An Exploration of Occupational Health and Safety (OHS) Competencies Among General OHS Professionals in New Zealand

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Abstract

The occupational health and safety (OHS) profession in New Zealand has made immense progress since its origins in post-colonial times due to a large extent because of progressive legislative and administrative developments; the most impactful being the recent overhaul of the profession after Pike River Coal Mine tragedy in 2010 (Peace, Lamm, Dearsly & Parkes, 2019). General OHS professionals constitute a significant part of the OHS professional workforce that includes several OHS specialist professionals, such as occupational hygienists (HASANZ, 2019). Previous research indicates that OHS professionals in New Zealand play an important role in improving workplace health and safety but the workforce is ageing and it is largely underqualified while the demand for OHS professionals continues to rise (Dobson, 2018; HASANZ, 2019; Olsen, 2012, 2014). Though there is research on the OHS professional, it fails to throw light on the current and future competencies that OHS generalists require and the capability gaps in the profession. The focus of this study is to explore competency and capability gaps among OHS generalists, the current and future demand, and challenges facing the OHS profession in New Zealand.

The thesis begins with a background on the topic and a review of the relevant literature. A mixed method approach was used in the research design. Semi-structured interviews with OHS stakeholders, such as OHS recruiters, academics, professionals and leaders of OHS stakeholder bodies, were conducted. In addition, a Qualtrics-based online survey with close-ended questions on demographic details, professional development and perceived competencies was circulated among OHS generalists in New Zealand. Overall, 10 interviews were conducted and 53 submitted responses from OHS generalists were received.

Five key findings resulted from the data analysis. First, most organisations are in a reactive-calculative phase of safety maturity, with a "tick box" safety mentality (Hudson, 2003). Second, OHS generalists play a supportive role in organisations, improving and uplifting the overall safety culture. Third, the survey results showed that overall the OHS generalist workforce lacks relevant qualifications, soft skills and cultural competency. The quantitative results, however, showed that the majority of respondents were experienced, qualified and competent in several aspects of their role. A possible explanation for this finding is that over 80% of the survey sample worked in medium- and large-sized organisations which may have skewed the sample. Fourth, results showed that there is an anticipated demand for OHS generalists as more organisations require professional support in identifying specific risks and to carry out their OHS obligations. Fifth, the scant number of tertiary OHS qualification offerings was due in part to the academic institutions' perception of poor financial return from such courses particularly since the onset of Covid-19. And yet the micro-credential/continuing professional development courses were seen as an attractive option for many OHS professionals and as a consequence this market was thriving. Finally, this study contributes to our knowledge by raising several issues facing the OHS profession and identifies areas of further research, for example how can the OHS professional best serve the needs of the small business sector.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Ethics Approval

This research was approved by the Auckland University of Technology Ethics Committee (AUTEC) on the 14th of January 2021 under Ethics Application Number 20/354.

Chapter 1: Introduction

The occupational health and safety (OHS) profession in New Zealand is on a developmental pathway with the most significant steps being taken after the Pike River Coal Mine tragedy in 2010. The establishment of WorkSafe New Zealand (referred to as WorkSafe from hereafter) in 2013 as an independent regulator, the enactment of the *Health and Safety at Work Act* (HSWA) in 2015 and the adoption of the International Network of Safety and Health Practitioner Organisations (INSHPO) *Occupational Health and Safety Professional Capability Framework* (OHSPCF) in 2017 were significant milestones towards developing the OHS profession within New Zealand. However, these developments also posed a set of challenges, such as developing a competent and capable workforce of general OHS professionals, for the stakeholders striving to develop the profession. Therefore, based on an investigation of the issues within the New Zealand OHS profession and a review of the academic literature on the topic, this study aimed to explore stakeholders' perspectives regarding the gaps and challenges in the general OHS profession and locate competencies among OHS generalists.

Chapter 1 provides a brief overview of the origin and development, and the current status of the OHS profession in New Zealand. The chapter provides a rationale for keeping the general OHS profession as a focus of this study, outlining the significance of the role that OHS generalists perform in organisations. The chapter highlights upcoming challenges in terms of competencies among and rising demand for OHS generalists that need to be addressed. Finally, Chapter 1 sets out the study aims and objectives and outlines the structure of the

thesis. However, Section 1.1. below outlines the origin and growth of OHS profession in New Zealand over the time.

1.1. The OHS Profession in New Zealand

1.1.1. Origin and Progress in the OHS Profession

The origin and development of OHS profession in New Zealand has been influenced by two primary factors. First, global developments, particularly the legislative developments in the UK, and second, the emergence of and progress made in the employment relations framework in New Zealand.

The employment relations in New Zealand began with the arrival of European settlers who imported British laws to govern the country (Geare, 1988). Employment relations were initially governed by English common law and the statutes enacted by the New Zealand parliament, such as the *English Laws Act 1858*, which largely favoured the employers in the matters of industrial dispute (Roth, 1978). Further, worker protection laws were absent and the trade unions were illegal until 1878 (Brosnan, Smith & Walsh, 1990).

Many of the British employment laws were adopted by the fledgling New Zealand parliament, commencing with the enactment of Employment of Females Act 1873 (Anderson & Quinlan, 2008; Lamm, 2009). The exploitation of workers worsened with the onset of economic depression in late 1870s, which led to industrial unrest and strikes culminating in the Maritime Strike in 1890 (Merrett, 1969). These developments had two effects. First, the Government appointed a Royal Commission (famously known as Sweating Commission) in 1890 to inquire the condition of industrial workers (Lamm, 2009). Second, under community

pressure, the then newly elected Liberal Government enacted the *Industrial Conciliation and Arbitration* (IC&A) *Act* in 1894 which provided a state-regulated formal framework to govern the employer–employee relationship and empowered trade unions (Chelliah & Mukhi, 2004; Deeks, Parker & Ryan, 1994; Merrett, 1969).

As a consequence of the Royal Commission's recommendations, the government enacted more protective laws such as the *Factories Act* 1891 and 1894 and the *Shops and Shop-assistants Act* 1894 which focussed on the working conditions of shop floor and factory workers, prominently women and children (Lamm, 2009). The number of OHS laws grew until the late 20th century but proved ineffective as these laws lacked coherence, were over-specific and prescriptive and were being regulated by several government departments leading to poor enforcement (Lamm, 1994). The ineffectiveness of state-led legal intervention in OHS was evident in other countries but the response varied from country to country (Lamm, 2009). Most notably the U.K. responded with the enactment of *Health and Safety at Work Act* 1974 based on the 1972 Robens' Report.

Robens Model OHS Legislation and Self-Regulation Approach to OHS

The Robens' Model provides a single comprehensive OHS law to be administered by a single regulator, and transfers the responsibility of health and safety to the organisations by the means of joint employer employee participation (Lamm, 2010). The simple reason to enact this law was to shift the responsibility of day-to-day of health and safety and duty of care from the government to the employers where the risk originates in the first place (Pashorina-Nichols, Lamm and Anderson, 2017). Robens' Model also required considerable employee representation in workplace health and safety matters (Kiely & Langton, 1994; Walters,

2003), However, the academic scholars have critiqued the difficulties in implementing the essential elements that the Model requires for effective OHS practice: OHS legislation encouraging self-regulation in OHS practice in workplaces, effective workers' participation in workplace OHS activities, and appropriate OHS law enforcement (Bluff, Gunningham & Johnstone, 2004).

The critics argue that self-regulation to be successful requires certain conditions that the Model did not account for. For instance, Lamm and Walters (2004) emphasised that implementing self-regulation in small scale organisations is confronted with difficulties, particularly due to the absence of conclusive evidence of desirable performance by reducing occupational injuries. Further, Lamm (2009) asserted that successful self-regulation is dependent on the employers' discretion towards compliance with OHS law. Gunningham (2011) also argued that self-regulation is an effective approach for the large organisations having both the capacity and motivation to do so but not so much for the small organisations.

Moreover, the Model failed to consider that effective workers' participation requires OHS competence and capacity-building and supportive mechanisms for workers (Frick, 2004), that varies among different organisations. Walters (2004) claimed that attainment of autonomous workers' representation in OHS practice has become difficult with the decline in union activity and absence of effective alternate measures for protecting workers' interests. Similarly, the OHS law enforcement institutions regularly face the dilemma of balancing between persuasion and pressure strategies to effectively deter non-compliance without isolating organisations having good OHS track record (Johnstone, 2004). Notwithstanding the challenges involved in its implementation, the Robens Model had a remarkable international

impact on the way OHS began to be managed and practised soon after its introduction (Walters, 2003).

OHS Legislation Reforms

The Robens' Model was promptly adopted by many Australian states and this brought fundamental changes to the governance of OHS in these countries (Lamm, 2010). New Zealand, by contrast, took many years to enact a similar law, despite recommendations made by the Walker Report in 1981 and Advisory Council on Occupational Safety and Health (ACOSH) in 1988 for a complete legislative overhaul (Lamm, 2010; Pashorina-Nichols et al., 2017). It was in 1992 that Robens based *Health and Safety in Employment (HSE) Act 1992* was enacted that led to a legislative restructure of OHS in New Zealand.

Nonetheless, the legislation in policy and practice was considerably affected by the changes in employment relations framework in the country. The National Government, under compulsion to create free enterprise, passed the *Employment Contracts Act 1991* which cancelled OHS provisions set out in the industry and occupational awards. This Act also weakened the collective bargaining power of trade unions as the employees could now enter into individual contracts with the employers (Rasmussen et al., 2009). These developments diminished the influence of trade unions as reflected in certain provisions of HSE Act 1992. A case in point is the provision for employee participation in health and safety matters that needed to be mandatory for effective self-regulation[1] to take place. However, employee

[1] Self-regulation is defined as the controlling of a process or activity by the people or organisations that are involved in it rather than by an outside organisation such as the government (Gunningham, 2011). The author considers pure self-regulation and complete government regulation as two opposite ends of a continuum within which different degrees of co-regulation occur. The author considered co-regulation appropriate in OHS as it

participation was left to the employers' discretion in the HSE Act 1992, with no penalties for failure in health and safety duties, which further marginalised the unions' influence (Harris, 2004). It took 10 years to remedy the limitations of HSE Act 1992 by introducing amendments to the law which made employee participation in the OHS matters compulsory and aimed to protect collective bargaining rights and protection of workers (Harris, 2004; Lamm, 2010).

However, after the Pike River Coal Mine tragedy in 2010, the National-Coalition Government appointed the Royal Commission of Inquiry on the Pike River Coal Mine Tragedy (2012) to inquire into the cause of the accident. The Government also appointed the Independent Taskforce on Workplace Health and Safety (2013) to make recommendations for improving health and safety norms. The recommendations of these bodies brought a significant change to the OHS profession as discussed in the Section 1.1.2. below.

1.1.2. Current Status of the General OHS Profession in New Zealand

The Royal Commission of Inquiry on the Pike River Coal Mine Tragedy (2012) and the Independent Taskforce on Workplace Health and Safety (2013) provided a number of recommendations on creating a more robust and mature OHS profession (Schmidt-McCleave & Shortall, 2016). As part of the recommendations, WorkSafe was established as an independent regulator in 2013 and Health and Safety at Work Act (HSWA) 2015 was enacted.

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allows both organisational autonomy and considerable checks and balances from government in compliance with OHS law.

The Health and Safety Association of New Zealand (HASANZ) was also established as an umbrella OHS body in 2014, under which OHS associations of various OHS disciplines were represented (Peace et al., 2019). The primary aim of HASANZ is to build OHS workforce capabilities, to educate and enlighten organisations about their health and safety obligations, and to ensure a connection between the two (Peace et al., 2019). As part of this aim, HASANZ has released a *Health and Safety Workforce Pipeline Report* (2019) that has highlighted gaps existing in all the disciplines within the profession. In particular, the report has identified gaps in the availability and the implementation of the competency frameworks, education and training, and supply and demand within different OHS sub-disciplines.

New Zealand has also become one of the signatories to the *Singapore Accord* in 2017, in which the INSHPO Capability Framework was adopted (INSHPO, 2017a). This accord is a global commitment made by signatories to develop OHS to internationally agreed standards. The Capability Framework provides a *knowledge matrix* describing various OHS generalists' roles at both the professional and practitioner levels; the matrix includes levels of qualification, knowledge and skills required to fill various OHS positions (INSHPO, 2017a). The matrix is based on the Australian OHS Body of Knowledge (BoK) which illustrates core concepts that OHS generalists should be aware of in their respective roles (Health and Safety Professional Alliance, 2012). Although the Capability Framework was adopted in 2017, it is yet to be fully implemented by the various stakeholders including organisations and educational institutions in New Zealand (HASANZ, 2019; Peace et al, 2019). Given that the OHS stakeholder bodies such as HASANZ and NZISM have identified areas requiring attention in OHS profession, this study aims to explore the gaps and challenges described in Section 1.2.

1.2. The Need to Explore Gaps and Challenges to OHS

1.2.1. Significance of the Role of General OHS Professionals

As indicated above, the INSHPO Capability Framework which delineates various OHS professional roles is based on Australian OHS BoK. The Health and Safety Professional Alliance (HaSPA) of Australia (disbanded and replaced by Australian Safety and Health Professional Association (ASHPA) in 2013), the developer of the core OHS Body of Knowledge, defined the 'OHS professional' as someone who possesses a university level OHS qualification rather than only a vocational qualification. Although the term OHS professional represents both OHS generalists and OHS specialists, the BoK has made a clear distinction between them by considering OHS generalist as a distinct role in itself (Pryor, 2019b). While the OHS specialists have a high degree of knowledge in a specific discipline to solve specific problems within that domain (Pryor, 2019a), the practice of OHS generalists extend beyond the specific domains of specialist disciplines of OHS (Pryor, 2019b), which make them fit for advisory roles. The HaSPA has defined a generalist OHS professional as:

> One who applies multidisciplinary body of knowledge in a unique way to provide enterprises with advice on the organisational arrangements that will lead to the systemic and systematic management of OHS to prevent work-related fatality, injury, disease and ill-health. (Pryor, 2016, p. 5)

INSHPO Capability Framework has further bifurcated the role of OHS generalist into the general OHS *professional* and general OHS *practitioner* as the former is required to possess a university qualification while the latter acquires vocational training for practising in the field (INSHPO, 2017a). This study has focused on the general OHS profession and OHS generalists' workforce comprising both the general OHS professionals and general OHS practitioners referring them as 'OHS generalists'.

The OHS generalists play a crucial role to understand influences and drivers of change in the organisations, and to bring about positive changes in organisational culture (Borys, 2019). Various scholars have asserted that OHS generalists are required to act as change agents to uplift organisational safety culture and improve OHS management systems (Limborg, 2001; Olsen, 2020; Pryor, Hale & Hudson, 2019; Swuste & Arnoldy, 2003). Olsen (2012), in a study conducted on the role and impact of OHS generalists in the organisations in New Zealand, found that OHS generalists facilitated change in the organisations using multiple strategies. However, in most of these cases, the role was challenging, since the organisational expectations were limited to compliance with the OHS law, and hence, avoiding prosecution by preventing serious harm (Olsen, 2012). Mandate to self-regulate OHS practices in the workplaces put pressure on the organisations to hire competent OHS professionals to seek advice.

In New Zealand, HSWA 2015 makes organisations responsible for their own health and safety through joint employer-employee participation in OHS activities; the employers are expected to evaluate the required safety initiatives and implement them to comply with the law (Sirrs, 2015). However, Hudson (2003) argued, citing examples of an advanced safety culture practised in high-risk industries, that the organisations' use of safety approaches is influenced by their safety culture. The safety culture of an organisation is determined by the level of their knowledge about hazards and risks specific to their operations and their organisational goals (Hudson, 2001). It is understood that organisations having a less well-developed safety culture possess less knowledge of their organisation-specific risks and hazards and rely on advice from the competent OHS generalists regarding their health and safety obligations which makes the role of OHS generalists vital. However, the less well-developed organisational safety culture brings complexities to this role requiring them to

possess certain competencies to deal with the complexities involved as discussed in Section 1.2.2.

1.2.2. The Need to Map the Competencies Among the OHS Generalists

It is important to understand the functions and the roles OHS generalists perform in different organisations, to know the challenges inherent in their role and the competencies they require to overcome these challenges. Burlington and Griffiths (2020) recommended that OHS generalists should possess sound understanding of the operative dynamics of organisations, particularly their own organisation. This ability is even more significant given that OHS generalists operate on the periphery of the organisational hierarchy providing support and information at all hierarchical levels but having no authority of their own (Wybo and Wassenhove, 2015). OHS generalists engage a variety of strategies, such as regulation strategy, audit strategy and knowledge strategy to inform, communicate and educate different stakeholders and to enforce the OHS regulations for uplifting safety culture (Broberg & Hermund, 2004; Hasle & Sørenson, 2011; Olsen, 2012; Provan, Dekker & Rae, 2017). It can be argued that, by having an insight into the 'ways of functioning' of their organisation, the OHS generalists are able to modify their interactive style and strategies to influence different stakeholders.

Wybo & Wassenhove (2015) stressed that the increasing complexities of organisations has made it imperative for OHS generalists to possess multiple competencies including qualifications. Several scholars have asserted that a variety of competencies, soft skills and personal attributes are needed by OHS generalists to engage successfully (Blair, 2004; Hoffmann, 1999; Spencer & Spencer, 1993). Leemann (2005) provided a competency model

that described the specific competencies required by different types of OHS professionals. However, it is a general model that does not define the specific competencies required in the different positions in the OHS generalists' roles.

On the other hand, the INSHPO Capability Framework, which is based on the OHS BoK and adopted by New Zealand in 2017, provided a detailed illustration of the knowledge, skills and qualifications required for different OHS generalists' positions at professional and practitioner level but remains partially implemented in the country (INSHPO, 2017a). The HASANZ Pipeline Report informs that some academic institutions offer a variety of tertiary programmes in general health and safety but these are not fully aligned with any recognised competency framework (HASANZ, 2019). The Pipeline Report also advises that aligning education programmes with the Capability Framework is of utmost importance for new students if they are to understand what knowledge and skills each programme offers, and what they will gain by completing it (HASANZ, 2019). The same report also highlighted the future demand for OHS professionals as discussed in Section 1.2.3.

1.2.3. Need to Estimate the Demand for OHS Generalists

The HASANZ Pipeline Report (2019) has forecasted that, in addition to the existing 4,500 OHS professionals, 2,100 additional professionals will be needed by 2029. Given the high ratio of OHS generalists among all OHS professionals, it can be inferred that OHS generalists will be in demand in majority within the next 10 years. However, previous studies suggest that the current OHS professionals workforce has certain weaknesses that need to be addressed. This workforce is small in number, not very qualified and is ageing. For instance, the HASANZ Pipeline Report (2019) has stated the current OHS generalists' workforce

stands at 3,500 professionals of whom approximately 2,000 professionals are NZISM and NZSC members. The Pipeline Report (2019) also stated that only 5% of these members are certified members[2] accounting for only 3% of the general OHS workforce. In contrast, 28% of the U.K. general OHS workforce constitutes the chartered member category. The small proportion of certified members in the New Zealand OHS generalists' workforce projects a dismal picture compared with international standards.

