequalification systems were seen as being rigid and requiring conformity to their requirements without reservation. Their research aligned with the

findings of this study which indicated participants felt prequalification processes forced them into creating policies and procedures for work they did not do or risks they did not manage. Participants often saw it as more straightforward and cost-effective to capitulate and add procedures they did not think were necessary or value-adding than push-back on the requirement. This approach was the same when it came to making changes to existing documentation, with one participant remarking, "I'll just make the changes … whether I agree with it or not".

It is possible that influencing contractors to make changes or additions to their SMS is seen by clients as assisting contractors in learning and improving, a commonly cited reason for requiring contractors to prequalify (Awad & Fayek, 2012; Baroudi & Metcalfe, 2011; Inouye, 2015). The idea of imposed regulation as a means of advancing improvement seems inextricably intertwined with how we approach improvements in H&S (PRRC, 2012; Walters & James, 2011). Clients may see prequalification in the same light – as an external pressure to drive otherwise unlikely improvement (Inouye, 2015; Rashvand et al., 2015).

In contrast, participants' responses seemed to discredit learning as an outcome, with most stating they had "learnt nothing" from completing prequalifications other than how to "pass the exam". The two participants who considered the impact of planned improvements on their ability to meet prequalification requirements would also put in doubt its value as an improvement driver. These participants appeared to view prequalification more as a hurdle than an aid to innovation. Thus, at best prequalification seems to be seen by participants as a reminder for periodic review and, at worst, as stifling innovation. Baroudi and Metcalfe's (2011) study had similar findings, indicating that prequalification was perceived to stifle ideas being put forward and shackle creativity.

Salguero-Caparrós et al. (2020) also found that while the evolution of legislation can improve H&S, it can be too complicated for small organisations to understand. This idea may be valid for prequalification also, as participants stated they found the questions and requirements challenging to understand. However, a point of difference is that this was not confined to participants from small organisations, with participants from medium-sized organisations also appearing to struggle.

The stories of participants producing new policies and procedures to comply with client requirements indicate that prequalification may be going beyond being an unvalued paperwork activity in itself. Prequalification might, in effect, be causing a proliferation of

pointless paperwork or "safety clutter" that Rae et al. (2018) warn does not contribute to the safety of work, resulting in cynicism and impeding innovation. The participants' views, especially those from small organisations, align with this theory. This study did not explore the flow-on effect these prequalification-driven changes to participants' SMS may have on their workers. A future opportunity to investigate how these changes are communicated and the level to which they impact workers understanding of the organisations' SMS may yield a useful perspective in further understanding the impacts of prequalification and the clutter it may be promoting.

Beyond the impact of safety clutter, one contactor raised an interesting point about the potential risk of client over-reach, remarking, "they also, you know, try and get you to change your management system to suit what they want, which is quite dangerous and puts the risk back on them, really." It may prove opportune to seek clarification of the possible legal consequence before imposing changes to contractors' SMS.

Impacts on General Safety

"I don't believe that prequalification is achieving what the clients expect it to be achieving."

Beyond impacting safety practices and documentation, prequalification appears to be distancing participants from their clients, creating communication barriers and mistrust. Prequalification may also decant resources from activities that are more likely to improve safety outcomes while potentially undermining already unstable work pipelines and negatively impacting participants' wellbeing.

Communication Breakdown

"Most of our clients are now disengaged from the safety system and us because we've handed it over to X organisation to monitor."

Rather than being a means to enable positive H&S outcomes through communication, prequalification may instead be creating additional complexity, barriers and an environment of fractious and potentially dishonest communication.

There is considerable research on the complexity of communication in contracting chains, particularly in the construction industry, and the negative impact on contractor safety (Choe et al., 2020; Gao et al., 2018; Lingard & Oswald, 2020). There is also a view that prequalification acts as a conduit for communication, building and strengthening client-

contractor relationships (Baroudi & Metcalfe, 2011; Inouye, 2015). However, the participants' perceptions appear to contradict the views of Baroudi and Metcalfe (2011) and Inouye (2015). Participants saw third-party prequalification companies as a barrier between them and their clients, and email or online processes were considered dehumanising. Also, the behaviour of subcontracting to avoid onerous prequalification requirements added a further distance from their clients, increasing the likelihood important information will not reach them (Valluru et al., 2020). The amount of communication occurring in a process seen as being "in most cases it's boxes ticked, and it's put into a drawer" is also questionable.

Prequalification also seemed to add an occasion for communication that participants did not perceive as positive. Valluru et al.'s (2020) uncertainty of clients' and principal contractors' competence in verifying the suitability of subcontractor SMSs was shared by participants with most considering assessors to not have the required expertise. Clients in Baroudi and Metcalfe's (2011, p. 65) study confessed scores were awarded on "gut feelings", which aligns with Ng's (1999, p. 2) description of prequalification as "more a form of art than a result of scientific investigation". Hatush and Skitmore (1997a) went with "subjective and ad hoc manner" in their description. If this is the case, the frustration of unfair and opaque assessment criteria participants perceived would seem justified. It would also make the friction caused by the "heated conversations" spent "battling the keyboard warriors" an unnecessary and preventable corrosion of communication. Baroudi and Metcalfe (2011) found a similar sense of victimisation in the contractors they interviewed, which resulted in resentment and bitterness.

The potential for prequalification to incentivise deceptive or dishonest communication is also acknowledged in the literature (Inouye, 2020; Wilbanks, 2018). Guo et al. (2015, p. 131) thought that desktop audits could "encourage inconsistencies between what companies have presented on documentation and what they have done on sites". This gap may explain why participants encountered contractors onsite, who had likely been through the same pre-requisite prequalification requirement, yet they perceived as being less safe in their behaviours. Although some participants said they were required to give evidence to support their prequalification response, half of those interviewed felt that less trustworthy contractors could manufacture or fake prequalification answers and supporting evidence. The clients in Inouye (2020) study shared participants' concerns, noting the

potential for contractors to be misleading or less than honest in their prequalification responses. However, the drivers for this may not be as nefarious as Inouye (2020) insinuate, given the pressures contractors are under as they compete for work (Underhill & Quinlan, 2011). Regardless, even if prequalification is not genuinely driving deceitful communication, it certainly seems to be fuelling a sense of mistrust between all parties involved.

Liability, Blame and Eroding Trust

"Something goes wrong, they've got a bit of paper that said, 'I did this, it proves it wasn't us, it was somebody else'."

As with communication, prequalification may directly contribute to a breakdown in trust between participants and their clients, focussing both parties on compliance activities at the expense of safety.

The literature paints a bleak picture of the construction industry where H&S management has become an administrative burden, resulting in a cynical view of H&S as a self-protection exercise undertaken to evade responsibility (Harvey et al., 2019; Swuste et al., 2012). Similarly, most participants felt their client's desired outcome from prequalification was to protect themselves from prosecution and place the blame for any wrongdoing on their contractors. Participants perceived the use of third-party prequalification companies as the ultimate display of this, seeing it as evidence that clients were "contracting out" of their responsibilities.