Another example is the study conducted by Dobson (2018) to understand the profile of OHS professional workforce engaged in public sector in New Zealand. The author found that the majority of the professionals in the workforce are ageing, close to retiring from the workforce and that raises concern for meeting future replacement demand (Dobson, 2018). Interestingly, the study also found that the number of senior roles outnumbered junior entry-level roles, suggesting that very few new graduates are entering the field (Dobson, 2018). The author also noted that many professionals are not very experienced in OHS and that suggests there has been an influx of professionals from other disciplines, such as human resources, due to the high demand in the past few years (Dobson, 2018).

The previous findings cited above suggest that the demand for OHS professionals is high and is being met by unqualified or underqualified professionals, many of whom are practising as unregistered professionals – a loophole that needs to be plugged. The code of professional practice, such as registration of professionals qualified in accredited OHS courses, needs to be followed rigorously and OHS qualifications updated to meet international standards. Identifying the need for the generalists at various levels of the profession is essential to

[2] There are two categories for becoming a certified member of NZISM- Certified Professional and Certified Fellow. Both the categories have strict criteria to be followed by members including qualifications, OHS experience and significant contribution to OHS. (See detailed criteria in Table 1. of Chapter 2).

efficiently utilise the limited resources for determining training needs and creating qualifications based on competencies highlighted in INSHPO Capability Framework. Section 1.3. discusses in detail the purpose of undertaking this study.

1.3. Purpose of the Study

The HASANZ Pipeline Report provides an estimated demand for the overall OHS workforce. However, it did not identify the specific roles that will be required to be filled in the general OHS workforce. The report also did not separate the current demand for these roles from the future demand. Olsen (2012) made a notable contribution regarding the crucial role that OHS generalists play in New Zealand's organisations. The author concluded that OHS generalists facilitate positive change, improve safety management systems and manage stakeholders' attitudes and knowledge (Olsen, 2012). However, the study did not investigate what competencies OHS generalists require in their roles. Similarly, Dobson's (2018) study made significant revelations about the OHS workforce, such as the fact that the country's public sector OHS workforce is small, ageing and underqualified. However, the Dobson (2018) research was confined to the public sector.

The present study aimed to build on Olsen's (2012) and Dobson's (2018) work by comprehensively investigating competency gaps among general OHS professionals and capacity gaps in the growth of the general OHS profession. Challenges highlighted in the HASANZ Pipeline Report (2019) provided an impetus to conduct the current research. For instance, the obstacles faced in implementing the INSHPO Capability Framework remain unknown. Moreover, very few studies have explored stakeholders' perspectives on OHS as it

exists in New Zealand. The present study contributes to the OHS body of knowledge by exploring the diverse perspectives of a variety of stakeholders engaged directly and indirectly in developing the profession. The investigation progressively analyses and presents a holistic picture of the divergence in stakeholders' perspectives. It reveals the competency gaps, capacity gaps and barriers in the profession that policymakers and future researchers need to address if they are to develop the profession. Towards this end, the study had the following research questions, aims and objectives.

1.3.1.Research Questions

The broad research aim of this thesis is to assess the current status of the OHS profession and in particular that of the OHS generalists' workforce in New Zealand, and explore the gaps and challenges that act as obstacles on the developmental pathway. The five specific research questions that the study addresses are as follows:

1. What are the general features of the OHS profession in New Zealand?
2. Using the INSHPO Capability Framework, what are the current competency gaps across all levels of the general OHS profession?
3. What do current and future demand look like for general OHS professionals across all levels of the profession?
4. What are the current capacity gaps in the general OHS profession?
5. What are the current and future barriers to building a competent general OHS workforce, and how can these barriers be overcome?

1.4. Thesis Structure

The thesis has been arranged into eight chapters including the present chapter Introduction, and seven appendices containing additional, relevant information. The details of subsequent chapters are outlined below.

Chapter 2 examines the background of the OHS profession in New Zealand by exploring the factors that led to the origin and growth of the profession and the current features of the profession post-enactment of the HSWA in 2015. Also discussed are the recent initiatives of the most significant OHS stakeholder organisations such as WorkSafe, ACC, HASANZ and NZISM and its significance for demand side of the profession. The chapter discusses need for OHS training and qualification in the country and the various career pathways available for OHS generalists in terms of qualifications. The chapter concludes presenting different continuing professional development (CPD) opportunities available in the country focussing on CPD provided by NZISM.

Chapter 3 presents a review of the relevant academic literature describing issues concerning the multidisciplinary nature of OHS as a profession. The concept of the profession is analysed to bring out its meaning. Also discussed is the significance of the role played by OHS generalists, the strategies they use in the organisations. The qualifications and competencies required by OHS generalists are also explored. Suitability of importing Competency-Based Education model (Frenk et al., 2010) in OHS education is discussed along with analysing different CPD models. Various models of labour demand forecast are explored in the context of OHS. The chapter concludes considering Market Signalling method (Campbell, 1997; Wong, Chan & Chiang, 2004) under Professional Needs Approach suitable for estimating demand for OHS generalists.

Chapter 4 presents research methodology of this study. The rationale for the pragmatic research approach selected and the methodology employed in conducting the study is discussed. Research design is presented along with the rationale of using mixed methodology explaining suitability of conducting semi-structured interviews with OHS stakeholders and a quantitative survey of OHS generalists in New Zealand for this study. Data collection instruments are discussed. Later presented is the data analysis process using SPSS software for quantitative and NVivo software for qualitative data. Issues of validity and reliability of the research are discussed along with ethical considerations that conclude the chapter.

Chapter 5 presents the quantitative findings of the study. The findings based on the descriptive statistical analysis of demographic data, professional development data and perceived competencies of OHS generalists who participated in the survey are presented. The findings of this study strengthened the previous findings that OHS generalists' workforce is having gender equity but aging (Dobson, 2018). In contradiction to previous studies, around three-quarters of respondents reported high OHS experience and OHS qualification above Diploma Level 6. Most respondents considered themselves competent in different aspects of their roles. However, 80% of respondents worked in medium-large organisations indicating very low participation from OHS generalists in small organisations that may have presented a skewed picture.

Chapter 6 presents the qualitative findings in terms of stakeholders' diverse perspectives on the issues that formed research questions of this study. The themes are identified within the broad category of these issues. The categories are defined based on the research questions. The main themes relate to low organisational safety maturity, tick box approach to workplace health and safety, OHS generalists playing supportive role in improving organisational safety

culture but lack certain competencies. Demand for the OHS generalists is rising and indicated to rise in future before seeing decline. Lack of qualifications, particularly, at low NZQA levels, is major capacity gap that can be plugged with micro-credential OHS courses.

Chapter 7 discusses the most significant findings in relation to previously published academic literature on the issues confronting the current OHS profession, such as competency gaps among OHS generalists, demand and supply issues, and the capacity gaps. Results are compared with the findings of previous studies. The chapter highlights the implications of this work.

Chapter 8 provides a conclusion to the thesis, presents the contribution of the findings to the OHS body of knowledge, and offers recommendations for future researchers and stakeholders. Limitations of the current study in terms of small sample, time and resource constraints are also described.

1.5. Chapter Summary

This chapter has provided a brief description of the evolution and the current status of the OHS profession in New Zealand. The need to understand the gaps and challenges confronting the OHS profession was discussed. The significance of the role that OHS generalists play in organisations and the competencies they require was also highlighted. The purpose of the study was outlined. This study aims to understand how the domestic OHS profession functions highlighting competency gaps for OHS generalists, exploring capacity gaps in the profession, and defining demand for OHS generalists. Finally, the chapter traced the structure of the thesis by outlining the content of each chapter.

Chapter 2 discusses the background of OHS in New Zealand, emphasising the factors that played role in the evolution and development of the profession. The current features of the profession, recent initiatives of the stakeholder organisations along with present qualification framework are discussed.

Chapter 2: Background of the Study

2.1. Introduction

After the Pike River Coal Mine tragedy in 2010 that claimed lives of 29 miners, a comprehensive reform within the OHS profession in New Zealand was acknowledged as essential to providing safe workplaces. A new enforcement agency was created, WorkSafe, and new legislation introduced: Health and Safety at Work Act 2015. The Act broadened the definition of organisations covered under the Act by introducing the term 'PCBU', and expanded the term 'worker' thus including more potential categories of employment. The Act also sought to foster expertise in OHS and provided the mandate for WorkSafe to secure compliance through effective enforcement measures and the professional organisations to provide advice, information, education and training in relation to OHS.

In 2017 New Zealand became a signatory to the landmark Singapore Accord and adopting the INSHPO Capability Framework; a guiding document aimed at creating competent workforce of OHS generalists in member countries (INSHPO, 2017a). The implementation of the framework is, however, still facing barriers. These barriers were recently documented in the Health and Safety Workforce Pipeline Report (2019) published by HASANZ. The report highlighted three critical challenges concerning OHS generalists:

- the implementation of the competency framework
- the demand for competent general OHS professionals and
- an education and training pathway.

In the context of the latest developments as outlined above, this chapter provides an overview of the origin and evolution of the OHS profession, examining how it has gone through several

phases of the reforms that have brought it to its present form. This chapter also outlines the measures taken by OHS peak bodies[3] and stakeholders to provide a structure for the profession, which has helped to shape the field of OHS in this country. In particular, it discusses the nature and size of the PCBUs in the country, the challenges they face and the role that OHS generalists play in overcoming these challenges. Finally, it examines the current OHS qualification framework and CPD initiatives in New Zealand. Section 2.2. discusses the factors leading to the origin of the profession in the country.

2.2. Evolution of the OHS Profession in New Zealand

To understand the status of the OHS profession, it is pivotal to review the contextual factors that led to its evolution and growth. Origin and development of OHS in New Zealand has been shaped primarily by two elements. The earliest and the most dominant influence was the arrival of European settlers during the early 19th century who brought their customs, attitudes and laws to the country (Chelliah & Mukhi, 2004). New Zealand experienced its own industrial revolution when the British settlers began self-employment in coal mining, forestry, farming and dairy (Peace et al. 2019). The earliest New Zealand employment relations formed under the country's English Laws Act 1858 that did not provide for any form of employee protection (Chelliah & Mukhi, 2004; Rasmussen et al., 2009). Thus, the second influence for OHS to develop was the absence of employment relations framework

[3] *Peak body* is an Australian term, defined by Melville and Perkins (2003) as "a non-government organisation whose membership consists of smaller organisation of allied interests. The Peak body thus offers strong voice for the specific community sector in the areas of lobbying government, community education and information sharing between member groups and interested parties." There are several OHS peak bodies in New Zealand that are invested in developing the profession, namely, Health and Safety Profession of New Zealand (HASANZ), Employers' and Manufacturers' Association (EMA), Business Leaders' Health and Safety Forum (BLHSF) WorkSafe and Accident Compensation Corporation (ACC), among others. The peak bodies, ACC AND HASANZ are discussed in detail in Section 2.3.

that led to widespread worker exploitation (Rasmussen & Lamm, 2002). For instance, twelve or more hours of work every day with no provision for rest breaks or holidays was a norm (Chelliah & Mukhi, 2004). The increased advocacy for workers' rights due to worsened working conditions led the Government to enact the Victorian-style Employment of Females Act in 1873. However, because of the lack of enforcement, it did little to improve conditions of women and children (Rasmussen et al., 2009). The prolonged economic depression during the 1870s further worsened the workers' condition which culminated in the Maritime Strike in 1890 (Merrett, 1969).

Though the strike was a failure, the community pressure for government involvement in employment relations mounted (Merrett, 1969). Countrywide anti-sweating campaigns also garnered public support for government intervention (Anderson & Quinlan, 2008). Consequently, the newly elected Liberal Government enacted the landmark Industrial Conciliation and Arbitration (IC&A) Act 1894 that established formal hierarchical structure for employer–employee grievances through district-based conciliation boards and the arbitration court (Merrett, 1969; Rasmussen et al., 2009). This legislation accorded trade unions the power to negotiate with employers but placed restrictions on direct action, such as strikes (Rasmussen et al., 2009). The government also established the Royal Commission (famously called the Sweating Commission) in 1890 to investigate the extent of worker exploitation (Lamm, 2009). The Commission's recommendations led to the enactment of a number of similar Acts, including the Factories Act 1891 and 1894, and the Shop and Shop-assistants Act 1894. However, these Acts followed the U.K.'s reactive OHS law making tradition and were prescriptive, specific and focussed on the shop floor workers, primarily women and children, that only managed to provide minimal relief (Lamm, 2009).

Notwithstanding with the earlier statutes, New Zealand continued to pass several OHS statutes reacting to industry specific incidences (Lamm, 1994). Consequently, the OHS law grew indiscriminately and incoherently and by the 1980s it became too complex (Lamm, 2009). Further, as pointed out previously, the OHS legislation focussed on certain groups (for example, the OHS laws omitted to cover public servants) of workers and specific hazards in particular occupations and industries and prescribed specific controls that became obsolete with technological progress (Lamm, 1994). Wren (1996) claimed that the legislation had paternalistic provisions because it primarily focused on women and children and was inflexible in the way it operated. Section 2.2.1. discusses the administration of OHS law and development within it in the country.

2.2.1. Administration of OHS Legislation

The initial OHS law were administered by different government departments through inspectors (Lamm, 1994; Peace et al., 2019). The number of small and medium scale factories reached thousands by 1900 while the OHS inspectors were limited and thus many factories operated without regular OHS inspection. The early inspectors were not only inadequate in number but they were also not specifically trained into OHS rather having qualifications relevant to their industries (Peace et al., 2019). Consequently, the poor inspectorate performance and the need for OHS-specific training and qualifications for inspectors was highlighted in Davidson's (1945) and Hare's (1946) reports.

Subsequently, several OHS specialists such as in occupational health and occupational hygiene began to perform OHS functions through the government departments and a structure of minimum required qualifications was established. The need for increased

collaboration among the OHS practitioners led to the establishment of an independent New Zealand Institute of Industrial Safety in 1975, now known as NZISM that established qualifications and experience criteria for the members. Despite the qualification requirements, many OHS practitioners were unqualified and followed compliance approach to OHS while trade unions played a dominant role in safety aspects of the work (Beek et al., 1995). Nonetheless, the OHS professionals migrating from the U.K. were often qualified who introduced standard OHS practices in the workplaces (Peace et al., 2019).

The OHS qualification and training requirements were made statutory requirement in the country only after the amendments were made in 2002 to the Robens Model based HSE Act 1992. The reason for the delay in reform was the country's focus on compensation for injuries instead of injury prevention. In the 1970s and 1980s, while other countries such as the U.K. and Australia enforced Robens-style legislation, New Zealand focussed on establishing a no-fault worker compensation scheme in the 1970s. Section 2.2.2. discusses the establishment and growth in ACC over the years.

2.2.2. Woodhouse Report and Establishment of ACC

The British style *Workers' Compensation for Accidents Act* 1900, enacted as a response to the Brunner Mine disaster in 1896, was the first state action for compensating workplace injury victims or their families. However, the legislation was limited on account of covering only workplace injuries and eventually became obsolete because it kept motor vehicle injuries outside its purview (Lamm, 2009). The enactment of the *Accident Compensation Act* in 1972 and the subsequent establishment of ACC was an outcome of the *Woodhouse Report* in 1967, set up to address these inadequacies. The Report recommended compensatory arrangement

covering not only the occupational injury but also personal injury, which has become a salient feature of this scheme (Clayton, 2003). The Act provided blanket coverage to individuals for compensation through its threefold scheme- *earners' scheme*, *motor vehicle accidents scheme* and the *supplementary scheme* (Lamm, 2009).

However, because of its focus lying on compensation to the victims instead of injury prevention, the compensation and production losses on account of workplace injuries was amounting to millions of dollars annually and proved to be a big financial burden on the government (Kiely & Langton, 1994; Lamm, 1992). Moreover, employers were growing discontented owing to the rising amount of compensation as the OHS law was ineffective in reducing workplace injuries, particularly in hazardous industries, and they were required to contribute towards claims for non-work-related injuries also (Lamm, 2009). As a result, in the subsequent legislations, the *Accident Compensation Act* 1982 and the *Accident Rehabilitation Compensation Insurance Act* 1992, ACC began to reduce compensation by narrowing provisions for compensation eligibility. ACC has focussed on injury prevention and the rehabilitation of claimants after the passage of the *Injury Prevention Rehabilitation and Compensation Act* of 2001 repositioning it as a social programme (Lamm, 2009). The first statutory reforms are discussed in the Section 2.2.3.

2.2.3. OHS Statutory Reforms I

The mounting financial burden on ACC in 1970s compelled the Government to review the OHS law in 1980 and consider overhauling health and safety legislation, resulting in the Walker Report (Kiely & Langton, 1994; Lamm, 1992). The Walker Report (1981) recommended adopting the Robens-style legislative approach in New Zealand which initiated

many political debates and consultations (Schmidt-McCleave & Shortall, 2016). Consequently, the Advisory Council for Occupational Safety and Health (ACOSH), a tripartite group represented by employers, trade unions and Occupational Safety and Health (OSH) Service in the Department of Labour was established in 1988. ACOSH representatives recommended statutory reforms by introducing a single Act under a single authority and providing for workers' participation in health and safety activities through a Voluntary Code of Practice (Lamm, 1992).

Other developments affected the outcome of the upcoming *Occupational Safety and Health Bill* (OSHB) 1990. The passage of Employment Contracts Act 1991 ended the century old conciliation and arbitration system and introduced individual employment contracts that curtailed the collective bargaining power of the trade unions and diminished their power. *More importantly, it cancelled OHS provisions set out in the industry and occupational awards* that severely curtailed trade unions' ability to train OHS representatives (Rasmussen & Lamm, 2002; Rasmussen et al., 2009). Further, the employer representatives in ACOSH were reluctant to allow worker representatives the right to cease work, and for trade unions to participate in elections and training of worker safety representatives (Lamm, 1992). With the non-interventionist philosophy introduced by the newly elected National Government, the OSHB could not be passed in the parliament in its original form, making way for Health and Safety in Employment Act (HSE) 1992 as its weak replacement (Wren, 1996).

Although the HSE Act 1992 was comprehensive, its execution encountered a myriad of problems. First, employee participation and representation in OHS was not a statutory requirement but at the employer's prerogative (Harris, 2004; Lamm, 2010; Wren, 1996). Campbell (1992) expressed concern that this Act did not give statutory provision for joint

health and safety committees and employee H&S representatives, considering it a regressive step. Second, the HSE Act gave no due consideration to employers' and employees' health and safety training and knowledge despite shifting OHS responsibility on them (Royal Commission of Inquiry on Pike River Coal Mine Tragedy, 2012). Third, the HSE Act did not cover all workers and left a significant proportion of the workforce out of the purview of the legislation (Schmidt-McCleave & Shortall, 2016), particularly the workers operating in air and rail sectors, and did not recognise work stress and fatigue as potential hazards to the workers (Lamm, 2009). Last, many public sector organisations were not liable for prosecution towards OHS negligence while workers in certain sectors such as air and rail were not included in the Act (Lamm, 2009). Section 2.2.4. explains how the problems in the HSE Act 1992 were resolved through amendments.

2.2.4. OHS Statutory Reforms II

The *HSE Amendment Act* 2002 was introduced by the Labour-Coalition Government to redress the shortcomings of the previous legislation by including provisions to protect employees and ensure their collective bargaining rights. A significant change introduced by the HSE Amendment Act was the statutory provision of employee participation by making it mandatory for the employers to elect and provide for training of Health and Safety Representatives (HSRs) and set up Health and Safety Committees (HSCs) if the organisation had more than 30 employees (Lamm, 2010; Olsen & Harris, 2015). Consequently, NZCTU began extensive HSRs training in 2003 (discussed in detail in Section 2.5.1.) providing training to around 6000 HSRs on an annual basis (Lamm, 2010).

The Labour-Coalition Government also appointed the National Occupational Health and Safety Advisory Committee (NOHSAC) in 2003 for providing independent advice to the then Labour Minister on significant health and safety matters in the country (Auckland University of Technology, n.d.). The Committee produced several comprehensive reports over the years to inform important OHS policy issues concerning workers. Further, keeping with its ideology that better collaboration and participation among employees leads to higher productivity, the Labour-Coalition Government also took several initiatives for increased employee participation in organisations. For instance, Partnership Resource Centre (PRC) was established in Department of Labour in 2004 to improve collaboration between employers and trade unions (Delaney & Haworth, 2016).

Despite these measures, the performance of the departmental OHS inspectors remained questionable. For instance, not only the number of OHS inspectors reduced from 317 in 1988 to 130 by 2008 but they also lacked required expertise (Lamm, Rasmussen & Anderson, 2013). It was the Pike River Coal Mine explosion in 2010 in which 29 miners lost their lives, that compelled the National-Coalition Government to set up a Royal Commission of Inquiry on Pike River Coal Mine Tragedy in 2012 to look into the causes of the explosion. The Commissions' findings revealed incapacitated inspectorate in terms of knowledge and numbers of inspectors. The mining inspectors, in particular, focused on quota completion rather than ensuring compliance through regular inspections (Lamm et al., 2013).

The Government also appointed an Independent Taskforce on Workplace Health and Safety in 2013 to undertake a comprehensive review of New Zealand's OHS legislation. The findings of the Taskforce divulged that the Act was not being implemented properly due to the weak regulator and insufficient training for inspectors, inadequate worker engagement

and representation in OHS by employers, and a multitude of challenges faced by SMEs. The key finding was that the HSE Act was not fit for purpose. The Taskforce recommended enacting new comprehensive legislation to redress the shortcomings of the HSE Act 1992 and establishing a new robust regulator – as the primary regulator and Civil Aviation Authority and Maritime NZ as designated agencies. The reforms resulting from the recommendations of these bodies are discussed in Section 2.2.5.

2.2.5. OHS Statutory Reforms III

Based on the recommendations of the Independent Taskforce on Workplace Health and Safety in 2013, the Health and Safety at Work Act (HSWA) was enacted in 2015. The HSWA 2015 is a comprehensive legislation, the tenets of which are based on the Australian Act, the Work Health and Safety Act, 2011. As this legislation is based on Robens Model, self-regulation of workplace health and safety through workers' and management's shared effort is a distinguished feature of the HSWA 2015 (Pashorina-Nichols et al., 2017). However, a number of improvements are made that set HSWA 2015 apart from the HSE Act 1992 (Schmidt-McCleave & Shortall, 2016). The HSWA 2015 has expanded the applicability of term "employer" by replacing it with "persons conducting a business or undertaking" (PCBUs) (Pashorina-Nichols et al., 2017). The PCBUs include not only profit-seeking but also not-for-profit organisations. Similarly the Act broadened the meaning of term 'workers'[4] to include trainees, volunteers, students on work experience, contractors and sub-contractors and outworkers. The Act has removed ambiguities regarding the meaning of certain terms such as 'workplace', 'supply', 'officers'. It has included and explained terms

[4] Health and Safety Act 2015, s 19

'notifiable injury/illness' and 'notifiable incident' and clearly defined the scope of such terms that was missing in the previous legislation.

Further, the Act emphasised joint employer-employee participation in regulating workplace health and safety by making it a statutory responsibility of organisations[5]. While under HSE Act 1992, trained HSRs could issue only hazard notices to employers, a trained employee HSRs under HSWA 2015 can statutorily direct cessation of unsafe work. HSWA 2015 contains clauses mentioning the election, training processes of the HSRs and appointment of HSCs.

The Health and Safety at Work (Worker Engagement, Participation and Representation) Regulations 2016 provided for mandatory employee participation through HSRs and HSCs who are given considerable powers under this legislation. For example, the HSRs can request the management for any health and safety related information, can inspect a workplace and can issue Provisional Improvement Notice (PIN) to remedy an unsafe act or direct a worker to cease an unsafe work. *However, the HSRs can exercise these powers given that they are appropriately trained* (discussed in detail in Section 2.5.1.) as specified in the Health and Safety at Work (Worker Engagement, Participation and Representation) Regulations 2016, cl 21). The HSCs, on the other hand, provide a platform for the workers and management of the organisation to discuss health and safety issues. Thus, the HSWA 2015 has strengthened the regulatory powers of workplace OHS representatives (Schmidt-McCleave & Shortall, 2016). Section 2.3. discusses the role various stakeholder organisations are playing towards the growth of the profession.

[5] Health and Safety Act 2015, s 58

2.3. Major OHS Stakeholder Organisations in New Zealand

2.3.1. WorkSafe New Zealand

The WorkSafe was established through the *WorkSafe New Zealand Act* 2013 as an autonomous regulator. While the MBIE plays an advisory role in OHS policy making and developing strategies, WorkSafe enforces the legislation, namely the Health and Safety at Work Act 2015. The WorkSafe was established to provide a strong regulator that can not only enforce the law effectively but can engage with several stakeholders in developing the profession and support the employers in building their health and safety capabilities.

Having a strong regulator is considered an essential element for the successful implementation of the Robens Model. However, the Department of Labour as an OHS regulator in New Zealand became weaker since the enactment of HSE Act 1992. Therefore, the inception of WorkSafe was an outcome of the Royal Commission of Inquiry on Pike River Coal Mine Tragedy's finding that the Department of Labour was failing as a regulator due to lack of training, resources and political support. For instance, not only were the number of inspectors reduced from 317 in 1988 to 130 by 2008 but they also lacked required expertise (Lamm et al., 2013). The inquiry also revealed that insufficient and incompetent mine inspectors were entrusted with the responsibility of enforcing mine safety regulations (Royal Commission of Inquiry on Pike River Coal Mine Tragedy, 2012). Thus, the weak inspectorate created an urgent need to develop a strong and competent OHS professional workforce.

The National-Coalition Government, therefore, merged the then Department of Labour into the newly formed Ministry of Business Innovation and Employment (MBIE) in 2012 and

established WorkSafe as an independent regulator on the recommendation of the Independent Taskforce. WorkSafe is augmenting its own capabilities by increasing the number of field inspectors. Ministerial Services, Business, Performance and Modernisation[6], WorkSafe (October 14, 2021) in personal communication informed that presently 174 WorkSafe inspectors are operative while 28 trainee inspectors were undergoing training in various aspects of HSWA 2015 and other inspectorial responsibilities.

As pointed out earlier, WorkSafe enforces the HSWA 2015, the Electricity Act 1992 and the Gas Act 1992. WorkSafe's regulatory functions include undertaking workplace assessments, audits and investigations. While the assessments and audits were stable, the number of investigation and infringement notices has continuously declined in the period 2016-2020 (WorkSafe New Zealand, 2020a). Though the reduction in investigations is cited as an impact of Covid 19-led physical lockdowns, it is evident that WorkSafe was inadequately staffed to respond to all Covid 19 related inquiries – a resource gap that needs to be addressed. Besides law enforcement, WorkSafe plays a significant role in educating and engaging with PCBUs and partnering with other key stakeholder agencies such as ACC to foster growth in the OHS profession. WorkSafe, in collaboration with ACC, has launched the Harm Reduction Action Plan in 2019 under which the injury prevention programmes have been developed; both sector-specific and focussing on common health issues across the various sectors (WorkSafe New Zealand, 2019a).

In addition, WorkSafe, ACC and MBIE collaborated in designing and testing the *Safety Star Rating Pilot Initiative* in 2015 with the aim to assist the New Zealand organisations in improving their health and safety performance (WorkSafe New Zealand, 2017b). It

[6] WorkSafe has not provided this information in its Annual Report 2019/2020.

culminated into *SafePlus* in 2017, an online educational toolkit for helping the businesses improve their health and safety performance by providing them tailor-made solutions based on their risk profile, unique working operations, safety maturity and environment (WorkSafe New Zealand, 2021). Moreover, WorkSafe and ACC also supported NZISM and HASANZ in their initiatives by funding the development of websites, funding their separate accreditation schemes and the expansion of their reach into the OHS profession (Peace et al., 2019).

WorkSafe is also playing a significant role in carrying out a comprehensive evaluation of the OHS profession in New Zealand. The project funded by WorkSafe has been undertaken by both HASANZ and NZISM which have published reports pertaining to the status of the profession in the country. While HASANZ's *Building the Professions Pipeline Report* published in 2019 (discussed in Section 2.3.3.) covers most of the sub-disciplines of the profession, NZISM has dedicated itself in researching the status of general OHS profession. In Phase I of the project, NZISM has published the report *Pathways to Professional Accreditation* in 2020 showcasing the tertiary OHS qualifications available in the country (Young, 2020). Thus, WorkSafe plays a collaborative role with HASANZ, NZISM and other organisations in addressing the challenges highlighted in the reports (WorkSafe New Zealand, 2020b). For instance, WorkSafe is involved in developing New Zealand-specific competency framework for OHS generalists and accordingly is in the process of reviewing present OHS qualifications for OHS generalists (WorkSafe New Zealand, 2020b). Therefore, WorkSafe has also funded the WorkSafe New Zealand Chair appointed in School of Health at Victoria University of Wellington for five years commencing from 2019 (WorkSafe New Zealand, 2019b). The Chair is an academic position to provide health and safety leadership and build strong multi-stakeholder relations (Victoria University of Wellington, 2019).

2.3.2. Accident Compensation Corporation (ACC)

As discussed earlier, ACC has made significant progress from having a functional resemblance to an insurance agency in its function of victim compensation in the 1970s to its current involvement in providing support to employers in augmenting their injury prevention capacity (Lamm, McDonnell & St John, 2012). Apart from providing compensation and rehabilitation, ACC began performing a facilitative role towards organisations by incentivising them to prevent workplace injuries along with WorkSafe. At present, ACC is functioning under the *Accident Compensation Amendment Act* that was brought into force in 2010, aiming at flexibility and better dissemination of information by government agencies (ACC, 2018).

ACC's Incentives Programmes

ACC is running several incentive-based programmes under its *Safer Workplaces* workstream to encourage employers to improve workplace health and safety practices and reduce workplace injuries (Allen & Clarke Policy and Regulatory Specialists Ltd, 2006; Lamm et al., 2012). The key programmes within this workstream include:

- ACC Accredited Employer Partnership (AEP) Programme
- Workplace Safety Evaluation
- The Workplace Safety Discounts Programme
- Workplace Safety Management Practices

While the Accredited Employer Partnership (AEP) Programme aims at reducing claim costs by incentivising very large employers to adopt good health safety practices by reducing ACC levies, the Workplace Safety Evaluation programme focuses on monitoring employers having higher than average claim rates for workplace injuries that often involves small organisations (Lamm et al., 2012). These programmes have received support from key stakeholders who consider them effective for safer workplaces and the assessment criteria have also improved (Gallagher Bassett, n.d.). The OHS professionals and employee HSRs play a critical role in implementing these programmes as the employers are encouraged to take responsibility of workplace health and safety and injury management. The ACC discontinued its Workplace Safety Discounts Programme targeting high-risk industries, and the Workplace Safety Management Practices which targeted large and medium sized employers as these were not effective in reducing the injury claims and not aligned with HSWA 2015 to build organisational capacity in self-regulation (Dabee, 2017).

As part of supporting the growth of OHS profession, ACC together with WorkSafe, has also funded the HASANZ register established in 2018 to assist organisations seeking competent OHS professionals. Further, ACC, in collaboration with HASANZ, has also designed Workplace Injury Prevention Subsidies, launched in 2019, to help small to medium organisations operating in the manufacturing and construction sector pay for health and safety professional and advisory services from a HASANZ-registered professionals (ACC, 2021a; ACC 2020). The businesses which are able to provide an *action plan* and *improvement activity reports* from the HASANZ-registered OHS advisors will be eligible for the subsidy (ACC, 2021a; ACC, 2020). Its other most recent initiative is Workplace Injury Prevention Grants for organisations, industry groups, or professional bodies that act as agents of change for devising innovative health and safety solutions (ACC, 2021b).

ACC's Experience Rating Scheme

ACC also reintroduced its Experience Rating Programme (ERP) in 2011, though its previous attempts at experience rating remained unsuccessful as they provided little incentive to the employers to improve safety (Lamm et al., 2012). Employers under the ERP are entitled to a certain percentage of discount or liable to pay *loading*, calculated on the previous three years of claims data and accident frequency (Lamm et al., 2012) However, it is a quantitative approach that uses the indirect measures of organisational safety such as reported accident frequency or claims data that can be manipulated to claim rebates (Thomason & Pozzebon, 2002). The employers tended to distort the actual number of accidents or claims for rebates, failing the very purpose of the programmes to improve workplace safety (Lamm et al., 2012).

Such quantitative approach incentivises the absence of accidents while penalises their reporting that encourages the elimination of evidence of near misses and accidents (Frederick and Lessin, 2000). Several authors have argued that the experience rating treats OHS as a commodity as it focuses on the economic aspects of the initiative. In contradiction, HSWA 2015 considers participative health and safety management a core value of OHS practice under which it seeks active employee consultation and representation in all OHS matters. It focusses on qualified OHS professionals and HSRs playing a significant role in modifying organisational OHS behaviour and improving its safety culture to proactive OHS management (Dabee, 2017; Lamm et al., 2012). Section 2.3.3. explains the mandate and initiatives of HASANZ as a key OHS stakeholder.

2.3.3. Health and Safety Association of New Zealand (HASANZ)

As discussed earlier, in 2013 the Independent Taskforce on Workplace Health and Safety identified a lack of consistent standards and competencies in OHS which had led to sub-standard advice to some organisations. The Independent Taskforce also acknowledged that small organisations struggle to find competent health and safety professionals. Therefore, it recommended setting up the Health and Safety Association of New Zealand (HASANZ) in 2014 and dismantling the earlier Occupational Health and Safety Industry Group (OHSIG). HASANZ acts as the umbrella organisation for a range of individual associations representing OHS sub-disciplines:

- health and safety generalists
- hazardous substances specialists
- occupational hygienists
- occupational health nurses
- human factors and ergonomists
- occupational therapists and
- occupational health physiotherapists.

HASANZ was established with the specific objectives of augmenting the supply of competent OHS professionals and practitioners, educating industries about their commitments to health and safety and forging a connection between the two (Peace et al., 2019). In keeping this aim, HASANZ established a national online register of OHS professionals in 2018 with funding received from ACC and WorkSafe. The aim of the register was: (1) to provide a platform where organisations can seek expertise pertinent to their specific health and safety issues, and (2) to ensure a consistent and continuous supply of

verified and competent professionals. Apart from maintaining the register, HASANZ also launched a HASANZ Scholarship Programme in 2018 which provides academic scholarships to advance education in workplace health and safety towards building a capable and competent OHS workforce (HASANZ, n.d.).

HASANZ released a comprehensive stocktake report in 2019, *Building the Professions: Health and Safety Workforce Pipeline Report* that reviewed the status of the OHS profession in New Zealand and identified areas for improvement in each sub-discipline of the profession. The report identified meeting present and future demand as one of the critical challenges in the general OHS profession. The report estimated that New Zealand's OHS workforce at present is approximately 4,500 professionals and forecast a future demand for an additional 2,100 OHS professionals by the year 2029 (HASANZ, 2019). The current number of OHS generalists stands at 3,500; a large proportion of the total OHS workforce of 4,500 (HASANZ, 2019). However, the report does not clarify the specific roles and positions of OHS generalists that will be in demand in the future. Estimating the required roles for OHS generalists is desirable for determining training needs and launching appropriate qualification programmes based on international competency standards.

The report further highlighted that fewer than 100 OHS generalists were certified members of NZISM and NZSC. The ratio of certified members to total OHS workforce is approximately 3% in New Zealand, which is extremely low by international standards. For instance, a similar comparison of the U.K.'s membership numbers, shows that nearly 28% of its total OHS generalists' workforce are chartered members of Institute of Occupational Safety and Health (IOSH) (HASANZ, 2019). New Zealand would need to certify around 920 OHS professionals to attain the standards achieved by the U.K.'s OHS generalists'

workforce. Increasing certified members in New Zealand from 100 to 920 would also require a well-calibrated strategy for members to meet the criteria required for obtaining certified status in the associations, NZISM and New Zealand Safety Council (NZSC). These are discussed below.

2.3.4. New Zealand Institute of Safety Management (NZISM)

The New Zealand Institute of Safety Management (NZISM) governs the membership of generalist OHS professionals based on their credentials, qualifications and experience (Peace et al., 2019). The NZISM has made considerable progress since its inception and its current membership is approximately 2,000 professionals (HASANZ, 2019). An accreditation programme was augmented by the NZISM in 2015 in consistency with the Australian OSH BoK on the basis of which the INSHPO Capability Framework has developed position profiles of various professional and practitioner roles (Pryor, 2019a). In 2018, the NZISM Grading Panel improved its accreditation criteria by changing the way required credits were measured for graduates to become a NZISM member. The measurement criterion based on percentage of OHS content required in any qualification disadvantaged many tertiary qualifications that offer only a few OHS related papers. NZISM changed the criterion to 90 credits OHS content irrespective of the qualification if it is at or above diploma level 6 thus expanding the criteria for many students having tertiary qualifications (NZISM, 2018a).

NZISM also contributed to drafting the INSHPO Capability Framework and adopted the Singapore Accord in 2017, committing to implement the Global Framework in the country. Currently the NZISM uses the Capability Framework as a benchmark of competencies and capabilities and grades its members on the basis of qualifications and relevant experience, as

shown in Table 2.1 (Peace et al., 2019). As indicated earlier, NZISM, in collaboration with HASANZ, has undertaken a comprehensive review of the OHS profession in New Zealand including the OHS qualifications available in the country. Phase II of the project includes a comprehensive analysis of the content and course outcomes of all these qualifications to offer better choices for potential OHS students and provide a platform for OHS course providers to collaborate on issues of interest[7]. NZISM is also working towards holding open networks such as Women in Safety Excellence (WSE) and Emerging Safety Leaders (ESL) to enable the representatives to discuss issues, challenges and successes within the wider networks. A competency framework dedicated to the HSRs is also under progress to delineate the skills, knowledge and attributes effective HSRs require. Further, NZISM also conducts several CPD courses and sessions, CPD webinars.