The participants also strongly viewed prequalification as a tick-box approach, more focused on liability than safety. This perceived lack of substance to prequalification processes seemed to feed participants distrust of clients' motives for requiring it, reinforcing it as only having value as a liability limiter. The participants' views of prequalification were an alarming parallel to the Nimrod Report findings (Haddon-Cave, 2009). In the Report, the three parties involved were found to be "ticking a regulatory box which needed to be ticked", which was concluded to "led to a culture of 'paper safety' at the expense of real safety" (Haddon-Cave, 2009, pp. 534, 565). A growing body of literature warns of the cost when compliance-driven activity diverts effort from improving the 'safety of work' (Dekker, 2014; Hollnagel, 2008; Rae & Provan, 2019).

Adding to this concept, Blewett and O'keeffe (2011, p. 1014) assert that "auditing OHSMS has become a ritual rather than a means of improving workplace health and safety".

Likewise, Hatush and Skitmore (1997b) thought clients were more interested in retrieving completed forms than undertaking any action to derive meaning from them. Participants support of this view was highlighted in their answers to what they thought clients did with the information submitted. Participants frequently gave replies like, "they have a health and safety department and they've got somebody who files it in a system". Few participants thought the information was used to select competent contractors.

If participants perceptions of prequalification as a compliance activity hold, then such a minimalist strategy of meeting legal obligations is unlikely to meet the 'so far as is reasonably practicable' (SFAIRP) test embedded in legislation (Peace, 2017; Salguero-Caparrós et al., 2020). The antidote to this strategy may lie in Wilbanks (2018, p. 39) recommendation of "field verification". As one participant astutely pointed out, "if you don't understand what the people on site have to deal with, then it's all just words on paper." However, Holt et al. (1994b, p. 244) found that "after prequalifying a contractor, 63% of construction clients would not investigate the contractor further." Participants also indicated that these site-based inspections were uncommon but could provide a welcome learning opportunity. Participants did warn this would only be the case if checks were undertaken in a manner that did not risk them becoming an administrative burden, with excessive inspecting seen as further evidence of mistrust. This approach may also go some way towards lessening the disconnection Choe et al. (2020) observed between head offices and worksites, which was also commented on by many of the participants.

Constrained Resources

"We're just we're so busy complying with other people's desires that we're not actually able to invest into our systems and ourselves."

The NZ construction industry is comprised predominantly of SMEs who are recognised as operating in a competitive environment with insecure incomes, limiting the resources available to invest in safety-enhancing activities (Lamm, 2014; Legg et al., 2009; Mayhew et al., 1997). Participants' perceptions of prequalification as a barrier to their ability to get work indicate that it creates inequity rather than opportunity, potentially making their financial position more precarious. Also, as with the focus on compliance detracting from safety, prequalification may be diverting already scant resources away from activities more effective at improving H&S outcomes.

The literature indicates that clients see prequalification as creating a fair playing field and, therefore, more equitable access to work (Baroudi & Metcalfe, 2011; Inouye, 2015). However, participants tended to see the requirement to prequalify as a barrier due to the time required to complete them and the high costs associated with third-party schemes, a situation of which they felt their clients might be unaware. For many participants, the prequalification barrier was strong enough to prevent them from tending or bidding for some work.

This barrier was likely to intensify when the requirement to prequalify gave the participant no guarantee of work. This behaviour left participants feeling like they were paying to get contracts, or as one participant put it, "I feel like contracts are dangled like carrots for prequalification passes". Adding to the uncertainty, participants also expressed scepticism, believing that work was not awarded based on prequalification results but more likely on price, a perception supported by the literature (Holt et al., 1994b; Lingard & Oswald, 2020; Mayhew et al., 1997).

In a further potential impact on contactors' ability to get work, the perception of low safety performance may be a competitive disadvantage (Gao et al., 2018). Participants seemed to perceive their prequalification results in this way, especially when numerical scores were applied to their assessments. Regardless of their organisation's size, participants sense of being compared to larger companies unfairly was seen as a further barrier to their ability to get work, as was the frequent requirement to meet minimum scores. Contractors intense guarding of prequalification scores that Baroudi and Metcalfe (2011) observed might have less to do with pride than they thought and have more to do with the fear of a negative impact on an already uncertain pipeline of work.

The perceived barrier of prequalification may also have a flow-on effect for clients, potentially limiting the pool of contractors available to them and resulting in larger, possibly unsafe contractors having an advantage over the safer yet less sophisticated SMEs (Inouye, 2020; Jafari, 2013).

Beyond the impact on contactors' ability to get work and therefore generate income, many participants thought prequalification consumed resources at the cost of other safety activities that would add more value to their business. Participants gave examples ranging from the establishment of dedicated roles, experienced leaders being taken away from the tools where they were responsible for competency training, and being unable to invest in

independent external audits. Clients have also hinted at this resource drain with the procedures to collect information observed as having "taken on a life of their own" at the expense of analysing the information they provide (Hatush & Skitmore, 1997a, p. 34).

Regardless of their organisation size, participants also highlighted the precipitous volume of prequalifications they were required to maintain, with several indicating it ran into double digits. Beyond direct costs, the time component was equally impactful with completing prequalifications a weekly requirement for some participants. This finding aligns with Mills (2005) who observed that prequalification questionnaires tend to be developed uniquely, causing contractors to face many calls to prequalify, which is costly and adds to the burden. As one participant put it, "the biggest curse with it all is the fact that every one of them has a different question set, so you're building an entire individual data set for each".

However, the solution to this may not be as simple as Mills (2005) asserted in their citation of the Australian Construction Industry Development Agency's recommendation to standardise prequalification processes. Participants expressed a similar appeal for standardisation when considering the perceived duplication of effort they experienced. Most participants were also, however, highly critical of what they perceived to be the one-size-fits-all approach of prequalification, which left them feeling the questions were not relevant or proportionate to the work and the risks they manage. This apparent paradox of wanting standardised yet bespoke prequalifications left me feeling like one of the participants who remarked, "I don't have that answer".

Two participants did raise an interesting question that may provide constructive input into this problem. Both participants had extensive experience working internationally. Both observed that the prevalence of prequalification in NZ was far greater than they had experienced elsewhere, yet our injury statistics were worse. The question they raised was why this might be, and could NZ learn anything from "how others might be running prequal". A less burdensome path to contractor selection may be found by examining current international legislation, regulatory approaches, and contractor management strategies.

A Psychosocial Hazard?

"And the pressure that they put on companies … you must have it, otherwise you can't get work with us, it is really stressful."

The more overt direct costs of prequalification include third-party fees and the loss of productive time. These costs are amplified by the duplication of effort from the multiple prequalifications required and a lack of surety in winning work despite a fulfilled prequalification requirement. Less overt are the indirect effects of prequalification in the form of a loss of trust between participants and their clients and the hostile conversations occurring. Adding to this is the frustration of being assessed unfairly, and feeling dictated to and degraded. The direct and indirect costs of prequalification have a cumulative effect on contactors' incomes, professional relationships, and ultimately their wellbeing.

Two of the more evidenced conceptual models relating to the influence of work on stress are the Job Demand-Control Model (JDC) and the Model of Effort-Reward Imbalance (ERI) (Kompier, 2002; Leka & Cox, 2008; Lovelock, 2019). The JDC model links a high level of psychological stressors present in the work environment, such as time pressures and complex work, and a low sense of control with adverse stress reactions (Karasek, 1979). Rather than focusing on control, the ERI model considered reward, including money, job security and respect, linking high effort and low reward to a stressful imbalance (Siegrist, 1996; Siegrist et al., 2005).

The sense participants had of being dictated to, pressured into making changes, and lacking input into prequalification processes could be understood as a lack of control. Where this degenerated into a sense of being degraded or unfairly judged, it could be seen as a loss of respect and, therefore, a reduction in reward also. Further adding to a sense of reward reduction may be participants' perception of the cost of prequalification, especially when there is no guarantee of work or a minimum score is required. Participants' perception of prequalification as a process that adds no material safety improvement may exacerbate this. Finally, when this sense of low control and reduced reward combines with the amount of work and time participants reported in completing prequalifications, it may explain why prequalification is creating the stress that participants communicated.

Participants' heated and fractious conversations with clients or prequalifiers arising from justifying differing approaches to managing risk and the need to challenge results perceived as unfair are also examples of stressors caused by prequalification processes.

When managed poorly for extended periods, conflict can lead to negative long-term consequences for individual health and wellbeing and is thought to threaten people's feeling of connection and support, two essential elements for wellbeing (De Dreu et al., 2004).

Psychosocial hazards are defined by the International Labour Organization (ILO) as workplace factors that can cause stress (Forastieri, 2016; ILO (International Labour Organization), 1986). Work-related stress has been consistently demonstrated to harm physical and mental health and increase work-related accidents (Cooper et al., 1999; Leka & Cox, 2008; Lovelock, 2019; Quick et al., 2013). Most participants communicated a perception of prequalification as a workplace stressor, suggesting it may need to be considered a psychosocial hazard. If this is the case, based on HSWA's requirement to protect workers physical and mental health, it implies a need for those involved in the prequalification process to understand and manage the risk arising from it.

Conclusion

"It's a very, very serious situation we've got ourselves into."

A growing awareness of risk has emerged, driven by the evolution of H&S legislation and this has created a sense of need to select contractors with systematic care. Prequalification is thought to offer a solution to this need, and all parties involved have invested a high level of resource in it. However, despite this investment, there is little research on the effects of prequalification on contractors' behaviour and their voice is seldom reflected in the literature. Therefore, this study aimed to offer insight into how contractors perceive prequalification influences the implementation of their safety systems and generally impacts their safety.

Following interviews with 14 participants from the NZ construction industry, chosen for its high rates of contracting and harm, it appears that prequalification may have direct and indirect impacts on their safety. The pressure exerted by prequalification caused the contractors studied to manipulate their safety statistics and change or add policies and processes to their SMS. Furthermore, it would appear that these changes are frequently made reluctantly and bring little benefit or improvement in safety outcomes.

The influence of prequalification may also increase the risk to participants' employees, either directly through the imposition of unsuitable or unfamiliar controls or indirectly by diverting resources away from other work and complicating communication. Participants also indicated that prequalification is directly impacting their wellbeing by generating high levels of stress. This influence is likely derived from the perception that being unsuccessful in passing prequalification assessments will lead to less work and, therefore, less income. Given the view shared of prequalification as an autocratic and inflexible process, it is also possible the sense of having minimal control over a process that offers an uncertain level of reward may further add to the stress. Those participants that did challenge the requirement or process reported being met with a discouraging and contentious response.

The findings of this study suggest that the predominant narrative in the literature of prequalification as levelling the playing field and facilitating communication and learning is as heavily biased as was posited by the few studies that included contractors' perspectives. The most positive impacts of prequalification reported by the participants in this study were

the regular review prompt it provided and a potential opportunity to educate clients on the work their contractors undertake. The costs of prequalification, however, were striking. Beyond prequalification fees and sunk time was the less direct cost of distancing participants from their clients and negatively impacting their relationships and wellbeing. This trade-off seems a high price to pay for a process that seemingly offers little return, whether that be in liability reduction or the drive of genuine safety improvements.

It is hoped, on behalf of the contractors it examined, the findings of this study will encourage conscious review by those who place their faith in prequalification. This includes those who impose it and those who endorse it, whether through guidelines or research.

Limitations and Future Opportunities

It is acknowledged that a limitation of the chosen qualitative method will be the generalisability of the findings, viewed as interpretations and applicable only to the purposefully narrow sample of NZ construction organisations who participated. However, the participants who speculated on the value of looking to other countries raised an insightful point. Perhaps the opportunity to bring the breadth forgone by this study in favour of depth is to not narrow the scope to what can be learnt about prequalification but instead explore the existence and effectiveness of other approaches to selecting and working with contractors internationally.

Due to my previous working experience with prequalification, I bring certain biases to this study. Nevertheless, I stayed engaged with the data and, at each stage of the analysis, checked and rechecked my findings remained consistent within individual transcripts and more broadly across all the data. Additionally, my H&S and construction industry experience enabled me to understand participants' specialised terminology and examples. In this way, my experience was not seen as a detriment, and the goal was not to eliminate the influence I might have. Instead, I ensured it was used productively by adding an understanding that contributed to realising the research's intent (Creswell & Creswell, 2018; Maxwell, 2009). Beyond this, having experience with the multiple roles involved in prequalification helped me encourage participants to answer from the perspective of completing prequalifications rather than administering them. This approach was necessary as some participants also used prequalification themselves as part of managing their contractors. At times, it wasn't easy to keep them focused on their experiences as

contractors rather than clients. Future research where this variable is controlled by selecting participants who do not engage contractors would provide an interesting opportunity to test for any unidentified influence or bias this might have had.

Lamm (2014) noted the challenging nature of studying small contractors, which also held in this study with two rounds of recruitment required to source the required diversity of participants. This challenge in recruiting subjects may also have led to the introduction of a non-response bias (Creswell & Creswell, 2018; Henry, 2009). Possibly those who responded did so because their beliefs regarding prequalification were strong enough to outweigh the time commitment required. However, the qualitative nature of the study makes evaluating the impact of nonresponse challenging. To reduce this factor as far as practical, participants were selected from diverse backgrounds, with differing roles and from a range of organisations of differing sizes. Additionally, the time burden involved in participating was kept to a minimum by conducting only one interview of approximately 60-90 minutes, which was communicated in the recruitment advertisements used. It is through the continuation of diverse research that this factor will be best eliminated, and the more voices added to the narrative over time, the richer the story and insights will become.

When I first set my sights on researching the impacts of prequalification, it was in the hope of providing a methodologically sound conclusion on its effectiveness as a means of reducing harm. That I was unable to find a way to achieve this goal should not deter other researchers. Though any researchers who attempt this would be wise to consider in their conclusions the impact of a remedy that might be more toxic than curative.