Table 2.1. Pathways to NZISM Professional Membership

Student	Affiliate	Practioner	Professional	Certified Professional	Certified Fellow
		PractNZISM	ProfNZISM	CertProfNZISM	CertFellNZISM
Open to anyone enrolled with a tertiary education provider and participating in either: • full-time OHS study, OR • part-time OHS study with a minimum of 60 credits on a course from the list of qualifications recognised for student membership.	No qualifications or experience is necessary. This category is open to anyone who is interested or involved in OHS or those who have yet to attain a health and safety role.	Both qualification and experience requirements must be met. **Qualifications** An OHS qualification to NZQA Level 4 or any other qualification that NZISM assesses as meeting the criteria. **Experience** Member must demonstrate 2,000 hours of OHS practice in the last 3 years.	Both qualification and experience requirements must be met. **Qualifications** A completed qualification from ONE of the below: • An OHS or cognate qualification at a minimum Level 6 Diploma (or international equivalent) with a total of 90 credits in OHS related subjects. • A Level 8 OHS Graduate or Post-Graduate Certificate. • A qualification accepted at Graduate level by IOSH. **Experience** Member must demonstrate 4,000 hours of OHS practice in the last 5 years.	**Requirements** • Minimum of 2 years at Professional level with formal CPD maintained via myCPD. • Skills Development Portfolio. • Peer Review Interview.	**Requirements** • A minimum of 5 years as an accredited member. • Significant contribution to the New Zealand OHS industry and/or NZISM.
myCPD Optional	myCPD Optional	myCPD Compulsory	myCPD Compulsory	myCPD Compulsory	myCPD Compulsory
HASANZ Register Not eligible	HASANZ Register Not eligible	HASANZ Register Not eligible	HASANZ Register Eligible to apply for listing	HASANZ Register Eligible to apply for listing	HASANZ Register Eligible to apply for listing

Source. Young (2020, p.4)

[7] In personal communication with Selena Armstrong, NZISM (1st December 2021).

2.3.5. New Zealand Safety Council (NZSC)

NZSC is the foundation member of HASANZ, itself established in 2002 with the aim of promoting best practice in health and safety management and environmental protection (New Zealand Safety Council, n.d.a.). NZSC collaborates with several stakeholders such as local community, businesses, educational institutions stakeholders to inform policies, issues and practices and liaise with key people in community, government and media to discuss health, safety and environmental issues of significance (New Zealand Safety Council, n.d.b.). Section 2.4. discusses the significance of the recent initiatives taken by the stakeholder organisations in the context of New Zealand organisations.

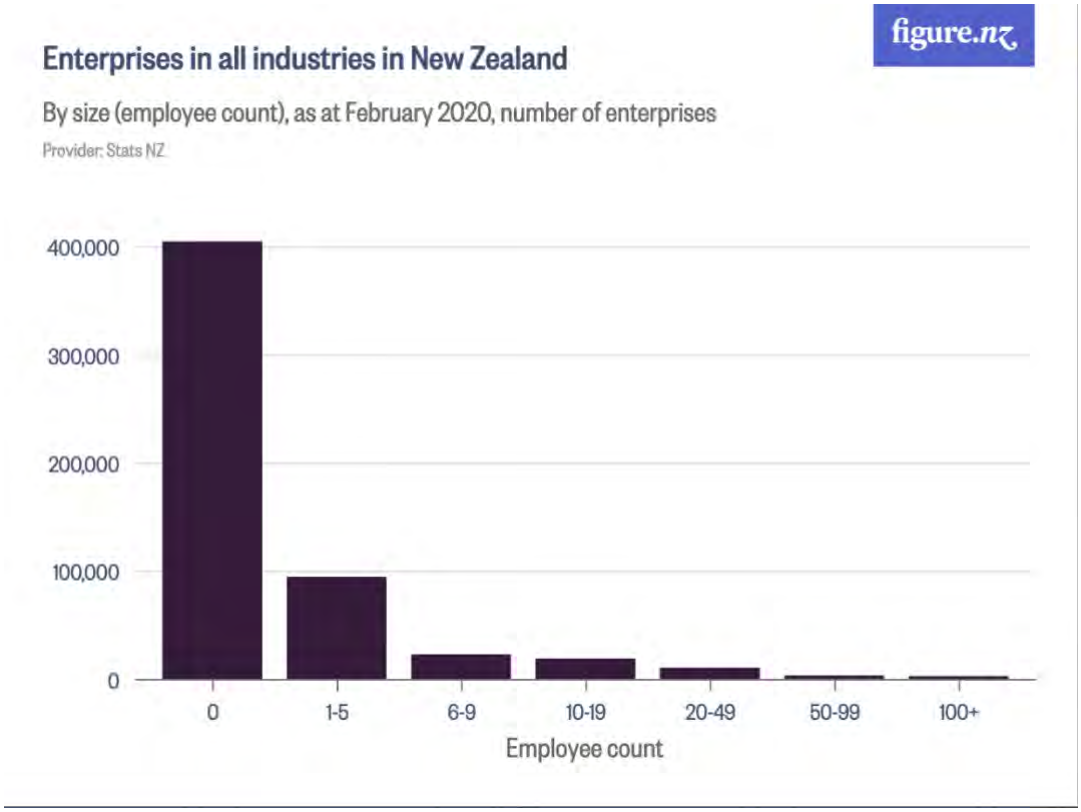
2.3.6. Business Leaders' Health & Safety Forum

The forum is a coalition of business and government safety leaders having a commitment to improving workplace health and safety performances in New Zealand organisations and represents the demand side of workplace health and safety. The forum's focus is to make workplaces safer by exploring the wider business factors that both support and constrain improved health and safety and business productivity (Business Leaders' Health & Safety Forum, n.d.). The forum acknowledges that effective control of business risks requires certain factors, such as the systematic deployment of the Health and Safety at Work Act, better connection with the government, and better integration of performance to outcomes, that are missing in New Zealand but crucial in lifting the health and safety performance across all organisations.

2.4. Significance of OHS Stakeholders' Initiatives in New Zealand

Section 2.3. elaborated the ways in which various stakeholders are supporting the growth of OHS profession in New Zealand through different initiatives. This supportive role is particularly important in the context of New Zealand where small organisations are in majority. Statistics New Zealand (2020) reported that New Zealand had 557,680 enterprises operating as of February 2020. Of these, approximately 404,000 (72%) were single-owner organisations, and 136,000 (24%) had 19 or fewer employees (Figure NZ, n.d.) (see Figure 2.1.).

Figure 2.1. The Scale of Organisations in New Zealand by Employee Count



Note. Figure sourced from www.figure.nz.

The literature highlights that the small organisations in the country are characterised by single-owner management, limited market share, lean resources and high financial pressures (Legg, Olsen, Lamm, Laird, Harris & Hasle, 2010). Further, Lamm and Walters (2004) contended that most small-scale employers do not comply with the OHS law either due to inadequate resources, or their preference to maximise profits even if at the peril of workers' health and safety, or resist complying with the OHS law as a way to protest against the government. For these reasons, many organisations in the country exercise bare minimum compliance with the OHS law instead of integrating OHS management with organisational operations that keeps their safety culture in pathological-calculative stages (See Table 2.2.).

Table 2.2. Safety Culture in Organisations

Stages	Features
Pathological	Care about safety only on being caught by the regulator
Reactive	Safety initiatives taken only after incident occurred
Calculative	Safety primarily driven by management and imposed from the top
Proactive	Workforce involvement in safety increases but unexpected incidents still a challenge
Generative	Safety is an inherent part of organisational activity at all level all the times.

Note. Adapted from Hudson (2003).

The literature suggests improving safety culture in small organisations is a daunting task as the positive outcomes of safe practices are not straightforward (Lamm, Massey & Perry, 2007; Brady, Bass, Moser, Anstadt, Loeppke & Leopold, 1997). Gunningham (2011) asserted that the poor safety culture in organisations often prove an obstacle, even if the most advanced OHS management systems are put in place, and workplace injuries still occur. The author also states that the OHS management systems are effective only when they are institutionalised from top to the ground level which influences the safety culture at the site

level. Thus, the external stakeholders such as OHS stakeholder organisations and OHS professionals play an important role in enhancing the safety culture of the organisations.

As noted in Section 2.3., WorkSafe and ACC in collaboration have made several interventions to support employers with different OHS capacities. These programmes aim to encourage the organisations to understand their obligations under the OHS law and adopt measures to improve workplace health and safety practices. Additionally, they support other OHS organisations such as HASANZ and NZISM, and academic institutions through funding and grants towards their initiatives for the profession's development. Therefore, the stakeholder organisations have made all-round interventions towards developing the OHS profession.

OHS professionals also perform a crucial role in improving OHS within the organisations by integrating OHS practices to the organisational goals. Olsen (2012) conducted a qualitative study in New Zealand and concluded that the OHS professionals use several strategies in performing this role. Therefore, a qualified and competent general OHS workforce is required for this challenging role towards which appropriate training and qualification of international standards is significant. Section 2.5. discusses the need for training and qualifications and the present OHS qualification framework in the country.

2.5. Need for OHS Training and Qualifications in New Zealand

Gaining OHS qualifications is important for OHS generalists to attain competencies and a significant criterion to be a member of professional association such as NZISM (as seen in Table 2.1.) and HASANZ. There is ample literature (discussed in Section 3.6. in Chapter 3)

that highlights the nature of the OHS generalists' role is different from other OHS professionals in organisations and the qualifications the OHS generalists require in gaining competencies (Hale, 1995; Wu, 2011; Wybo & Wassenhove, 2015). As indicated above, OHS professionals make an important contribution to organisations' OHS and thus having a strong OHS professional workforce is indispensable for developing the OHS profession. However, earlier studies conducted to understand the nature of the OHS workforce in the country indicated a largely underqualified workforce. For instance, Olsen in a 2014 survey of OHS practitioners found that about 52% of them had certificate level OHS qualification while 26% had tertiary OHS qualification. More recently, Dobson (2018) in her study found that only about 46% of the OHS workforce had tertiary level OHS qualification while 60% of the OHS workforce had some sort of OHS qualification. Though, Dobson's study shows a slight improvement over the previous study, a gap in OHS qualification among OHS professionals persists.

To implement the Robens Model OHS law, many organisations require the guidance of qualified OHS professionals to be able to self-regulate their OHS activities. Accordingly, NZISM adopted the INSHPO OHSPCF in 2017 that encourages the academic institutions to align their OHS programmes to international standards. The Capability Framework describes position profiles for OHS professionals and practitioners, including duties, required knowledge and skills and qualifications (Table 2.3.). These position profiles were developed based on the Australian Qualifications Framework (AQF) and the European Qualifications Framework (EQF), among others (INSHPO, 2017a). The AQF and NZQF have similar standards in terms of the expected learning outcomes from qualifications, knowledge, skills and their application, which are based on a joint project undertaken by the Australian

Government's Department of Education and Training and the New Zealand Qualifications Authority (NZQA, n.d.).

Table 2.3. OHS Qualifications for Generalist OHS Roles

Practitioner Roles	Level 1 OHS officer	Level 2 OHS advisor	Level 3 OHS coordinator
Qualifications	AQF 4 / EQF 4	AQF 5 / EQF 4	AQF 6 / EQF 5
Professional Roles	Level 1 graduate OHS advisor	OHS manager	General / Group manager OHS / Safety Vice President / Director OHS /Safety
Qualifications	AQF 7 / EQF 6	AQF 8 / EQF 6	AQF 9 / EQF 7

Note. Adapted from INSHPO (2017a).

Abbreviations. AQF, Australian Qualifications Framework; EQF, European Qualifications Framework; OHS, occupational health and safety; VP, vice president.

2.5.1. The OHS Qualifications and Training Framework in New Zealand

The present OHS qualification and training framework will be discussed under the categories below to show the nature of professional training in New Zealand:

- OHS diploma and degree qualifications
- OHS national certificates and individual papers expressed as unit standard provided by education providers
- NZQA Unit Standard (US) 29315 training for Health and Safety Representatives (HSRs)
- Other initiatives.

An exploration of NZQA website and websites of the different education providers was conducted for examining the available OHS qualifications which showed that, at present, there are 16 OHS qualifications on offer while 8 qualifications of general OHS nature and content have been discontinued. Based on the information given on the NZQA website, an overview of the OHS qualifications in New Zealand at degree, diploma and national certificate level is shown in Table 2.4.

Table 2.4. OHS Qualifications and Providers in New Zealand

Course / Programme Name	NZQF Level	Qualification Developer	Qualification Providers
New Zealand Certificate in Workplace Health and Safety Practice	Level 3	The Skills Organisation	12 providers including- Northland Polytechnic (Tai Tokerau Wānanga) Southern Institute of Technology (SIT) Toi Ohomai Institute of Technology Ltd. Western Institute of Technology at Taranaki Ltd Employers' and Manufacturers' Association (EMA)
New Zealand Certificate in Workplace Health and Safety Practice	Level 4	The Skills Organisation	12 Providers including- Northland Polytechnic (Tai Tokerau Wānanga) Southern Institute of Technology (SIT) Toi Ohomai Institute of Technology Ltd. Western Institute of Technology at Taranaki Ltd Employers' and Manufacturers' Association (EMA)
New Zealand Diploma in Workplace Health and Safety Management	Level 6	The Skills Organisation	Southern Institute of Technology (SIT) Northland Polytechnic (Tai Tokerau Wānanga) Employers' and Manufacturers' Association (EMA)

Course / Programme Name	NZQF Level	Qualification Developer	Qualification Providers
Graduate Diploma in Occupational Safety and Health	Level 7	Massey University	Massey University
Graduate Diploma / Certificate in Occupational Health and Safety Management	Level 7	Southern Institute of Technology (SIT)	Southern Institute of Technology (SIT)
Bachelor of Community Health (major in OHS)	Level 7 degree	Toi Ohomai Institute of Technology Ltd.	Toi Ohomai Institute of Technology Ltd.
Bachelor of Applied Management (OHS Management)	Level 7 degree	Southern Institute of Technology (SIT)	Southern Institute of Technology (SIT)
Bachelor of Health Science (OHS)	Level 7 degree	Massey University	Massey University
Post Graduate Diploma in Health Science (OHS)	Level 8	Massey University	Massey University
Post Graduate Certificate in Health Sciences (endorsed in Occupational Health & Safety)	Level 8 certificate	University of Otago	University of Otago
Post Graduate Diploma in Health Sciences (endorsed in Occupational Health & Safety)	Diploma	University of Otago	
Post Graduate Certificate in Health (Workplace Health and Safety)	Level 8 certificate	Victoria University of Wellington	Victoria University of Wellington
Post Graduate Diploma in Health (Workplace Health and Safety)	Diploma	Victoria University of Wellington	
Master of Health (Workplace Health and Safety)	Level 9 degree	Victoria University of Wellington	Victoria University of Wellington
Master of Health Science (OHS)	Level 9 degree	Massey University	Massey University
Master of Health Science (endorsed in Occupational Health & Safety)	Level 9 degree	University of Otago	University of Otago

Note. This table is author's original work.

OHS Diploma and Degree Qualifications

Table 2.4 shows that most of the qualifications being offered are at Level 7 or higher indicating a gap at mid and lower NZQA Level qualifications. An in-depth study of the curriculum of these qualifications revealed that in several of these courses, the emphasis is largely on the health component of health and safety. Furthermore, not all these qualifications necessarily meet the international standards mentioned in the INSHPO Capability Framework. However, Victoria University has developed its new postgraduate programmes in Workplace Health and Safety in accordance with the INSHPO's OHSPCF and in consultation with WorkSafe and HASANZ (Dobson, 2018; Victoria University of Wellington, n.d.); that is a positive development towards the growth of OHS generalists' workforce.

OHS National Certificates

Table 2.4. shows the two national certificates (workplace health and safety practice) at Levels 3 and 4 are being currently offered. However, there are a number of OHS qualifications on the NZQA website that have recently been discontinued. A Level 4 national certificate related to health and safety in construction was discontinued in 2017. Two national certificate Level 3-4 qualifications offered by different providers were discontinued. A Level 1 national certificate qualification developed by the Skills Organisation was discontinued in 2020. The lack of OHS qualifications at basic level leaves very few options at certificate level for the students eager to build a career in OHS.

Health and Safety Representatives' Training

The HSWA 2015 grants certain powers to HSRs, explained in detail in Section 2.2.4., but to exercise these powers, HSRs are required to be trained. There are a number of industry training organisations (ITOs) offering HSR training. For example, the New Zealand Council of Trade Unions (NZCTU) has been providing HSR training since 2003 through WorksafeReps, that now operates under Workers' Education Trust since 2017 (Lamm, 2010; WorksafeReps, n.d.a). WorksafeReps was involved in HSR training through its three-stage training programme approved under the HSE Act 1992 (WorksafeReps, n.d.b). After the enactment of HSWA 2015, the training programme was modified.

The initial stage of training, comprised of the Unit Standard (US) 29315 that describes the role and functions of a health and safety representative under the HSWA 2015, has become mandatory (WorkSafe New Zealand, 2017a). The completion of the stage 1 training US29315 ensures the eligibility of HSRs to exercise their powers under the Act. Stages 2 and 3 courses are optional for the HSRs for further training and have been updated to be compatible with the changes in the legislation (WorksafeReps, n.d.b). The unit standards completed under stages 2 and 3 training count towards credits in OHS tertiary education (Government Health and Safety Lead, n.d.a). Apart from WorksafeReps, Employers and Manufacturers' Association (EMA), established in 1886 to support employers in employment relations issue, is also engaged in health and safety training of various NZQA Levels as indicated in Table 2.4. It also provides HSRs training through a two-day training course in Unit Standard (US) 29315 (Employers and Manufacturers Association, n.d.).

Other Initiatives

The Government Health and Safety Lead (GHSL), formed in 2017, is a small team that aims to help public sector leadership with health and safety matters and collaborates with 39 government agencies (Government Health and Safety Lead, n.d.b). GHSL has launched two

health and safety training programmes, a Graduate Health and Safety Programme and a Health and Safety Summer Internship Programme, to develop new graduates and ultimately provide public sector agencies with qualified health and safety professionals (Government Health and Safety Lead, n.d.c; Government Health and Safety Lead, n.d.d).