References

Acheamfour, V. K., Kissi, E., & Adjei-Kumi, T. (2019). Ascertaining the impact of contractors pre-qualification criteria on project success criteria. *Engineering, Construction and Architectural Management, 26*(4), 618-632. https://doi.org/10.1108/ECAM-03-2018-0110

Acheamfour, V. K., Kissi, E., Adjei-Kumi, T., & Adinyira, E. (2020). Review of empirical arguments on contractor pre-qualification criteria. *Journal of Engineering, Design and Technology, 18*(1), 70-83. https://doi.org/10.1108/JEDT-03-2019-0067

Afshar, M. R., Alipouri, Y., Sebt, M. H., & Chan, W. T. (2017). A type-2 fuzzy set model for contractor prequalification. *Automation in Construction, 84*, 356-366. https://doi.org/10.1016/j.autcon.2017.10.003

Almklov, P. G., Rosness, R., & Størkersen, K. (2014). When safety science meets the practitioners: Does safety science contribute to marginalization of practical knowledge? *Safety Science, 67*(C), 25-36. https://doi.org/10.1016/j.ssci.2013.08.025

Awad, A., & Fayek, A. R. (2012). A decision support system for contractor prequalification for surety bonding. *Automation in Construction, 21*(1), 89-98. https://doi.org/10.1016/j.autcon.2011.05.017

Bahn, S. (2009). Power and influence: Examining the communication pathways that impact on safety in the workplace. *Journal of Occupational Health and Safety: Australia and New Zealand, 25*(3), 213-222.

Baroudi, B. M., & Metcalfe, M. (2011). A human perspective of contractor prequalification. *The Australasian journal of construction economics and building, 11*(2), 60-70. https://doi.org/10.5130/ajceb.v11i2.2106

Blewett, V., & O'keeffe, V. (2011). Weighing the pig never made it heavier: Auditing OHS, social auditing as verification of process in Australia. *Safety Science, 49*(7), 1014-1021. https://doi.org/10.1016/j.ssci.2010.12.010

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013). *Successful qualitative research: a practical guide for beginners*. SAGE.

Braun, V., & Clarke, V. (2019a). *Answers to frequently asked questions about thematic analysis*. Retrieved 10 October from https://www.psych.auckland.ac.nz/en/about/thematic-analysis.html

Braun, V., & Clarke, V. (2019b). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589-597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2019c). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health*. https://doi.org/10.1080/2159676X.2019.1704846

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic Analysis. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences*. Springer Singapore. https://doi.org/10.1007/978-981-10-5251-4

Charmaz, K. (2006). *Constructing grounded theory: a practical guide through qualitative analysis*. Sage Publications.

CHASNZ. (2019). *The pathology of the New Zealand Construction Sector: why are we killing so many of our workers and what are we going to do about it?* https://www.chasnz.org/articles/the-pathology-of-the-new-zealand-construction-sector

Choe, S., Seo, W., & Kang, Y. (2020). Inter- and intra-organizational safety management practice differences in the construction industry. *Safety Science, 128*. https://doi.org/10.1016/j.ssci.2020.104778

Cooper, C., Liukkonen, P., & Cartwright, S. (1999). Costs and benefits of stress prevention in organisations: Review and new methodology. In *Preventing Stress, Improving Productivity European case studies in the workplace* (pp. 33-51). Routledge. https://doi.org/10.4324/9780203447055-9

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed methods approaches* (5th ed.). Sage Publications.

Crotty, M. (1998). Constructionism: the making of meaning. In *The foundations of social research: meaning and perspective in the research process*. ProQuest Ebook Central. https://ebookcentral-proquest-com.helicon.vuw.ac.nz/lib/vuw/detail.action?docID=5161332.

De Dreu, C. K. W., van Dierendonck, D., & Dijkstra, M. T. M. (2004). Conflict at work and individual well-being. *International Journal of Conflict Management, 15*(1), 6-26. https://doi.org/10.1108/eb022905

Dekker, S. W. A. (2014). The bureaucratization of safety. *Safety Science, 70*, 348.

Dennerlein, J. T., Weinstein, D., Huynh, W., Tessler, J., Bigger, L., Murphy, L., & Manjourides, J. (2020). Associations between a safety prequalification survey and worker safety experiences on commercial construction sites. *American journal of industrial medicine*. https://doi.org/10.1002/ajim.23143

Doloi, H. (2009). Analysis of pre-qualification criteria in contractor selection and their impacts on project success. *Construction Management and Economics, 27*(12), 1245-1263. https://doi.org/10.1080/01446190903394541

El-Sawalhi, N., Eaton, D., & Rustom, R. (2007). Contractor pre-qualification model: State-of-the-art. *International Journal of Project Management, 25*(5), 465-474. https://doi.org/10.1016/j.ijproman.2006.11.011

Fernández-Muñiz, B., Montes-Peón, J. M., & Vázquez-Ordás, C. J. (2009). Relation between occupational safety management and firm performance. *Safety Science, 47*(7), 980-991. https://doi.org/https://doi.org/10.1016/j.ssci.2008.10.022

Forastieri, V. (2016). Prevention of psychosocial risks and work-related stress. *International Journal of Labour Research, 8*(1-2), 11-34. https://www.ilo.org/actrav/international-journal-labour-research/WCMS_551796/lang--en/index.htm

Gao, R., Chan, A. P. C., Lyu, S., Zahoor, H., & Utama, W. P. (2018). Investigating the difficulties of implementing safety practices in international construction projects. *Safety Science, 108*, 39-47. https://doi.org/10.1016/j.ssci.2018.04.018

Gressgård, L. J., & Hansen, K. (2015). Knowledge exchange and learning from failures in distributed environments: The role of contractor relationship management and work characteristics. *Reliability Engineering and System Safety, 133*, 167-175. https://doi.org/10.1016/j.ress.2014.09.010

Gunduz, M., & Khader, B. K. (2020). Construction project safety performance management using Analytic Network Process (ANP) as a Multicriteria Decision-Making (MCDM) tool. *Computational intelligence and neuroscience, 2020*, 2610306-2610306. https://doi.org/10.1155/2020/2610306

Guo, B. H. W., Yiu, T. W., & González, V. A. (2015). Identifying behaviour patterns of construction safety using system archetypes. *Accident Analysis and Prevention, 80*, 125-141. https://doi.org/10.1016/j.aap.2015.04.008

Haddon-Cave, C. (2009). The Nimrod review. An independent review into the broader issues surrounding the loss of the RAF Nimrod MR2 Aircraft XV230 in Afghanistan in 2006: HC 125. (UK Parliament 2008-2009)

Harvey, E. J., Waterson, P., & Dainty, A. R. J. (2019). Applying HRO and resilience engineering to construction: Barriers and opportunities. *Safety Science, 117*, 523-533. https://doi.org/10.1016/j.ssci.2016.08.019

Hasnain, M., Thaheem, M., & Ullah, F. (2018). Best value contractor selection in road construction projects: ANP-based decision support system. *International Journal of Civil Engineering, 16*(6), 695-714. https://doi.org/10.1007/s40999-017-0199-2

Hatush, Z., & Skitmore, M. (1997a). Criteria for contractor selection. *Construction Management and Economics, 15*(1), 19-38. https://doi.org/10.1080/014461997373088

Hatush, Z., & Skitmore, M. (1997b). Evaluating contractor prequalification data: selection criteria and project success factors. *Construction Management and Economics, 15*(2), 129-147. https://doi.org/10.1080/01446199700000002

Henry, G. T. (2009). Practical sampling. In *The SAGE Handbook of Applied Social Research Methods* (2 ed.). SAGE Publications, Inc. https://doi.org/10.4135/9781483348858

Heras-Saizarbitoria, I., Boiral, O., Arana, G., & Allur, E. (2019). OHSAS 18001 certification and work accidents: Shedding light on the connection. *Journal of Safety Research, 68*, 33-40. https://doi.org/10.1016/j.jsr.2018.11.003

Hollnagel, E. (2008). Risk + barriers = safety? *Safety Science, 46*(2), 221-229. https://doi.org/10.1016/j.ssci.2007.06.028

Hollnagel, E. (2014). *Safety-I and safety-II: the past and future of safety management*. Ashgate.

Holt, G. (2010). Contractor selection innovation: Examination of two decades' published research. *Construction Innovation, 10*(3), 304-328. https://doi.org/10.1108/14714171011060097

Holt, G. D. (1998). Which contractor selection methodology? *International Journal of Project Management, 16*(3), 153-164. https://doi.org/10.1016/S0263-7863(97)00035-5

Holt, G. D., Olomolaiye, P. O., & Harris, F. C. (1994a). Evaluating prequalification criteria in contractor selection. *Building and Environment, 29*(4), 437-448. https://doi.org/10.1016/0360-1323(94)90003-5

Holt, G. D., Olomolaiye, P. O., & Harris, F. C. (1994b). Factors influencing U.K. construction clients' choice of contractor. *Industrial and Engineering Chemistry Research, 33*(5), 241-248.

Holt, G. D., Olomolaiye, P. O., & Harris, F. C. (1995). A review of contractor selection practice in the U.K. construction industry. *Building and Environment, 30*(4), 553-561. https://doi.org/10.1016/0360-1323(95)00008-T

HSE. (2011). *Managing contractors: a guide for employers HSG159* (2nd ed.). HSE Books. www.hse.gov.uk/pubns/books/hsg159.htm

Huang, X., & Hinze, J. (2006). Owner's role in construction safety. *Journal of Construction Engineering and Management, 132*(2), 164. https://doi.org/10.1061/(ASCE)0733-9364(2006)132:2(164)

ILO (International Labour Organization). (1986). *Psychosocial factors at work: Recognition and control* (Report of the Joint ILO/WHO Committee on Occupational Health, Ninth Session, Geneva, 18–24 September 1984, Occupational Safety and Health Series No. 56, Issue. https://www.who.int/occupational_health/publications/ILO_WHO_1984_report_of_the_joint_committee.pdf

Inouye, J. (2015). *Best practices in contractor management*. C. I. a. t. N. S. Council. https://www.thecampbellinstitute.org/best-practices-in-contractor-management/

Inouye, J. (2020). *Contractor life cycle: Managing expectations*. C. I. a. t. N. S. Council. https://www.thecampbellinstitute.org/best-practices-in-contractor-management/

Iyer, K. C., Kumar, R., & Singh, S. P. (2020, 2020/03/03). Understanding the role of contractor capability in risk management: A comparative case study of two similar projects. *Construction Management and Economics, 38*(3), 223-238. https://doi.org/10.1080/01446193.2019.1590614

Jafari, A. (2013). A contractor pre-qualification model based on the quality function deployment method. *Construction Management and Economics, 31*(7), 746-760. https://doi.org/10.1080/01446193.2013.825045

Jennings, P., & Holt, G. D. (1998). Prequalification and multi-criteria selection: A measure of contractors' opinions. *Construction Management and Economics, 16*(6), 651-660. https://doi.org/10.1080/014461998371944

Karasek, R. A., Jr. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative science quarterly, 24*(2), 285-308. https://doi.org/10.2307/2392498

Kompier, M. (2002). Job design and well-being. In M. J. Schabracq, J. A. M. Winnubst, & C. L. Cooper (Eds.), *The handbook of work and health psychology* (2 ed., pp. 427-454). Wiley.

Kvale, S. (2007). *Doing interviews*. SAGE.

Kvale, S., & Brinkmann, S. (2015). *InterViews: learning the craft of qualitative research interviewing* (Third edition. ed.). Sage Publications.

Labuschagne, A. (2003). Qualitative research - airy fairy or fundamental? *The Qualitative Report, 8*(1), 100-103. https://nsuworks.nova.edu/tqr/vol8/iss1/7

Lamare, J. R., Lamm, F., McDonnell, N., & White, H. (2015). Independent, dependent, and employee: Contractors and New Zealand's Pike River Coal Mine disaster. *Journal of Industrial Relations, 57*(1), 72-93. https://doi.org/10.1177/0022185614560596

Lamm, F. (2014). The challenges of researching OHS of vulnerable workers in small businesses. *Small Enterprise Research: Understanding small enterprises - healthy lives in healthy businesses, 21*(2), 161-179. https://doi.org/10.1080/13215906.2014.11082085

Legg, S., Battisti, M., Harris, L., Laird, I., Lamm, F., Massey, C., & Olsen, K. (2009). *Occupational health and safety in small business. Technical Report 12. NOHSAC.* https://www.massey.ac.nz/massey/fms/Colleges/College%20of%20Business/CERGOSH/Docs/NOHSAC%20Number%2012.pdf

Leka, S., & Cox, T. (Eds.). (2008). *The European framework for psychosocial risk management: PRIMA-EF*. Institute of Work, Health and Organisations. http://www.prima-ef.org/uploads/1/1/0/2/11022736/prima-ef_ebook.pdf.

Lingard, H., & Oswald, D. (2020). Safety at the front line: Social negotiation of work and safety at the Principal Contractor–Subcontractor interface. *Journal of Construction Engineering and Management, 146*(4). https://doi.org/10.1061/(ASCE)CO.1943-7862.0001799

Lingard, H., Wakefield, R., & Walker, D. (2020). The client's role in promoting work health and safety in construction projects: Balancing contracts and relationships to effect change. *Construction Management and Economics*, 1-16. https://doi.org/10.1080/01446193.2020.1778758

Liu, K.-H., Tessler, J., Murphy, L. A., Chang, C.-C., & Dennerlein, J. T. (2019). The gap between tools and best practice: An analysis of safety prequalification surveys in the construction industry. *New solutions, 28*(4), 683-703. https://doi.org/10.1177/1048291118813583

Lovelock, K. (2019). *Psychosocial hazards in work environments and effective approaches for managing them: Research and evaluation*. WorkSafe New Zealand. https://www.worksafe.govt.nz/research/psychosocial-hazards-in-work-environments-and-effective-approaches-for-managing-them

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by Information Power. *Qualitative Health Research, 26*(13), 1753-1760. https://doi.org/10.1177/1049732315617444

Manjourides, J., & Dennerlein, J. T. (2019). Testing the associations between leading and lagging indicators in a contractor safety pre-qualification database. *American journal of industrial medicine, 62*(4), 317-324. https://doi.org/10.1002/ajim.22951

Manu, P., Ankrah, N., Proverbs, D., & Suresh, S. (2013). Mitigating the health and safety influence of subcontracting in construction: The approach of main contractors. *International Journal of Project Management, 31*(7), 1017-1026. https://doi.org/https://doi.org/10.1016/j.ijproman.2012.11.011