As noted above, HASANZ also provides academic scholarships on annual basis to advance education in workplace health and safety aimed at building a capable and competent OHS workforce. The main feature of the scholarship is that it is not limited to monetary support but also includes practical experience and support in health and safety through field trips and mentoring by industry professionals (HASANZ, n.d.). Anyone seeking a degree or diploma to upskill themselves or to specialise in OHS through postgraduate OHS qualification is eligible for the scholarship. Apart from formal qualifications, OHS generalists need to take CPD courses and sessions to keep their knowledge updated, as discussed in Section 2.5.2.

2.5.2. Continuing Professional Development (CPD) in New Zealand

While NZISM has established a graded membership criteria to ensure competencies of registered professionals, HASANZ has established a register of certified OHS professionals. Both bodies require professionals to obtain minimum levels of qualification, experience and maintain CPD as required by specific levels of practice. Thus, if a professional wishes to continue being a registered member of HASANZ and NZISM or advance their career, completing CPD is mandatory. The NZISM has adopted and implemented the INSHPO Capability Framework for grading and certifying its members to enable them to advance to higher levels and to assess individual capabilities prior to granting membership. The

Capability Framework is based on the OHS BoK, which stipulated that CPD activities be supported by professional OHS bodies, OHS training providers, and conferences (Pryor, 2019a).

Australia's Occupational Health and Safety Body of Knowledge (OHS BoK) (2019) recognises individual differences in the breadth and depth of OHS knowledge held by OHS professionals (Pryor, 2019a). It suggests that, as part of their professional development, OHS professionals review and compare their knowledge with the OHS BoK framework from time to time to identify knowledge gaps (Pryor, 2019a). The INSHPO Capability Framework has provided the position profile for OHS practitioner and OHS professional roles (INSHPO, 2017a). The positions are progressive with each successive role requiring a higher qualification, knowledge and skill set (see Table 2). These competencies are decided based on the responsibilities assigned to each role.

The *knowledge matrix* in the Capability Framework, mapped to the OHS BoK, has six components of knowledge essential for the OHS roles. Each component sets out *knowledge category* and *illustrative generic topics* along with the indicative scope of knowledge that OHS professionals and OHS practitioners are required to understand in each topic (INSHPO, 2017b). The OHS BoK has categorised the level of knowledge into 4 levels: 1) *Awareness,* 2) *Routine application*, 3) *Comprehensive application,* and 4) *Creative mastery,* with each successive category being superlative in the given order (INSHPO, 2017b). Thus, the OHS BoK is a convenient document for OHS professionals for self-evaluation and self-estimation of their CPD requirements.

Apart from the OHS qualifications available in New Zealand and overseas through distance online learning, NZISM has developed a systematic plan to provide CPD opportunities for its practitioner, professional and certified members. NZISM provides its members a virtual space NZISM MyCPD where all the records of CPD undertaken by the members are kept (NZISM, 2018b). The CPD is mandatory for NZISM's members in the Practitioner to Fellow categories and is optional for student and affiliate members (NZISM, 2018b). Undertaking CPD sessions is significant for the professionals to reflect on their learning and measure their professional growth based on their personal development plan (Coates, 2011). Currently, NZISM is organising CPD sessions, mostly through webinars collaborating with the industry experts.

2.6. Conclusion

This chapter has provided an overview of the evolution of OHS frameworks in New Zealand. Factors that resulted in the development of current employment relations and OHS initiatives were discussed, as were the pivotal events that influenced their direction over time. The idea that OHS is an autonomous profession of its own right was also explored. In addition, this chapter has examined the steps taken since the Pike River Coal Mine Tragedy that have set the foundation for the present legislative and regulatory structure in New Zealand. A description of stakeholder organisations and their recent initiatives, such as WorkSafe and ACC's injury prevention initiatives and collaboration towards developing OHS profession, release of the HASANZ's Pipeline Report and the adoption of the INSHPO Capability Framework was also discussed. The nature of New Zealand organisations and the related challenges in OHS practices are discussed. The chapter presented various education and training pathways available for New Zealand's OHS students and professionals in terms of

qualifications and CPD, focusing on the need for developing a strong OHS qualification framework.

Chapter 3 provides the review of literature pertaining to the multidisciplinary nature of OHS, and its implications on organisations and OHS generalists' role and competencies in handling the health and safety issues are discussed.

Chapter 3: Literature Review

3.1. Introduction

The previous chapter discussed the origin and development of OHS profession in New Zealand. This chapter deals with several concepts pertaining to OHS and reviews the academic literature relevant to this field. The OHS profession draws on multidisciplinary concepts arising from various disciplines including science, economics, law, and psychology that influence the approaches to OHS in organisations and *ipso facto* influence the role of OHS generalists. OHS generalists require many competencies in collaborating with varied stakeholders having different vested interests and improving the OHS management systems and safety culture in an organisation. Chapter 3 commences with a discussion on the nature of OHS as a multidisciplinary subject and analyses the evolving concept of a profession. Further, it highlights the significance of the role that OHS generalists play and the strategies they use in performing their role effectively.

Subsequently, the importance of competencies and several OHS competency frameworks for OHS generalists are analysed. In addition, this chapter explores prevalent learning models, compares the OHS qualification frameworks in different countries and puts forth a case for the suitability of the competency-based education (CBE) model for developing an/the OHS qualification framework. The chapter also examines various CPD models and the CPD initiatives common in the OHS profession worldwide. Finally, the methods of calculating occupational demand are explained, with an argument presented in favour of the Professional Needs Approach as a suitable method to ascertain the future demand for OHS generalists in the country.

3.2. What is a Profession?

The concept of *professions* can be said to have its roots in Adam Smith's (1776) proposition that the *division of labour* enhances productivity and skills in the workers; an idea in the field of Economics that revolutionised specialisation in work (West, 1964). Though the idea was put forth mainly in the economic context of labour as a factor of production, it made a profound sociological impact on the way the occupations and professions were conceptualised and arranged in the society. Since then, several scholars have attempted to define the term profession and agree on its few basic characteristics but consensus over a singularly accepted definition still lacks (Malin, 2017, p.8).

- Professions are distinct interest groups that compete with each other
- Professions exist to provide service to the community.
- Professionals possess, define and control the specialist knowledge of the service they provide.
- The length of training for professional practice is linked to the social status of the professional.

These characteristics are the result of multiple theoretical perspectives and approaches such as taxonomic approach (having both *trait* and the *functionalist* elements), the *process* approach, the *neo-Weberian* approach and the *neo-institutional* approach that dominated scholarly claims. These approaches are contradictory in nature but valid in their own assertions and therefore have broadened the concept over the time (Adams & Welsh, 2007; Evetts, 2014).

The trait approach was the result of the earliest attempts of the scholars to define profession based on certain features specific to professions and endeavours to distinguish professions from occupations based on these features (Greenwood, 1957; Parsons, 1939; Wilensky, 1964). For instance, Greenwood (1957) delineated five specific traits of professions – a systematic body of theory, sanction from community, a regulative code of ethics, professional authority and a professional culture. Later this list was expanded by other scholars of profession. Though the trait approach answered what professions 'have', it failed to answer what professions 'do' which led the scholars to redefine profession based on the functionalist approach.

The functionalist approach, contemporaneous with the trait approach, propounded profession to be embedded in a social system providing it the stability and core moral and ethical values (Durkheim, 1957). The functions that a profession seeks to provide in the community are central to this viewpoint (Suddaby & Muzio, 2015). Therefore, this approach expanded the concept of profession from specific trait to focus on the interconnectedness of profession and the society within which it is embedded and operates (Suddaby & Muzio, 2015; Saks, 2012). For instance, Barber (1963, p. 672) defined professional behaviour in terms of four attributes: a high degree of generalised and systematic knowledge, primary orientation to the community interest, code of ethics to control self-behaviour, and a system of rewards that are ends in themselves. Similarly, Cogan's definition (1955, p.107) underlines both the essential features of professions and its connection with the society.

> A profession is a vocation whose practice is founded upon an understanding of the theoretical structure of some department of learning or science, and upon the abilities accompanying such understanding. This understanding and these abilities are applied to the vital practical affairs of man. The practices of the profession are modified by knowledge of a generalized nature and by the accumulated wisdom and experience of mankind, which serve to correct the errors of specialism. The profession,

> serving the vital needs of man, considers its first ethical imperative to be altruistic service to the client.

While, the trait and functional approach offer some insights into the importance and uniqueness of professions, they have been subject to severe criticism as successive scholars found that the traits were neither exclusive to the so-called professions nor based on comprehensive empirical analysis (Saks, 2012; Suddaby & Muzio, 2015). The proponents of a process approach argue that the so-called traits are invariably present in all occupations though varying in degree and therefore preferred to be concerned with the transformative process through which an occupation evolves into a profession (Brock & Saks, 2016; Jackson & Jackson, 1970; Wilensky, 1964). However, it was the neo-Weberian approach in 1970s, drawn from Max Weber's ideas on bureaucracy and legal-rational authority, that challenged the taxonomic approach most as it was grounded in the belief that a profession, both at individual and institutional levels, exists for self-interest and aims to exert control and power over its surroundings (Freidson, 1986; Johnson, 1972). This approach emanated from the findings of the comprehensive studies conducted on elite professions highlighting that such professions operated within well-defined hierarchies exerting authority and displaying elitism (Becker, Geer, Hughes & Strauss, 1961; Freidson, 1970).

Furthermore, the neo-Weberian approach linked expert knowledge with credentialing and registration as occupation's purpose to achieve 'exclusionary social closure' (Saks, 2012. The term denotes that the opportunities of professional practice is limited to a restricted group of eligible individuals who achieve professional status through specialised training and qualification, certification, accreditation and credentialing (Abbott, 1988; Saks, 2012; Saks, 2016). Thus, this approach describes professions as an outcome of power and influence exerted by certain stakeholder groups in constructing legal boundaries with state sanction and

providing exclusive autonomy to professions (Saks, 2012). In this sense, professionalisation is considered a strategy to control the entry of professionals to enhance the value of the profession and keep other similar occupations from impinging on the operating space of the profession (Parkin, 1979 as cited in Saks, 2016).

However, the autonomy of professions faced threat due to changing socio-political environment in 1990s with increasing neo-liberalism and de-bureaucratisation of organisational structures leading to entrepreneurialism and de-professionalisation (Svensson & Evetts, 2010). Therefore, the neo-institutional approach became significant in early 2000s as an outcome of the collective professional interests of the professional firms advocated on macro level. The institutional level struggle of the professional firms to maintain their status, power and source of income complements the neo-Weberian approach (Brock & Saks, 2016). However, neo-institutionalism reflects an ecological approach where the professional groups compete for professional jurisdiction and autonomy by forming symbiotic relations with other institutional level groups like academic institutions and government (Saks, 2016).

Abadi, Ayentimi and Coetzer (2020) assert that each approach is significant in broadening understanding of the concept of the profession. Integrating the divergent approaches mentioned above provides a developmental framework for a contemporary profession to evolve (Abadi et al., 2020). The OHS profession, albeit contemporary in origin, has a manifest purpose in elevating a culture of organisational safety and ensuring worker wellbeing. Further, in many countries, the profession is in the process of professionalisation. The OHS professional bodies, educational institutions and the governments in these countries are taking necessary steps to create essential structures and functions for the profession to develop, and therefore OHS can be justified as a developing profession under neo-

institutional approach. Section 3.3. explains how OHS profession is multidisciplinary in nature.

3.3. The Multidisciplinary Nature of Occupational Health and Safety Profession

The International Labour Organisation (ILO) defines OHS as "…the science of anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health or wellbeing of workers, taking into account the possible impact on the surrounding communities and the general environment" (Alli, 2008, p. vii). Quinlan, Bohle and Lamm (2010) explain OHS as a discipline that deals with an array of hazards and risks that result in workplace injuries and illnesses of a physical, physiological or psychological nature. Because workplace hazards, risks and their underlying causes differ in nature, preventive and redressal strategies for workplace injuries and illnesses are of a multidisciplinary nature and warrant a comprehensive approach to find solutions (Quinlan et al., 2010). Further, Hughes and Ferrett (2015) explain OHS as dealing with physical, physiological or psychological health and safety issues resulting from work-related activities where health embodies both physical and mental disorders and safety primarily concerns with physical injuries sustained by material handling, processes and procedures in the workplace. Thus, the OHS profession has sub-disciplines such as ergonomics, occupational health including occupational hygiene, occupational medicine [8] and nursing apart from general nature of OHS practice.

Different disciplines provide distinct professional perspectives on the causes of workplace injuries and illnesses. Resolving these cross-disciplinary perspectives often yields

[8] Note: For this thesis, occupational medicine was not included in the review.

inconsistent views which are sometimes incompatible with the interests of certain stakeholders (Quinlan et al., 2010). For instance, most work of occupational psychologists until World War II focused on altering the individual's behaviour to enhance productivity instead of modifying organisational work processes to suit workers' needs, a mentality that perpetuated a narrow view that occupational injuries as an outcome of worker behaviour. Since late 20th century, psychologists have begun to investigate the impact of environmental threats such as stress and workload on workers cognitive abilities and understanding worker behaviour during dangerous situations but has led to unintended outcome of 'victim-blaming' by the employers. Moreover, the OHS solutions provided still focus on changing individual behaviour towards better health outcomes instead of modifying work aspects (Quinlan et al., 2010).

Apart from the behavioural OHS solutions that work psychologists provide, approaches such as industrial hygiene, safety engineering and ergonomics provide technical solutions for making interventions in the work environment. For example, occupational hygienists deal with the physical, chemical and biological hazards for workers which is essentially a broad environmental scan to identify these hazards, evaluate the exposure levels and apply controls (Vincent, Tchachtchine, Thomassen &Nieboer, 1999). While the engineering controls focus on substituting harmful materials, administrative controls ascertain modifying job procedures to provide safe processes, and the provision of protective work gear (Mathews, 1985). Roelofs, Barbeau, Ellenbecker and Moure-Eraso (2003) found that most OHS solutions centred around the inexpensive administrative controls and protective equipment rather than more desirable engineering controls. Moreover, the implementation of suggested solutions is often overshadowed by bargains between employers and regulators on acceptable standards.

All of the above-mentioned disciplines provide different perspectives on OHS, broadening the understanding of how workplace injuries and illnesses originate. Therefore, it is significant to integrate these perspectives into a broad framework to formulate effective OHS responses to workplace risks and hazards (Quinlan et al., 2010). Thus, OHS generalists play an important role in integrating the OHS solutions with the organisational goals, influence and advising the key stakeholders and establish OHS management systems. Section 3.4. discusses the role and strategies general OHS professionals use in organisations.

3.4. General OHS Professionals and OHS Practitioners

The Health and Safety Professional Association (HaSPA) of Australia clearly differentiates between other OHS professionals and the general OHS professional, (also referred to as an OHS generalist), defining a professional as: "…an individual possessing a university qualification instead of a vocational qualification", (Pryor, 2019b, p. 23). The HaSPA has defined a generalist OHS professional as:

> One who applies multidisciplinary body of knowledge in a unique way to provide enterprises with advice on the organisational arrangements that will lead to the systemic and systematic management of OHS to prevent work-related fatality, injury, disease and ill-health. (Pryor, 2016, p. 5)

Thus, the Association clearly differentiates between other OHS professionals and the general OHS professional. The INSHPO *Occupational Health and Safety Professional Capability Framework* (OHSPCF) has further bifurcated the role of OHS generalist into: a) a general OHS *professional;* and, b) a general OHS *practitioner* (INSHPO, 2017a). According to INSHPO (2017a), OHS professionals are university educated or highly qualified to degree equivalent, while OHS practitioners are vocationally educated. Hale et al. (2019) asserted that

although both the general OHS professional and the general OHS practitioner have a broad vision in comparison to OHS specialists, these roles offer distinct career paths with different entry demands in terms of qualifications, knowledge, and skills.

This demarcation implies that OHS professionals are capable of collaborating, influencing and integrating the views of organisational leadership on key health and safety issues, thus helping to shape policies in favour of improved health and safety practices, while OHS practitioners implement policies at the field level (INSHPO, 2017a). Hale et al. (2019) suggested that the OHS professional is akin to the general practitioner (GP) in the medical field and detects complex organisational problems requiring technical advice and refers clients to technical professionals.

However, the demarcation between the professional and the practitioner as suggested by Hale et al. (2019) is not realistic for a number of reasons. First, mobility within and between both groups cannot be ruled out due to the high demand for and low supply of qualified OHS professionals. Second, the OHS profession in many countries is yet not fully regulated, making it possible for unqualified or underqualified OHS *practitioners* to move into *professional* roles. Moreover, Olsen (2020) recently argued that there is no singularly accepted definition of "OHS professional", and different authors have suggested different interpretations of the term (Pryor, 2016; Strahlendorf, 2004). They advised that, in the absence of a consensus regarding the meaning, every author should explain their own interpretation of the term to minimise ambiguity. Consequently, the current study aligns with the meaning of OHS professional and OHS practitioner as adopted in the INSHPO Capability Framework and uses a common term 'OHS generalists' that denote both the categories (INSHPO, 2017a). Section 3.4.1. discusses the role OHS generalists play in the organisations.

3.4.1. The Role of OHS Generalists in Organisations

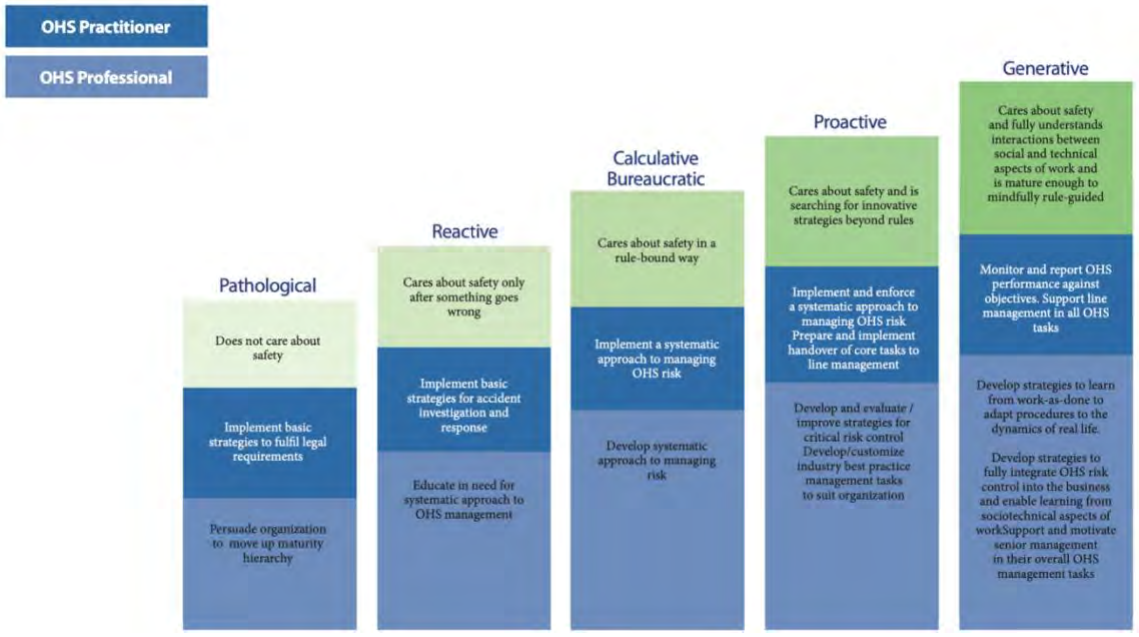
There is sufficient literature that highlights how different levels of safety maturity influence and shape organisations' strategies in managing OHS and also the role that OHS generalists play in each in every phase of their safety maturity. Organisations can use a number of approaches to manage OHS, including approaches that aim at environmental modification and monitoring to identify and remove hazards, altering individual behaviour towards safe practices, worker screening and monitoring to detect work-specific health condition and organisational strategies such as risk management, audits and consultation (Quinlan et al, 2010). It can be argued that organisations use safety management approaches for the sake of compliance if a reactive or bureaucratic safety culture is prevalent (Hudson, 2003; Westrum, 1993). Therefore, the organisations with low safety culture tend to apply the safety management approaches from myopic mindset to obtain immediately visible outcomes (Bateman & Finlay, 2002; Lamm et al., 2007).