Maxwell, J. A. (2009). Designing a qualitative study. In *The SAGE Handbook of Applied Social Research Methods* (2 ed.). SAGE Publications, Inc. https://doi.org/10.4135/9781483348858

Mayhew, C., Quinlan, M., & Ferris, R. (1997). The effects of subcontracting/ outsourcing on occupational health and safety: Survey evidence from four Australian industries. *Safety Science, 25*(1), 163-178. https://doi.org/https://doi.org/10.1016/S0925-7535(97)00014-3

Mays, N., & Pope, C. (1995). Qualitative Research: Rigour and qualitative research. *BMJ, 311*(6997), 109-112. https://doi.org/10.1136/bmj.311.6997.109

MBIE. (2014). *The Small Business Sector Report 2014*.

https://www.mbie.govt.nz/assets/a3f3ad1f01/small-business-sector-report-2014.pdf

Mearns, K., & Ivar Håvold, J. (2003). Occupational health and safety and the balanced scorecard. *The TQM Magazine, 15*(6), 408-423. https://doi.org/10.1108/09544780310502741

Mills, A. (2005). Client and Contractor attitudes to prequalification. *AACE International Transactions*, R81-R89.

Mohammadi, A., Tavakolan, M., & Khosravi, Y. (2018). Factors influencing safety performance on construction projects: A review. *Safety Science, 109*, 382-397. https://doi.org/10.1016/j.ssci.2018.06.017

Nathan, S., Newman, C., & Lancaster, K. (2019). Qualitative Interviewing. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences*. Springer Singapore. https://doi.org/10.1007/978-981-10-5251-4

Ng, S. T. (1999). Decision-makers' perceptions in the formulation of prequalification criteria. *Engineering Construction & Architectural Management, 6*(2), 155. https://doi.org/10.1046/j.1365-232X.1999.00089.x

Ng, S. T. (2001). EQUAL: A case-based contractor prequalifier. *Automation in Construction, 10*(4), 443-457. https://doi.org/10.1016/S0926-5805(00)00079-0

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: striving to meet the Trustworthiness Criteria. *International Journal of Qualitative Methods, 16*(1). https://doi.org/10.1177/1609406917733847

Nunes, I. L. (2012). The nexus between OSH and subcontracting. *Work (Reading, Mass.), 41*, 3062-3068. https://doi.org/10.3233/WOR-2012-0564-3062

OECD. (2002). *OECD small and medium enterprise outlook 2002*. OECD Publications Service. https://doi.org/10.1787/sme_outlook-2002-en

Palaneeswaran, E., & Kumaraswamy, M. (2001). Recent advances and proposed improvements in contractor prequalification methodologies. *Building and Environment, 36*(1), 73-87. https://doi.org/10.1016/S0360-1323(99)00069-4

Patton, M. Q. (2015). *Qualitative research & evaluation methods : integrating theory and practice* (Fourth edition. ed.). SAGE Publications, Inc.

Peace, C. (2017). The reasonably practicable test and work health and safety-related risk assessments. *New Zealand Journal of Employment Relations (Online), 42*(2), 61-78.

Peace, C., Mabin, V., & Cordery, C. (2017). Due diligence: A panacea for health and safety risk governance? *Policy and Practice in Health and Safety, 15*(1), 19-37. https://doi.org/10.1080/14773996.2016.1275497

Peñaloza, G. A., Saurin, T. A., Formoso, C. T., & Herrera, I. A. (2020). A resilience engineering perspective of safety performance measurement systems: A systematic literature review. *Safety Science, 130*, 104864. https://doi.org/https://doi.org/10.1016/j.ssci.2020.104864

Provan, D. J., Dekker, S. W. A., & Rae, A. J. (2018). Benefactor or burden: Exploring the professional identity of safety professionals. *Journal of Safety Research, 66*, 21-32. https://doi.org/10.1016/j.jsr.2018.05.005

PRRC. (2012). *Royal Commission on the Pike River Coal Mine Tragedy: Volume 1 + Overview*. https://pikeriver.royalcommission.govt.nz/Final-Report

Quick, J. C., Wright, T. A., Adkins, J. A., Nelson, D. L., & Quick, J. D. (2013). *Preventive stress management in organizations* (2 ed.). American Psychological Association, Washington, DC. https://doi.org/http://dx.doi.org/10.1037/13942-000

Quinlan, M., & Bohle, P. (2004). Contingent work and occupational safety. In J. Barling & M. Frone (Eds.), *The psychology of workplace safety* (pp. 81-105). American Psychological Association. https://doi.org/10.1037/10662-005

Quinlan, M., & Bohle, P. (2008). Under pressure, out of control, or home alone? Reviewing research and policy debates on the occupational health and safety effects of outsourcing and home-based work. *International Journal of Health Services, 38*(3), 489-523. https://doi.org/10.2190/HS.38.3.g

Rae, A., & Provan, D. (2019). Safety work versus the safety of work. *Safety Science, 111*, 119-127. https://doi.org/10.1016/j.ssci.2018.07.001

Rae, A., Provan, D., Aboelssaad, H., & Alexander, R. (2020). A manifesto for Reality-based Safety Science. *Safety Science, 126*. https://doi.org/10.1016/j.ssci.2020.104654

Rae, A. J., Provan, D. J., Weber, D. E., & Dekker, S. W. A. (2018). Safety clutter: the accumulation and persistence of 'safety' work that does not contribute to operational safety. *Policy and Practice in Health and Safety, 16*(2), 194-211. https://doi.org/10.1080/14773996.2018.1491147

Rashvand, P., Majid, M. Z. A., & Pinto, J. K. (2015). Contractor management performance evaluation model at prequalification stage. *Expert Systems With Applications, 42*(12), 5087-5101. https://doi.org/10.1016/j.eswa.2015.02.043

Rennie, D. L. (2006). The grounded theory method: application of a variant of its procedure of constant comparative analysis to psychotherapy research. In C. T. Fischer (Ed.), *Qualitative research methods for psychologists introduction to empirical studies*. Elsevier Academic Press.

Robertson, D. (2017). *Application for an enforceable undertaking*. Downer New Zealand Limited/WorkSafe New Zealand. https://worksafe.govt.nz/laws-and-regulations/enforceable-undertakings/accepted-enforceable-undertakings/downer-new-zealand-limited/

Russell, J. S., Hancher, D. E., & Skibniewski, M. J. (1992). Contractor prequalification data for construction owners. *Construction Management and Economics, 10*(2), 117-135. https://doi.org/10.1080/01446199200000012

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3E [Third edition]. ed.). SAGE.