Organisations with low safety maturity also affect the role and performance of the OHS generalists. For instance, Olsen (2012) found that organisations with low safety culture expect OHS generalists to restrict their advice to only technical OHS matters. However, the role of OHS generalists in moving such organisations towards the advance stages of safety maturity, such as proactive-regenerative stages, require them to go beyond providing technical advice to influencing organisational decision-making and being a continuous improvement expert (INSHPO, 2017a; Madigan, Way, Capra & Johnstone, 2019; Provan et al., 2017). The INSHPO Capability Framework has described the roles that general OHS professionals need to perform at different levels of organisational safety maturity based on

Hudson's Model (2003), *The Evolution of Safety Cultures*, as illustrated in Figure 3.1. (INSHPO, 2017a).

Thus, the INSHPO Capability Framework has attempted to correlate organisational safety maturity with the role that OHS generalists perform. Although there is scant literature on this subject, the role that OHS generalists perform in each level of organisational safety maturity is important to study because, apparently, the organisational safety maturity dictates the organisational safety management approach and influences the role of general OHS professionals and practitioners towards safety outcomes (Olsen, 2012).

Figure 3.1. The OHS Roles in Relation to Organisational Safety Maturity



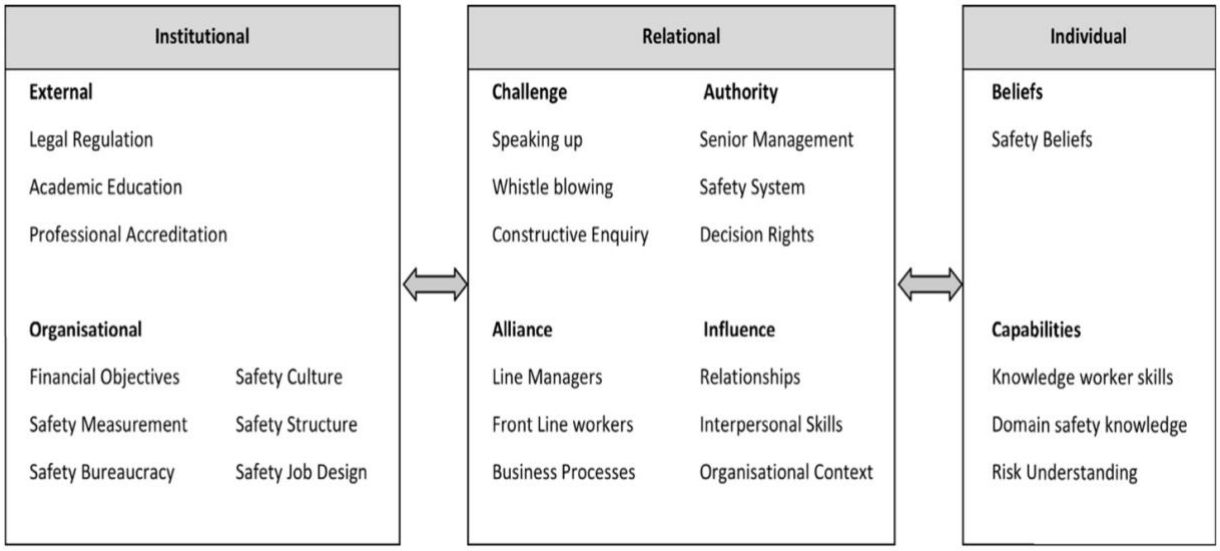
Note. Figure 3.1. is the original work of INSHPO (2017a, pp. 46–47).

The literature suggests that the role of an OHS generalist has emerged from a qualified technical advisory role to a strategist's role involving complex problem-solving in novel situations, and influencing, engaging, and communicating with different stakeholders to

combine workplace health and safety obligations with overall business goals (Blair, 2004; Groover & Spigener, 2008; Pryor et al., 2019). Similarly, other studies have concluded that OHS professionals need to assume the role of change agent to pursue an agenda of health and safety (Limborg, 2001; Swuste & Arnoldy, 2003).

However, some studies have suggested that the role of the OHS generalist as a change agent or a safety catalyst can be demanding owing to several inhibiting factors at play. For example, Provan et al. (2017) conducted a comprehensive thematic analysis of the literature and identified institutional, social and personal factors that introduce complexities to the role of the OHS professional including OHS generalists (see Figure 3.2.). Figure 3.2 shows the interrelationship of the institutional, relational and individual factors that affect each other and shape the role of an OHS professional (Provan et al., 2017). For instance, the dynamics of the OHS professionals' relationship with, and their influence on, management, and their own competence, are major determinants of how they perform in their role (Provan et al., 2017).

Figure 3.2 Institutional, Relational, and Individual Factors Shaping the Practice of OHS Professionals



Note. Figure 3.2. is the original work of Provan et al. (2017, p. 99).

Olsen (2020) documented the research outcomes of previous studies conducted on the role of OHS professionals and practitioners in organisations and claimed that the OHS professionals' role is complex but indispensable in an organisation. The author concluded that the OHS professionals' role is challenging often due to their isolated position in an organisational hierarchy that makes them lack formal authority which limits their intervention in decision-making matters; so, they require to gain support from the important stakeholders while improving their own knowledge, competencies and network to meet the challenges inherent in the role.

There is also a general acceptance among the OHS scholars that OHS professionals including generalists lack authoritative and positional power and are generally located on the periphery of organisational decision-making (Brun & Loiselle, 2002; Jensen, 2002; Wybo &

Wassenhove, 2015). Because OHS generalists do not fit well within organisational hierarchies, it is a challenging task for them to promote their OHS agenda and convince management to institute the desired changes (Broberg & Hermund, 2004; Hasle & Sørenson, 2011; Hasle & Jensen, 2006; Provan et al., 2017). Studies have highlighted the limited influence that OHS professionals are able to exert from their borderline position (Borys, 2000; Jensen, 2002; Wybo & Van Wassenhove, 2015). For instance, Jensen (2002) found in a study in Denmark that OHS professionals including ergonomists despite making attempts to be included in design and planning were not involved in these processes by the top management due to different priorities. Thus, the author concluded that the knowledge of organisational development is vital for the OHS professionals and they should also act as political agents apart from technical advisors.

Burlington and Griffiths (2020) have also asserted that OHS generalists can overcome such difficulties by having an understanding of organisations in general, and one's own organisation in particular, to understand how and why the organisations operate the way they do. This can be done by viewing organisations from different lenses. For instance, the *metaphorical* view can help them understand if an organisation acts rigid and reluctant to change like machines, or like an organism that responds to its environment, or acts like a political system (Morgan, 2006). The *structural* view helps to understand if the organisation has well-defined authority positions or has a flat structure where everyone is equal (Burns & Stalker, 1961). *The integral* view, on the other hand, depicts the organisation as a collection of culture, systems, behaviours and mindsets (Roe, 2010). Being able to view organisations through different lenses and recognise their inherent complexities, the OHS generalists can gain clarity regarding the operative dynamics of their own organisation and function efficiently (Burlington & Griffiths, 2020).

To counter the weak hierarchical position of OHS generalists, Broberg and Hermund (2004) also proposed that OHS professionals should act as *political reflective navigators* to ensure that their agenda attains a central place in boardroom discussions. The authors explained the meaning of the term political reflective navigator as:

> Political for pursuing a work environment agenda in the technological change process … reflective for being able to change between different roles in different contexts and situations … navigator, able to navigate in the very complex organisation surrounding the change project not only internally but externally as well. (Broberg & Hermund, 2004, p. 323)

This idea has been endorsed by other authors in different fields within OHS (Hasle & Sørenson, 2011; Jensen, 2002; Madigan et al., 2019; Olsen, 2012; Theberge & Neumann, 2010). Many of these scholars have asserted that OHS professionals need to have a flexible approach to moving forward with their OHS agenda and this can be achieved by using various influencing tactics, such as shifting from strict regulatory measures at field level to applying soft tactics such as rational persuasion in boardroom. Section 3.4.2. discusses some of the most useful strategies that OHS professionals use to engage with others in organisations.

3.4.2. The Performance Strategies of Occupational Health and Safety Professionals

As discussed above, OHS generalists perform varied roles in which they employ multiple strategies depending upon the situation. These strategies are influenced by several factors such as the prevalent organisational safety culture, organisational goals or power position of the OHS generalists employed in the organisation, (Hudson, 2001; Provan et al., 2017). Olsen (2012) conducted a qualitative study on OHS practitioners employed in different

organisations in New Zealand, to understand how the OHS practitioners exert influence on management; what strategies they use and why; the impacts they have on stakeholders; and the barriers they face in the process. The author found that the OHS practitioners' function as a change agent is aimed at developing OHS management systems which they achieve by engaging different strategies, such as knowledge and audit strategies, and finally, the regulation strategy (Olsen, 2012). The difference among the tools for applying these strategies and varying outcomes they yield explain why regulation strategy is used as a last resort by OHS generalists.

Hasle and Sørenson (2011) argued that regulation strategy focuses on compliance with OHS laws, and it is executed through audit and inspection of a workplace, which can lead to prosecution for non-compliance and thus it is considered an inflexible approach. The audit strategy is used to assess organisation's OHS performance by examination and cross-examination of evidence based on pre-determined criteria by an independent auditor (Blewett & O'Keeffe, 2011). On the other hand, the knowledge strategy is used to educate and enlighten various stakeholders about imminent workplace hazards, their adverse consequences, and preventive solutions (Hasle & Sørensen, 2011).

However, the authors acknowledged that the OHS professionals advancing their agenda based on regulation, audit and knowledge strategies often fail to convince management when faced with competing interests (Hasle & Sørenson, 2011). The authors noted that regulation strategy becomes ineffective because the Robens style of OHS legislation gives organisations a fair degree of latitude to develop their own health and safety rules, and, therefore, enforcement is less prescriptive. Sometimes, the audit strategy can have unintended outcomes because of unintentional errors, lack of clarity in audit process, or undue influence of the

auditor's and the organisation's relationship over audit reports (Tackett, Wolf & Claypool, 2004). Knowledge strategy sometimes proves ineffective because organisations base their investment decisions on the estimated future profits but the benefits derived from safe practices are not always straightforward and immediate (Hasle & Sørenson, 2011).

Similarly, Madigan et al. (2019) contended that there are certain individual and organisational factors that impact the effectiveness of "influence tactics" used by OHS professionals. The authors reported that the effectiveness of influence tactics is correlated with the experience of the OHS professional, the level of organisation's safety maturity, and the organisational size. For instance, more experienced OHS generalists get involved in strategic activities such as relationship building with key stakeholders to maintain influence, while the less experienced OHS generalists struggle to exert influence and use the whole array of influence tactics (Madigan et al., 2019).

Another difficulty indicated by research is the paucity of time and resources that compels organisations to resolve only those problems that seize management's attention, which results in politics and power play among various stakeholders vying for their own agenda (Broberg & Hermund, 2004; Hasle & Sørenson, 2011). In such scenarios, the OHS generalists are required to exert strategic influence on upper management but struggle due to lack of formal authority (Borys, Else, Pryor & Swayer, 2006; Wybo & Wassenhove, 2015). To overcome the difficulties OHS professionals encounter, Broberg and Hermund (2004) listed OHS-specific competencies (Table 3.1.), that an OHS professional acting as a political reflective navigator requires to pursue their agenda, switch between many different roles as situations demand, and navigate their way through complexities arising within and outside of the organisation. The competencies illustrated by the authors in Table 3.1. relate to the ability of

the OHS professionals to understand how organisations function in dynamic contexts, identify the most influential individuals, establish networks and relationships, and have personal skills such as persuasion (Broberg & Hermund, 2004).

Table 3.1. The Required Competencies of a Political Reflective Navigator

Competence	Competence elements
Knowledge of technological change processes	Understanding change processes in terms of actors, drivers, dynamics, artefacts, and organization.
Knowledge of actor analysis	Ability to identify who the relevant actors are and their interests in the technological change process.
Knowledge of organizational changes as political processes	Ability to see technological changes and possibilities for influencing them as a matter of organizational politics. Power and different actors' power bases may play a role in the process.
Ability to support establishment of 'political programmes' on work environment	For the OHS consultant, this can be seen as a question of establishing or supporting a political programme for integration of work environment aspects into a technological change. Such a programme will compete with several other programmes in the company, e.g. productivity, efficiency, quality, and technical features.
Ability to navigate in organizations	The OHS consultant should be able to identify decision-makers and other influential actors. He or she should be able to identify where to go in order to get things done and what sort of knowledge and arguments would be most appropriate in a given situation and context.
Ability to understand and mediate or translate between different 'languages' in relation to technological changes	This concerns mediating between the different actors involved and their different 'languages', e.g. design engineers, production engineers, managers, foremen, operators, and consultants.
Ability to change between different roles and mobilize different types of knowledge	This involves an ability to understand the context. In different phases and situations in the technological change process, it may be necessary to consider process versus expert consultancy, and which methods and type of knowledge will perform best. Or in relation to different actors, such as managers, engineers, and operators.
Insistent and persistent	Necessary personal skills. This implies that not all personnel in an OHS unit will be able to act as political reflective navigators.

Note. Table 3.1. is the original work of Broberg and Hermund (2004, p. 324).

The authors acknowledged that such a dynamic role requires the OHS generalist to possess certain competencies. Section 3.5 discusses the concept of competencies and delineates the competencies significant for the OHS generalist's role.

3.5. Competency and Capability among OHS Generalists

3.5.1. Interpretations of Competency and Capability

The concept of competency was developed by F. W. Taylor (1911), as cited in Garavan Thomas and McGuire (2001), among others, who advocated "one best way" of doing work to increase production and efficiency. Progressively, efficient performance of tasks has come to be identified with the competency approach (Sandberg, 2000). However, different interpretations of competency have evolved, which in turn have led to attempts to define competency as:

- an important skill that is needed to do a job ("Competency," n.d.)
- consistent application of knowledge and skills to effect outcomes according to accepted standards in the workplace (Naidu, Stanwick & Fraser, 2013, as cited in Pryor, 2016)
- a set of specific behaviours capable of being recognised, instilled and measured in various professionals (Fogg, 1999; Simmering, 2012).

The above definitions provide diverse viewpoints about the concept of competency, but a few authors have attempted to systematically categorise these otherwise divergent interpretations. For example, Strebler, Robinson and Heron (1997) bifurcated the meaning of competency into (1) the standard performance of defined tasks, and (2) the desired behaviour in a professional towards efficient performance. By contrast, Spencer and Spencer (1993) followed a trait approach in categorising competencies into (1) threshold and (2) differentiating competencies. While threshold competencies can be acquired as specific knowledge and skills, differentiating competencies are inherent in individuals and push them to give their best performance (Spencer & Spencer, 1993).

Hoffmann (1999), on the other hand, categorised competencies into three parts based on an extensive review of the literature: (1) minimum standard of performance made possible by the acquisition of task-specific knowledge, training and skills; (2) quality of the resulting performance after the application of knowledge and completion of tasks; and (3) presence of personal attributes such as critical thought, problem-solving and soft skills that help professionals to achieve the desired performance. Note that in Hoffmann's (1999) categories of competencies, one and two, listed above, are markedly different from category three. While categories one and two relate to the application of the competencies, the third category is an outcome-focused list of competencies.

The INSHPO Capability Framework, a global framework for OHS generalists, uses the term "capability" instead of "competency" as it considers competency a subset of capability (INSHPO, 2017a). While competency requires applying past learnings in present, capability is visualizing future possibilities to tackle them effectively as they emerge (Stephenson, 2009). A capable professional gains expertise by getting prolonged exposure to situations where their entire skill domain is used, soft skills are put to use for complex problem solving and domain knowledge is regularly updated (Mieg, 2001; Seifert, Patalano, Hammond & Converse, 1997). Stephenson (1992) stated:

> Capable people have confidence in their ability to take effective and appropriate action; explain what they are about; live and work effectively with others; and continue to learn from their experiences as individuals and in association with others, in a diverse and changing society. (p. 1)

Moreover, Stephenson, (1992) stressed the fact that mere possession of knowledge and skills is not capability, but the confidence to apply those skills in changing contexts is capability. Consequently, the capabilities referred to in the INSHPO Capability Framework are similar

to Spencer and Spencer's (1993) *differentiating competencies* and Hoffmann's (1999) third category, *personal attributes*, as described in the paragraph above, which professionals apply when they are exposed to different work situations over time.

Spencer and Spencer's (1993) *differentiating competencies* and Hoffmann's (1999) *personal attributes* — including soft skills — form crucial competencies needed by OHS generalists.

Kechagias (2011) defined soft skills as "intra- and inter-personal (socio-emotional) skills, essential for personal development, social participation and workplace success. They include skills such as communication, the ability to work in multidisciplinary teams, adaptability, etc." (p. 33). Further, Madigan et al. (2019) pointed out that various kinds of soft tactics are used at work to gain likeability and acceptance, and to influence outcomes. Blair (2004), in his safety management competency survey, concluded that safety educators and certified safety professionals felt that soft skills, such as communication skills and business acumen, were the most significant competencies that can be acquired, other than formal safety qualifications. Similarly, Leemann (2005) emphasised communication skills, and formulation of strategies to gain credibility among others in organisation. Leemann (2005) also created a competency model illustrating competencies necessary for OHS professionals. Section 3.5.2. describes different competency models useful for professionals.