Salguero-Caparrós, F., Pardo-Ferreira, M. C., Martínez-Rojas, M., & Rubio-Romero, J. C. (2020). Management of legal compliance in occupational health and safety. A literature review. *Safety Science, 121*, 111-118. https://doi.org/https://doi.org/10.1016/j.ssci.2019.08.033

Shorrock, S. T. (2020). *Safety Research and Safety Practice: Islands in a Common Sea* (1 ed.). CRC Press. https://doi.org/10.4324/9781351190237-14

Sieber, J. E. (2009). Planning ethically responsible research. In *The SAGE Handbook of Applied Social Research Methods* (2 ed.). SAGE Publications, Inc. https://doi.org/10.4135/9781483348858

Siegrist, J. (1996). Adverse Health Effects of High-Effort/Low-Reward Conditions. *Journal of Occupational Health Psychology, 1*(1), 27-41. https://doi.org/10.1037/1076-8998.1.1.27

Siegrist, J., Falck, B., & Joksimovic, L. (2005). The effects of effort–reward imbalance at work on health. In A. S. Antoniou & C. L. Cooper (Eds.), *Research Companion to Organizational Health Psychology*. Edward Elgar Publishing. https://doi.org/10.4337/9781845423308

Sim, J., Saunders, B., Waterfield, J., & Kingstone, T. (2018). Can sample size in qualitative research be determined a priori? *International Journal of Social Research Methodology, 21*(5), 619-634. https://doi.org/10.1080/13645579.2018.1454643

Sonmez, M., Holt, G., Yang, J., & Graham, G. (2002). Applying evidential reasoning to prequalifying construction contractors. *Journal Of Management In Engineering, 18*(3), 111-119. https://doi.org/10.1061/(ASCE)0742-597X(2002)18:3(111)

Swuste, P., Frijters, A., & Guldenmund, F. (2012). Is it possible to influence safety in the building sector? A literature review extending from 1980 until the present. *Safety Science, 50*(5), 1333-1343. https://doi.org/10.1016/j.ssci.2011.12.036

Teddlie, C., & Yu, F. (2007). Mixed Methods Sampling: A Typology With Examples. *Journal of mixed methods research, 1*(1), 77-100. https://doi.org/10.1177/1558689806292430

Underhill, E., & Quinlan, M. (2011). How precarious employment affects health and safety at work: The case of temporary agency workers. *Relations Industrielles/Industrial Relations, 66*(3), 397. https://doi.org/10.7202/1006345ar

Valluru, C. T., Rae, A., & Dekker, S. (2020). Behind Subcontractor Risk: A Multiple Case Study Analysis of Mining and Natural Resources Fatalities. *Safety (Basel), 6*(3), 40. https://doi.org/10.3390/safety6030040

Vinodkumar, M. N., & Bhasi, M. (2011). A study on the impact of management system certification on safety management. *Safety Science, 49*(3), 498-507. https://doi.org/https://doi.org/10.1016/j.ssci.2010.11.009

Walters, D., & James, P. (2011). What motivates employers to establish preventive management arrangements within supply chains? *Safety Science, 49*(7), 988-994. https://doi.org/10.1016/j.ssci.2010.12.004

Wilbanks, D. (2018). Contractor safety prequalification: The reality of demanded written programs. *Professional Safety, 63*(7), 36-40.

Wilbanks, D. (2019). Contractor safety prequalification: The significant limitations of loss rates. *Professional Safety, 64*(7), 22-26.

WorkSafe. (2019a). *Companies must consult, coordinate and cooperate when working together on site*. https://worksafe.govt.nz/about-us/news-and-media/companies-must-consult-coordinate-and-cooperate-when-working-together-on-site/

WorkSafe. (2019b). *PCBU's working together: Advice when contracting*.

https://worksafe.govt.nz/managing-health-and-safety/getting-

started/understanding-the-law/overlapping-duties/

WorkSafe. (2020). *Injury, illness and serious harm*. WorkSafe.

https://data.worksafe.govt.nz/graph/summary/injuries_serious_harm

Wu, C., Wang, F., Zou, P. X. W., & Fang, D. (2016). How safety leadership works among

owners, contractors and subcontractors in construction projects. *International

Journal of Project Management, 34*(5), 789-805.

https://doi.org/10.1016/j.ijproman.2016.02.013

Appendices

Appendix A – Interview Schedule

1. Can you please tell me about your organisation and what they do?

    Follow ups:

    - How many people in the organisation?

    - What type of work do you commonly undertake?

    - What type of worksites do your workers work on? E.g., vertical, horizontal, green, brown?

    - What type of organisations do you typically work for? E.g., Mainly commercial, project managers, main contractors, business-to-business clients, bigger than you, or smaller.

2. What is your role in the organisation?

    Follow ups:

    - How long have you been with the organisation?

    - Have you always been in similar roles?

    - What are your responsibilities in relation to prequalification?

3. What type of work or organisations do you typically have to complete safety prequalification's (prequalification's) for?

    Follow ups:

    - Does it tend to be larger organisations or projects?

    - Has this changed over time?

    - Is it a more common request now that it used to be?

    - Do they tend be for individual projects/tenders or is more like to get on a preferred contractors list?

4. Are they run by the client/customer or by third party prequalifiers?

Follow ups:

- If both, are there any differences in client versus third party prequalification's?
- Do you have any preference? Why/why not?

5. What do the prequalification's you have undergo typically require you to do?

Follow ups:

- How much time do you think it takes for you/your team to complete all the prequalification's you have to do?
- Does it cost you anything beyond time and if so, what would you estimate this to be?

6. Why do you think these organisations, or this type of work require you to prequalify?

Follow ups:

- What do you think they use the information for?
- What value do you think they bring to the organisation/people who ask you complete prequalification?
- Do you prequalify sub-contractors? Why? Do you think your clients think the same/have the same approach?

7. Are there any questions or evidence that you find particularly challenging to answer?

Follow ups:

- Why / why not?
- What about that requirement is challenging?

8. Is there anything special you have had to do that is not business as usual because of a prequalification requirement?

> Follow ups:

- Is there any documentation, forms or processes you have had to put in place because a prequalification requires it?
- Did you find this to be a helpful addition to your safety system?

9. Is there anything new you have learned from undertaking a prequalification/s?

> Follow ups:

- Was this useful or helpful?
- Why have you found this useful/not useful or helpful/unhelpful?

10. If you could give your client some feedback about the prequalification process, what would it be?

> Follow ups:

- Is there something that could be done differently that you think would add more value to you?
- Is there something that could be done differently that you think would make the process better/easier?
- Is there something that could be done differently that you think would add more value to your client/customer?
- Is there something about the impact of prequalification you wish they understood?
- Do you think you could ever give this feedback? Why / why not?

11. Is there anything about prequalification that we have not discussed that you would like me to know or understand?

> Follow ups:

- Can you explain that in little more detail?
- Why do you think that is important to highlight?

Appendix B – Coding Framework

Table 2. Coding Framework

PROCESS - sets the context of the process, what participants are being asked to do and its efficacy
One-size-fits-all, generic approach and its effects
Prequalification's are 'one size fits all' or generic and so: not relevant to the work our company does or the risk we manage
Prequalification's are 'one size fits all' or generic and so: not proportional to the work our company does or the risk we manage
Prequalification's are 'one size fits all' or generic and so: not relevant to the NZ market or environment
Prequalification's are 'one size fits all' or generic and so: assesses us unfairly
Smaller companies are being compared unfairly to larger companies with more resource
NZ companies are being compared unfairly to larger international companies with more resource
Frustration because: we feel we are being assessed unfairly
I want to have a voice in prequal submission, for it to be a conversation so I can share information and be more fairly assessed
I want to be given the opportunity to have a say/voice in how I am prequalified so that it is more relevant and fair
There is a positive impact to feeling you have been assessed, judged or treated fairly (it removes a barrier and reduces stress)
Perception the prequalification process
The prequalification process is: a box ticking or transactional exercise
The prequalification process is: just a game we have to play
The prequalification process is: an irritation/annoyance
The prequalification process is: a waste of time
The prequalification process is: adding no benefit to contractors
The prequalification process is: something that's not going away and has to be done, resignation
The prequalification process is: better than nothing

The prequalification process is: good practice, so it's a compliance requirement
Feelings of frustration because: prequalification is just administration/paper work
Questionnaires: interpterion and effects
The prequalification process feels like I am jumping through hoops
It is difficult to interpret what the prequalification's are asking because: the questions aren't clear
It is difficult to interpret what the prequalification's are asking because: the evidence requirements aren't clear
It is difficult to interpret what the prequalification's are asking because: different terms are used for the same thing
It is difficult to interpret what the prequalification's are asking because: the information required is not recorded or kept
Even the clients are unable to explain what they want or don't know either
Learning from prequalification
There is no feedback once I complete a prequalification, this is a missed opportunity to learn
I have not learned anything from completing prequalification's (other than patience, tolerance, how to try and stay calm, how to do prequals)
There is value in the external view gained from prequalification's, it is an opportunity to learn
Prequalification prompts regular review, which is helpful
Prequal can help educate clients about our work and risks
I am open to receiving constructive feedback and learning through engagement
There is a gap left by scrapping of the ACC WSMP that prequalification is not filling
The link between prequal and safety outcomes on a site/project: Work as Imagined v Work as Done
Something needs to change, prequalification is not improving safety outcomes
Frustration because prequalification is ineffective at improving safety outcomes
I want prequalification to be effective at improving risk management
Prequalification is not capable of improving safety outcomes

There is a disconnect between the office where prequalification's are looked at the site where the work is done
There is a no correlation between a good prequal result and onsite performance
Checks to compare prequalification results to onsite or post-contract performance are uncommon
Onsite performance inspections are a valuable opportunity to learn
Onsite performance inspections are time consuming and delay the work being done
Too many performance checks undermine trust
There is the potential for deceitful or misleading responses to be given in when answering prequalification questionnaires by other contractors
I am not often asked for evidence/proof
I am often asked for evidence/proof
Prequalification has a reactive/backwards focus
There has bee a recent shift to include proactive measures
Prequalification does not communicate the positive culture we have
Odd but interesting
Prequalification does not consider other business risks that are important when selecting contractors

PEOPLE - participants understanding of themselves, their clients and the third-party prequalification companies involved in the process
Understanding each other
I am proud of our work and/or people
I want to showcase our strengths
Our clients do not understand our work
Third-party prequalifiers do not understand our work
Clients are not interested in understanding our work
I don't think the client's has the competency to assess good
I don't think the third-party assessors have competency to assess good
The assessment of my prequalification is unfair because they don't understand my work

I'm sceptical about the quality of our prequalification assessments (because of competency or subjectivity concerns)
Issues of trust
Clients' motivation for requiring prequalification is: to protect themselves from prosecution
Clients' motivation for requiring prequalification is: so they can blame us if something goes wrong
Clients' motivation for requiring prequalification is: to make themselves look good
Clients' motivation for requiring prequalification is: because it's a due diligence requirement
Clients' motivation for requiring prequalification is: because it's a system or compliance requirement
Clients' motivation for requiring prequalification is: to choose the right calibre of contractor
Client resource probably quite constrained (empathy)
I don't think work is awarded based on good prequalification results
Frustration at the lack of transparency in how prequalification's are assessed
I am concerned about releasing private or confidential information relating to employees, other clients or subcontractors
Relationships and effects
A more personal relationship with our clients is valued: as evidence of care
A more personal relationship with our clients is valued: because it builds trust
A more personal relationship with our clients is valued: because prequalification gives a return on investment or adds value when there's engagement, either making it more related to our work or an opportunity to learn
A more personal relationship with our clients is valued: because we want to help our client be successful
A more personal relationship with our clients is valued: at a local or site level
When managed online or through third-parties, prequalification's are generic and impersonal
Prequalification as a barrier

Prequalification is a barrier to getting work because: of the resource it requires (cost, time)
Prequalification is a barrier to getting work because: it's too complex
Prequalification is a barrier to getting work because: of a principled resistance to participating
Prequalification is a barrier to getting work because: if we don't do have the required one, the client's system can't pay us
The barrier of prequalification can be circumvented by sub-contracting to other organisations
My client's client required our company to prequalify
Third-party prequalifiers
Prequalification seems to be just revenue generator for third party companies
Prequalification seems to be just revenue generator for consultants
I am sceptical about giving proprietary parts of our SMS to prequalification companies or clients who may then sell them
Third party prequalifiers create a disconnect or barrier between us and our clients
Clients are contracting out their responsibilities to third party prequalifiers

IMPACT - how prequalification is impacting participants' business, SMS and on them personally
The burden of prequalification
Prequalification takes a lot of time
Prequalification takes costs a lot of money
Clients seem unaware of the financial burden which may not be recovered directly
Frustration because of the duplication of effort caused by the multiple prequalification's required
It would be better if there was a standardised approach so duplication and costs are minimised
It would be good if prequalification was aligned to an internationally recognised standard like ISO 45001
It would be good if prequalification was aligned to a WorkSafe recognised standard

It would be good if prequalification was more flexible in its approach
Prequalification takes resource away from internal risk management and improvements
I have used prequalification results internally to influence investment in improvements
Impacts to SMSs
Our SMS is effective (pride)
I am pressured to change our SMS to conform with prequalification requirements
Our system or risk management approach is different to our clients and so we are pressured to change it
I am required to manipulate our recorded information to meet the varying requirements of the different prequalifications
I have manipulated our documented SMS to meet a prequalification requirement
I have considered whether an improvement or innovation we wanted to introduce to our SMS would negatively impact our ability to pass prequalifications
I am reluctant to make fundamental changes to our SMS
I will not add procedures to our SMS that I see no value in to pass a prequalification
Dictated to and degraded
I feel like I am being dictated to, and have no control over something that has a significant impact on me
I feel like I am being degraded or talked down to
I am frustrated because I do not feel I am being heard or listened to
Wellbeing impacts
Prequalification is impacting wellbeing/placing pressure because: it places a significant financial burden on us
Prequalification is impacting wellbeing/placing pressure because: it might prevent me/our business from getting work, staying financially viable, paying people
Prequalification is impacting wellbeing/placing pressure because: of the amount of work required and it can be hard to find the required evidence
The difficulty interpreting what the prequalification's are asking for wastes time and creates stress
The difficulty interpreting what the prequalification's are asking for causes stress

Prequalification is impacting wellbeing/placing pressure because: even with all the effort put in there can be no guarantee of work (carrot dangling)
Prequalification is impacting wellbeing/placing pressure because: after working hard to complete it, the result is not a fair reflection of our capability
Prequalification is impacting wellbeing/placing pressure because: I feel a personal need to be successful

OTHER - not used in final report
Requirement to prequal has increased over time
Prequalification does not: address the need for increased middle management competency
Contractors are curious about whether other contractors share their experiences and impressions or prequalification, seeking validation, or expressing self-doubt