3.5.2. Competency Models in the Occupational Health and Safety Profession

Competency models usually include a collection and description of essential and specific knowledge, skills, abilities, and other characteristics (KSAOs) required to effectively perform duties within a specific role (Green, 1999; Rodriguez, Patel, Bright, Gregory & Gowing, 2002). Several competency models have been put forward for tracking competencies in

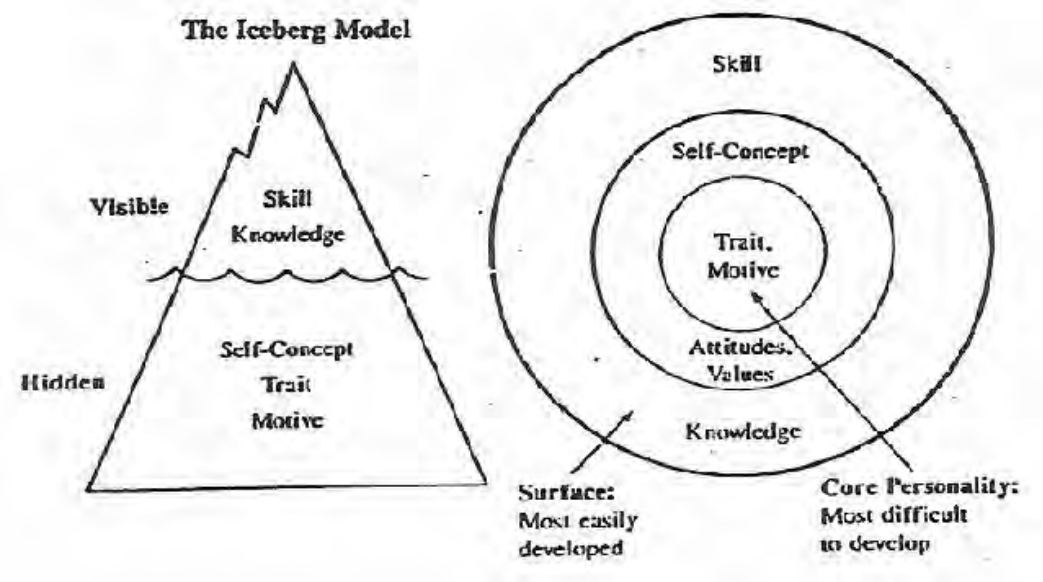
professionals and training them. Evolving professions need competency frameworks that identify the appropriate competencies, assessment and appraisal structures, and the ability to measure the maturity of the profession, as well as having professional expertise that ensures effective practice by educators, regulators, and professionals (Campion, Fink, Ruggeberg, Carr, Phillips & Odman, 2011).

Spencer and Spencer's (1993) *Iceberg Model of Competencies* (Figure 3.3.) is one of the early models that define the competencies individuals require. The model categorises competencies into two groups: (1) threshold competencies of knowledge, skills, and abilities that grant minimum performance capability; and (2) differentiating competencies like social roles, self-concepts, traits, and motives that drive individuals towards exceptional performance (Spencer & Spencer, 1993). This model has practical applicability because it outlines the threshold competencies as a minimum requirement for professionals to master the technical aspects of their role. The threshold competencies can be acquired through formal qualifications and training, whereas the differentiating competencies are not gained through qualifications as they are inherent in the individual and integral to their performance in most aspects of their role.

Professionals can use differentiating competencies in actual work situations once they have gained the threshold competencies. Thus, this classification of competencies appears as a hierarchy of competencies, where a threshold is essential for basic performance, while the differentiating competencies are desirable in the bid to achieve superior performance. Despite its classification of competencies, the Iceberg Model is general in nature and does not help in actually identifying the significant differentiating competencies that are required in different OHS roles, and therefore, it has limited applicability to the OHS profession. Nonetheless, the

model has served as a guide to differentiate between technical and non-technical skills and view differentiating competencies as non-technical which prompted successive scholars to refine the demarcation in different professions. Understanding the complexities that OHS professionals encounter, Leemann constructed a competency model helpful for safety, health and environment (SH&E) professionals to make value-added contribution to the organisations.

Figure 3.3. Central and Superficial Competencies



Note. Figure 3.3. is the work of Spencer and Spencer (1993, p. 11).

Leemann (2005) divided the SH&E role into five categories: (1) ensuring compliance, (2) zero incidents, (3) communications, (4) influence, and (5) cost-effective. Leemann (2005) also categorised three groups of competencies for SH&E professionals: (1) cognitive competencies for identifying problems and solving them; (2) interpersonal competencies for

gaining agreement with stakeholders; and (3) intrapersonal competencies for being successful as an SH&E professional. Thus, the model defined the different roles, functions and commensurate competencies required to function in such roles. This model is superior to the Iceberg Model in the sense that it focuses on the multidisciplinary nature of the OHS professional's role and outlines the specific competencies they require when performing different aspects of their role if they wish to achieve an excellent performance. However, Borys (2015) argued that the model does not demonstrate how the SH&E professionals add value to the organisation in direct terms as those who enjoy higher status in the line of reporting are able to exert greater influence because of their advantageous position. Moreover, the model also fails to arrange these OHS roles and competencies to formulate a career pathway for the OHS professionals and therefore has less practical utility. In addition, the model does not specify the competencies required specifically by OHS generalists.

In contrast, the INSHPO Capability Framework is a comprehensive framework developed exclusively for general OHS professionals. Table 3.2. draws a comparison among each of the competency models given here regarding their applicability to OHS professionals and, in particular, to the OHS generalists.

Table 3.2. Comparison Among Competency Models

	Spencer and Spencer's model	Leemann's Model	INSHPO Capability Framework
Delineates technical skills	✓	✓	✓
Delineates non-technical skills	✓	✓	✓
Delineates skills specific for OHS professionals	✗	✓	✓
Identifies competencies required by general OHS professionals	✗	✗	✓
Identifies competencies required in different general OHS professional roles during OHS career	✗	✗	✓

Note: Table 3.2. is author's original work.

Australian OHS BoK as the Basis of the INSHPO Capability Framework

As discussed above, the INSHPO Capability Framework defines competencies specifically for the OHS generalists. As such, it uses the Australian OHS Body of Knowledge (OHS BoK) which was launched by HaSPA in 2012 as a reference point to explain the core theories and key concepts defining the general OHS profession (Pryor, 2019b). The OHS BoK is useful for the following reasons: (1) OHS professionals and practitioners aiming for professional development; (2) OHS associations wanting to develop accreditation and certification standards for OHS generalists seeking membership; and (3) academics aiming to develop OHS training programmes aligned with international standards (Dobson, 2018). Despite its usefulness, the OHS BoK has certain inconsistencies in terms of quality, structure and content (Paul & Pearse, 2015). The authors compared the Australian OHS BoK with three other international bodies of knowledge using benchmarking and found it ranked lowest. They found the OHS BoK too prescriptive and detailed to be used as an audit tool for

the accreditation of OHS training courses. Furthermore, the multidisciplinary concepts pertaining to OHS are not well-developed in the Australian document (Paul & Pearse, 2015).

Despite its shortcomings, the OHS BoK is fundamental to the development of the INSHPO knowledge matrix as it provides a conceptual framework for the knowledge borrowed from different disciplines and defines the scope of knowledge required by the OHS generalists in different roles. Thus, it serves as a practical guide for the countries wanting to develop their general OHS profession. Moreover, the OHS BoK is a "work-in-progress"; it is intended to be an evolving document that is regularly updated to ensure currency and relevance (Pryor, 2019b). Accordingly, the OHS BoK continues to release its updated version and introduce new chapters of relevance for OHS generalists (OHS BoK, n.d.). NZISM had adopted OHS BoK for its accreditation scheme and continues to revise the scheme as the BoK evolves. Section 3.5.3. describes the utility and significance of the INSHPO Capability Framework.

3.5.3. The INSHPO Capability Framework as a Global Template

As stated above, the INSHPO Capability Framework provides global standards for the general OHS profession by outlining a knowledge matrix that defines roles and duties and sets standards around the knowledge, capability and skills required to perform these roles. The framework sets out the categories of OHS professionals as advisors, strategists and leaders, while OHS practitioners are described as implementors, supporters and communicators in the field (INSHPO, 2017a). These positions are aligned with the advancements individuals make in their careers in terms of qualifications and experience.

Therefore, the Capability Framework has not only linked each OHS professional and practitioner position with the commensurate knowledge and skills required in that role but has also listed the roles in progression, depicting career pathway for the OHS practitioners

and professionals (INSHPO, 2017a). Thus, the framework is comprehensive and therefore, it can serve as a guide for all organisations to recruit qualified OHS generalists, or to develop the skills and knowledge of existing OHS professionals as they are promoted to higher roles (Pryor et al., 2019). However, it can be argued that the simple structure of the framework may lead organisations to encounter practical difficulties in implementing it for a number of reasons. First, the actual nomenclature used for OHS positions in various organisations differs from that listed in the Capability Framework, and this variance may create complexities in deciding the appropriate level of knowledge and skills required by the positions. Second, the size of the organisations and the scope of their activities can impact the significance and scope of OHS generalists' roles, irrespective of their position: a situation that may require knowledge and skills different from those mentioned in the INSHPO Capability Framework.

Despite the shortcomings, the INSHPO document is the most comprehensive capability framework dedicated to advancing the general OHS profession. It is designed by INSHPO working group with support and feedback from global OHS experts such as INSHPO Board members, members of national OHS professional bodies, OHS educators, OHS professionals and conference participants (Pryor et al., 2019). Moreover, it is a dynamic document that calls for exploration, reflection and improvisation in the process of professionalising OHS (Pryor et al., 2019). It is also argued that the *Global Framework* is an appropriate starting point to guide a country striving to develop the OHS profession because it can be adapted and modified to suit the requirements of any country (INSHPO, 2017b).

At best, competency frameworks are generic templates providing a user with a platform to develop tools such as qualifications, accredited scheme, professional certification to develop

and measure competencies. Marrelli, Tondora and Hoge (2005) suggested that an appropriate competency framework can be modified and evolved by synthesising different approaches that suit the context and requirements of the user, which increases the outcome's validity and framework utility. Marrelli et al. (2005) also stressed that competency models can be arranged and rearranged, depending on their purpose and these should be evaluated and updated by the organisation. Given that the INSHPO Capability Framework comprehensively defines the competencies, it is an incentive for the academic institutions of the signatory countries to update their OHS programmes and OHS training courses to ensure currency with the required content and concepts to be delivered for intended competencies. Section 3.6. and 3.6.1. discuss global OHS qualification frameworks and a general education model that can be suitably applied to OHS.

3.6. Education and Training in Occupational Health and Safety Profession

As discussed in Section 3.2, OHS is multidisciplinary in nature by deriving theoretical concepts from different disciplines such as law, economics, labour relations, psychology and the physical sciences including medicine (Quinlan et al., 2010). The role of OHS generalists is a complex one that involves understanding and interpreting the technical and statistical data but more importantly dealing with organisational complexities using non-technical skills. Therefore, they require different training techniques in comparison to scientific disciplines in view of the inherent complexities of their roles and the new OHS issues continually recognised (Wybo & Wassenhove, 2015). Hale, Piney and Alesbury (1986) asserted that OHS carries an applied dimension because it is about recognising and solving problems as they arise in an organisational setting. Similarly, Wu (2011) advocated providing OHS education practically and interactively as a two-way exchange process, rather than as a

purely formal, pedagogical delivery of content. Yet, few authors have prescribed exemplar training programmes that can impart both theoretical knowledge and practical skills to students by providing a combination of classroom-based lectures and practical training in the field (Hale, 1995; Wu, 2011).

However, a review of current OHS qualification frameworks in different countries shows there are vast differences in country-specific requirements to practice OHS. In some countries, professional practice is neither regulated nor licensed, but other countries have well-defined regulatory and qualifications frameworks. For instance, in Canada, several academic courses, ranging from a basic certificate to postgraduate-level papers, are offered by academic institutions. Additionally, the Board of Canadian Registered Safety Professionals (BCRSP) offers two certificates: one at the entry level and another at the mid-career level (Wright, Hollohan, Pozniak & Ruehlen, 2019). However, inter-provincial variability in licencing requirements exists in Canada (Hale, 2019), and therefore, knowledge, skills and qualifications differ as prerequisites for individual practice (Sturm, 2018). Thus, the utility of the Canadian qualifications' framework is difficult to justify while the profession is still not well-governed. In saying that, since the adoption of the INSHPO framework, Canadian authorities have been discussing the need for regulation at both the national and provincial levels (Wright et al., 2019).

In Australia, the existing OHS qualification framework is inadequate for meeting the requirements of professional practice (Provan, Dekker & Rae, 2018). Provan and Pryor (2019), therefore, conducted a critical appraisal of the OHS professional education model in terms of the structure, duration, and relationship of OHS with other disciplines, more so to assess the effectiveness of the present model in developing soft-skill capabilities within the

OHS professionals. The U.K., on the other hand, has a well-established qualification framework administered through National Examination Board in Occupational Safety and Health (NEBOSH) (Hale & Booth, 2019). The Institute of Occupational Safety and Health (IOSH) plays an important role in providing accreditation to OHS courses worldwide (Hale & Booth, 2019). Though the qualification framework is both inconsistent and inadequate in these countries, the adoption and implementation of the INSHPO Capability Framework has given a definite standard for the OHS qualifications to be developed. For instance, as discussed in Chapter 2, Victoria University of Wellington in New Zealand has recently launched its postgraduate OHS courses designed on the basis of INSHPO Capability Framework. Section 3.6.1. analyses the applicability of a specific education model to the OHS educational framework.

3.6.1. Competency-Based Education Model for Occupational Health and Safety

Although differences between OHS professions in various countries suits their specific requirements, an appropriate and consistent learning model for developing OHS qualifications is still needed. As discussed in the beginning of the chapter, OHS profession is multi-disciplinary in nature, and the learning concepts for students of OHS profession are derived from these disciplines such as medicine, clinical psychology, dentistry, physical sciences and other disciplines like teaching. Thus, it is of relevance to evaluate the suitability of the *Competency-Based Education* (CBE) learning model that is widely used in many of these disciplines, and borrow it for developing the OHS qualification framework (Field, 1979; Yip & Smales, 2000). The true essence of the CBE model can be captured through the following definition.

> CBE is defined as an outcome-based approach to education that incorporates modes of instructional delivery and assessment efforts

> designed to evaluate mastery of learning by students through their demonstration of the knowledge, attitudes, values, skills, and behaviors required for the degree sought. (Gervais, 2016, p. 99)

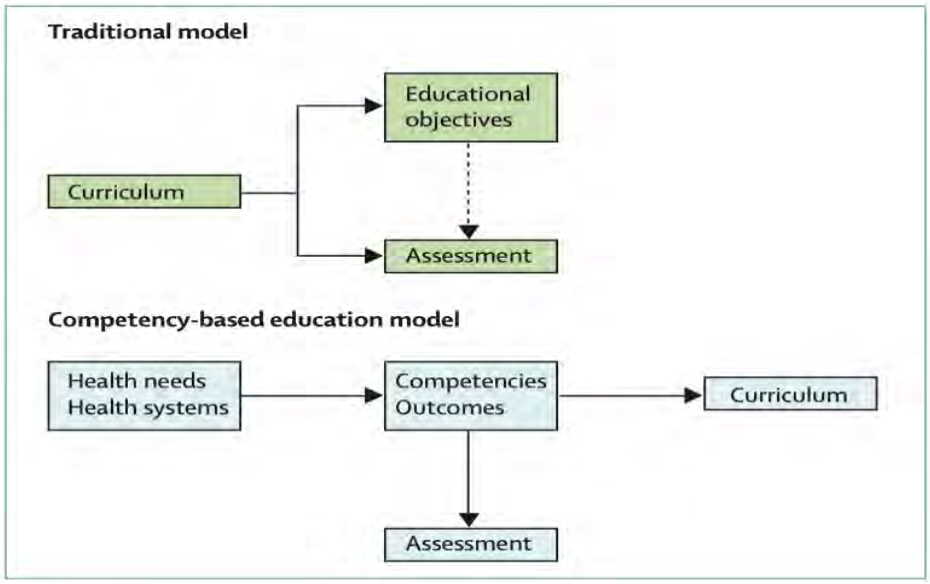
Further, in a detailed review of the traditional educational model used in the medical sector, Frenk et al. (2010) found orthodox medical education failing to grant adequate competencies due to evolving complex environment. The authors in response proposed a third-generation transformative learning, which is achieved in three stages: (1) moving from informative to (2) formative learning, and finally, to (3) transformative learning (Frenk et al., 2010). While informative learning inculcates requisite knowledge and skills to grant expertise, formative learning instils values that can be used in changing social contexts, thus shaping professionalism among individuals. Transformative learning builds on the first two stages, where professionals learn to become leaders with vision and are enabled to act as catalysts for positive change (Frenk et al., 2010). The authors continue:

> As a valued outcome, transformative learning involves three fundamental shifts: from fact memorisation to searching, analysis, and synthesis of information for decision making; from seeking professional credentials to achieving core competencies for effective teamwork in health systems; and from non-critical adoption of educational models to creative adaptation of global resources to address local priorities. (Frenk et al., 2010, p. 1,924)

As discussed in Section 3.4.1., the OHS generalists are required to play a similar role to facilitate positive change in organisations and to uplift their health and safety management systems and this requires competencies such as soft skills, influence and communication. This organisational progression where professionals are required to act as change agents is compatible with transformative learning. Frenk et al. (2010) compared the *traditional model* of education and the CBE model and explained why the latter is appropriate for contemporary requirements. While course objectives and content in the traditional model are rarely re-examined and seldom modified to include updated information, thus undermining the programmes' legitimacy and the effectiveness, the programmes under CBE are designed

through assessing local needs, identifying required competencies, and designing curricula and assessments based on stated objectives (Frenk et al., 2010) (Figure 3.4).

Figure 3.4. The Competency-Based Education (CBE) Model



Note. Figure 3.4. is the original work of Frenk et al. (2010, p. 1,943).

Since the CBE model is tailor-made, context-specific, and flexible enough to include both global systems and local perspectives (Gruppen, Mangrulkar & Kolars, 2010), the model is appropriate for developing qualifications frameworks in the OHS profession. Further, Albanese, Mejicano, Anderson and Gruppen (2008) state that public being served by competent professionals is the primary goal of CBE model. Therefore, this model has received wide government support in its adoption and implementation (Hatcher, Fouad, Campbell, McCutcheon, Grus & Leahy, 2013). The CBE model is compatible with the aims of INSHPO Capability Framework as the competencies delineated for different positions can be linked to the learning outcomes of different OHS qualifications. However, since the framework only serves as a template, signatory countries can adapt it to their local

requirements and design not only their OHS qualification programmes but also CPD courses based on the CBE model.

3.6.2. Professional Development Through Continuing Education in the Occupational Health and Safety Profession

The literature contends that CPD can differ greatly depending on objectives, outcomes, and learning trajectories to achieve desired outcomes (Young, 1998). Similarly, the meanings of CPD can vary depending on definitions adopted by different professional associations, where CPD can variously be a strategy for personal development, reflection and self-learning, or a means of granting specific competencies to specific professionals in key roles who are following certain career paths (Friedman & Phillips, 2004). Friedman and Phillips (2004, p. 362) defined CPD as a way to assure:

- lifelong learning for professionals
- a means of personal development
- a means of individual professionals to ensure a measure of control and security in the often-precarious modern workplace
- a means of assuring a wary public that professionals are indeed up-to-date, given the rapid pace of technological advancement
- a means whereby professional associations can verify that the standards of their professionals are being upheld
- a means for employers to garner a competent, adaptable workforce.

However, Coffield (2000) asserted that reaching a consensus on a singular definition of CPD is difficult to achieve given the differences in learning methodologies, learner purposes, and

learner interactions in the workplace and community. Certainly, CPD has transformed from being sporadic learning activities undertaken by proactive professionals to a systematic and structured set of activities that a professional is mandated to undertake in order to remain qualified to practice (Boud & Hager, 2012). Such systematisation of learning activities has led to a disconnection between what is taught in classroom to what is practiced in the work contexts (Webster-Wright, 2009). Therefore, CPD has lost its original meaning, where development was the central focus, CPD occurred naturally within the profession, and was facilitated by constant interactions of the professional with their surroundings (Hager, 2011). Currently, CPD is identified with the acquisition and transfer of formally designed and packaged pieces of knowledge, and it is undertaken away from actual work. Much of the focus of contemporary CPD initiatives lies in the delivery of content as opposed to its outcome in the form of enhanced learning (Webster-Wright, 2009).

Several scholars have made suggestion to make CPD an effective and meaningful exercise. For instance, Friedman, Durkin, Phillips and Davis (2000) suggest that professional associations should be mindful of "clarity of purpose and practice, consistency, suitability to the needs of members and the context in which the association operates, self-reflection [and] external perspectives" while designing the CPD programmes. This is because the policies and programmes leading to CPD can differ depending on the purpose of undertaking CPD. (Friedman & Phillips, 2004). Kennedy (2005) also suggested that the purpose of adopting a CPD model should be to focus on content and method of delivery equally. However, Boud and Hager (2012) acknowledged that professional associations face challenges in designing tailor-made CPD courses to suit individual learning needs since the measurement and record-keeping of the achievements of individual professionals is difficult.

Introducing and delivering CPD outside of traditional academic OHS programmes is a significant part of professional development of the OHS workforce to meet current and future demand for competent OHS professionals (Scott, Shore, Brown, Harris & Rosen, 2019). Most countries with a developing OHS profession have established professional associations dedicated to governing the profession. These professional bodies strive for structural and functional coherence by creating standards that OHS professionals need to follow in order to be registered. Their standards are measured in the form of OHS qualifications, or accreditation via coursework; in this context, CPD provides a standard criterion to assess and update competencies among practicing professionals over time. OHS associations of several countries such as the U.K., the U.S.A, Australia, New Zealand and several European countries, have made it mandatory for their member professionals to engage in CPD to keep their knowledge up-to-date and relevant in a fast-changing environment (Hale, 2019; Hale & Booth, 2019; Scott et al., 2019).

A few authors have written about various CPD programmes, providing an understanding of how these programmes have evolved in different countries. In the U.S.A. for instance, the National Institute for Occupational Safety and Health (NIOSH) is responsible for education, training and maintaining OHS professional competencies; it has created education and research centres that ensure that relevant continuing education is developed and disseminated (Scott et al., 2019). An online survey across a broad range of OHS categories assessed various professionals' CPD and education preferences and found that 77% of respondents preferred in-person or live courses and were willing to spend money on them (Scott et al., 2019). The authors concluded that it is essential to track the needs and preferences of the developing OHS workforce and provide them with tailor-made courses (Scott et al., 2019). In another example, Canada is beset by an absence of OHS regulation and licensing

requirements, but several certifications are available for professionals and practitioners to prove their competencies (Wright et al., 2019). These certifications assure employers that competencies are real in terms of essential skills, knowledge, and experience (Wright et al., 2019).

Although different countries have developed their own CPD frameworks, the literature gives little or no information about CPD models in the OHS profession, unlike other professions such as medicine and teaching, which have well-developed CPD models in use. For instance, Kennedy (2005) identified and described the features of nine CPD models (Table 3.3.) for teacher training in Scotland, which were classified based on their ability to support learning and transformative teaching practice. These models serve different learning purposes, each to the unique requirement of the learner or professional and are therefore relevant to the field of OHS. For instance, the *award-bearing* model is a format of disseminating traditional knowledge through academic institutions, while the professional development learning under a *deficit model* can be designed to complement perceived knowledge deficit. Similarly, the cascade model can be used when the resources are lean, as it involves few professionals getting formal training and then disseminating it among co-workers (Kennedy, 2005).

Table 3.3. The Spectrum of CPD Models

Model of CPD	Purpose of model
The training model The award-bearing model The deficit model The cascade model	Transmission
The standards-based model The coaching/mentoring model The community of practice model	Transitional
The action research model The transformative model	Transformative

Increasing capacity for professional autonomy

Note. Table 3.3. is the original work of Kennedy (2005, p. 248).

Finding a suitable CPD model within the OHS profession depending on the needs of the country is highly recommended since it can provide direction to the CPD initiatives within the profession. While the competency and training frameworks provide the elements of the OHS profession, there still remains the question of supply and demand for OHS generalists.

3.7. Occupational Demand in the Occupational Health and Safety Profession

3.7.1. The Concept of Occupational Demand

Proponents of human capital theory have stated that worker productivity can be increased through appropriate training programmes and education (Becker, 1962; Schultz, 1961), an idea that highlights the significance of investments in education in any economy (Willems, 1996). Given that investing in specific types of education augments labour quality and outputs, the economic experts in various countries engage in planning vocational education and training, as well as planning for future manpower requirements (Willems, 1996). Projections for labour demand and supply can be made as an aggregate in an economy, or by occupation, level and type of training (United Nations, 1971). Calculating labour demand by

occupation at a national level allows forecasting of potential shortfalls in the supply of trained labour based on the calculations of output from universities and training schools, which is useful for the formulation of policies concerning vocational training and education (United Nations, 1971).

Manpower planning is specifically relevant for OHS, as it is still an upcoming profession in several countries where development of OHS qualifications require an estimate of the number of OHS professionals needed in the future. Manpower forecasting in terms of determining labour supply and demand is an essential part of manpower planning (Willems, 1996). El Achkar (2010) explained that the occupational demand and supply is calculated using two variables: (1) *stock* variable that ascertains the total number of workers required or available to work in a certain occupation at a given point of time; and (2) *flow* variable where occupational demand and supply is ascertained calculating the *changes* in the number of required or available workers at a particular time. Changes in labour requirements are either in *expansion demand* due to economic growth, or *replacement demand* because of vacancies created by workers leaving their jobs for various reasons such as retirement, death or change of vocation (El Achkar, 2010). Occupational demand based on flow approach can better inform the relevant government policies and educational structures in OHS profession as the demand for OHS professionals is mostly high in comparison to small workforces.

Forecasting occupational supply and demand is vital for multiple reasons, for example, to ascertain probable manpower inadequacies in the near future, which predicates training needs to bridge gaps through training programmes and requires a significant economic investment in manpower planning (Agapiou, 1996; Hillerbrandt & Meikle, 1985; Institute of Medicine [US] Committee to Study the Role of Allied Health Personnel, 1989; Wong et al., 2004).

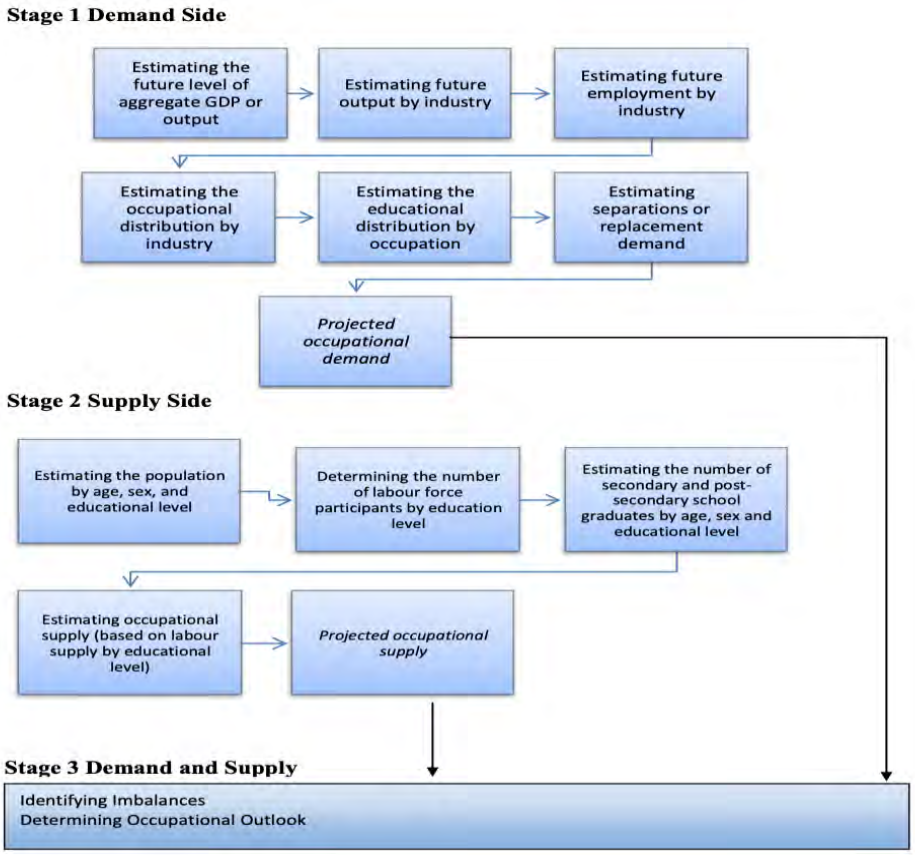
Therefore, this approach is suitable for forecasting professionals' demand exclusive to OHS profession. Designing appropriate training programmes based on forecast occupational demand enables employers to source the most competent and best-trained professionals as well as preparing individuals to make career decisions in favour of professions demanding more professionals (Institute of Medicine [US] Committee to Study the Role of Allied Health Personnel, 1989). Occupational demand forecasting is important for updating OHS specific knowledge, devising OHS training and CPD programmes that cater to specified skill requirements and filling OHS workforce supply shortages. However, there are several ways the manpower projections can be made. A comparison among different methods is made in the following discussion along with the case for professional needs approach being suitable for projecting demand in OHS profession.

The tested manpower projection methods can be classified into three types: (1) time-series predictions, (2) the manpower requirement approach and (3) the professional needs approach. These methods, appropriate for forecasting national level labour needs, are used by majority of the countries such as the U.SA. and the U.K. (Houriet-Segard & Pasteels (2011). These models are based on the prediction of macroeconomic environmental factors like technological advancement and inter-professional movement the precise calculation of which is impossible and that often leads to inaccurate interpretations (El Achkar, 2010). Richardson and Tan's (2007) report to the Australian Government also pointed out similar difficulties in accurately predicting future demands for manpower. The authors concluded that manpower demand is reactive to external factors and non-linear trends, such as technological development, national and sectoral policies, and economic patterns (Richardson & Tan, 2007).

Moreover, the time series projection method that extrapolates past employment trends into the future may provide inaccurate results for the OHS profession on account of its underlying assumption that the factors operating well in the past will continue to operate and will generate a similar demand. This disregards novel causative factors and the ever-changing interplay of internal and external factors, which renders long-term forecasts made using this method unpredictable (Wong et al., 2004). In reality the OHS profession is still developing, and the demand is bound to rise.

Another method, the manpower requirement approach, often regarded as a baseline model, is most commonly used to calculate manpower demand and supply and can be simplified or expanded depending on the purpose and resources available to the forecaster (El Achkar, 2010; Willems, 1996; Wong et al., 2004). This approach consists of a series of three steps: (1) forecasting occupational demand; (2) forecasting occupational supply; and (3) finding a balance between the two, as illustrated in Figure 3.5 below (El Achkar, 2010). Most models use this approach in making manpower forecasts.

Figure 3.5. Developing a Basic Occupational Forecasting Model



Note. Figure 3.5. is the original work of Achkar (2010, p. 8).

Despite being widely used, the manpower forecasting model has been criticised, as it does not serve its purpose in aiding education planning. The factors affecting individuals' decisions for enrolment are independent of labour projections (Hollister, 1967, as cited in Willems, 1996; Parnes, 1962).

3.7.2. The Professional Needs Approach to Forecasting Occupational Demand

The *professional needs approach* forecasts need instead of demand. The terms "demand" and "need" are different in meaning and are not interchangeable for forecasting personnel demand (Prescott, 1991). While demand takes into account existing labour market conditions and

general economic scenarios, need is devoid of economic considerations and is an expression of professional goals (Prescott, 1991). Using this approach, occupational needs are forecast by using *market signalling*, which can be undertaken either through consensus procedures or a key informants survey (Wong et al., 2004). This involves collecting information and expert opinions from those who are directly involved and contributing to the field. Informants make hiring decisions and are familiar with likely demand and supply (Wong et al., 2004). Campbell (1997) considered this approach as appropriate to gather significant labour information in a reasonable time from the most legitimate sources in the labour market.

Job advertisement analyses provide another avenue to utilise market signalling. This approach focuses on the skills in demand in the labour market, which can be analysed along with the qualifications that are most sought-after by employers. The approach yields an idea about what skills and qualifications are currently in demand in a specified occupation (Wong et al., 2004). However, the market signalling approach has been criticised as impractical because it cannot guarantee that the expert informants sharing their opinions are homogeneous in the assumptions they are making; a weakness that may provide unviable and inaccurate forecasts (Agapiou, 1996). Furthermore, the method provides a forecast of labour need rather than labour demand — existing market conditions are completely neglected, and no economic constraints are taken into account (Prescott, 1991). The market signalling approach is also criticised because estimates can be self-serving when a professional group promoting their own agenda is involved (Prescott, 1991). In summary, most scholars concede that there are difficulties in calculating and achieving accurate results when forecasting manpower (El Achkar, 2010; Richardson & Tan, 2007; United Nations, 1971; Willems, 1996).

Despite the limitations of the market signalling method, it is an appropriate measure of workforce requirements for an up-and-coming profession like OHS because limited resources can be put to use where they are *needed* the most, rather than *demanded* for various reasons. In addition, the method can be used successfully in conjunction with other long-term forecasting methods to attain specific goals. Using dual approach is significant for the policy makers as it provides comprehensive information for education and career planning process (Wong et al., 2004). For instance, Kao and Lee (1998) surveyed firms in Taiwan to understand future soft skill needs in the manufacturing industry, in addition to measuring labour demand using the applied regression method. Hopkins (2002) found merit in the method as policymakers can analyse labour market conditions and skills that are strategically important during conditions of economic growth and they can use the information when they are planning to bridge a mismatch between demand and need. Section 3.8. concludes the chapter.

3.8. Chapter Conclusion

The OHS profession is in its formative stages in many different countries. This chapter has explained the multidisciplinary nature of OHS and a justification for OHS as a valid profession. The OHS generalists play an important role in improving the level of organisational safety maturity and the OHS management approaches by integrating the OHS performance to the organisational goals. Therefore, the OHS generalists require an array of competencies, particularly soft skills in achieving their OHS targets. The recently crafted INSHPO Capability Framework outlines the qualifications, skills, and competencies required in different generalist roles, and serves as a guide to the member countries in designing OHS qualifications and building their OHS generalist workforce.

Very little research on appropriate educational models or qualification frameworks in OHS has been carried out, but, due to its interdisciplinary nature, borrowing the CBE model of education from the medical field and applying it to design OHS qualifications seems appropriate. Continuing professional development remains an under-researched area in the OHS profession, and the stark absence of frameworks or guidelines for implementing effective CPD weakens the field. Thus, borrowing a suitable CPD model from other disciplines to develop contemporary CPD activities for OHS professionals is necessary. Since the OHS profession in New Zealand is still developing, with a small and often inadequately trained OHS generalist workforce, it is preferable to focus on the professional needs approach, rather than conventional occupational demand models, to ascertain future demand for OHS generalists. The next chapter discusses the research methodology used in conducting this study and details out the data collection and data analysis methods.

Chapter 4: Research Methodology

4.1. Introduction

The previous chapter discussed theories and concepts pertinent to the research topic. This chapter describes the methodology used for conducting this study. The chapter begins by explaining the research aim that guided the formulation of the research questions. Then a justification towards using the pragmatic epistemological approach and convergent parallel mixed method is provided. Further, the three phases of study design are illustrated and the data collection procedure is discussed. The chapter explains how the qualitative and quantitative data analyses were conducted using NVivo and SPSS software. Finally, the issues related to the validity and reliability of the study and the ethical considerations are addressed.

4.2. Aims and Objectives of the Study

Based on the literature review conducted in Chapter 2 and Chapter 3, this study aims to assess the current status of the profession and to explore the gaps and challenges that lie on the developmental path of New Zealand's OHS profession. Chapter 2 traced the evolution of growth of OHS as a profession and its current status in New Zealand after the enactment of the HSW Act 2015. The chapter then elaborated on the training and education pathways available in New Zealand for OHS professionals for their professional development.

In Chapter 3, a review of the literature scrutinised the nature of OHS as a profession and examined the strategies that OHS generalists apply within the larger legislative framework.

The concept of competencies among OHS generalists and the INSHPO Capability Framework were discussed. A discussion on OHS qualifications and CPD initiatives along with the suitable method to ascertain demand for OHS generalists was conducted.

These chapters highlighted a need on the one hand, to understand the stakeholders' perspectives on wider issues and challenges the profession is dealing with, both on the demand and the supply side of the profession and, on the other hand, the strength of the current workforce of OHS generalists in terms of its demographic composition, professional development, and perceived competencies.

The five specific research questions that the study addresses are as follows:

1) What are the general features of the OHS profession in New Zealand?
2) Using the INSHPO capability framework, what are the current competency gaps across all levels of the general OHS profession in New Zealand?
3) What do current and future demands look like for general OHS professionals across all levels of the profession in New Zealand?
4) What are the current capacity gaps in the general OHS profession in New Zealand?
5) What are the current and future barriers to building a competent general OHS workforce, and how can these barriers be overcome?

To answer research questions 1 and 2, both qualitative and quantitative methods were used while research questions 3, 4 and 5 were answered using only the qualitative method. Section 4.3 discusses the theoretical justification for adopting mixed methodology for conducting this study.

4.3. Theoretical Orientation and Approach

Different paradigms have evolved over time as a measure of conducting research, of which the *positivist paradigm* and the *interpretivist paradigm* are prominent (Creswell, 2014; Denzin & Lincoln, 2011). These paradigms provide contrary viewpoints and therefore offer different methodologies for conducting inquiries (Creswell, 2014). The combination of both the methodologies in the form of a mixed methods approach has become a common method; one that has been used in this study under *pragmatic paradigm*. These paradigms and their advantages and disadvantages have been discussed below along with a rationale for selecting mixed methods to conduct this study.

The positivist paradigm favours ontological realism, objective epistemology and quantitative methodology, all of which are part of a conventional and popular method of conducting studies in the physical sciences (Creswell, 2009; Neuman, 2007). The researchers believing in a single objective reality belong to this paradigm, as they seek to establish causal factors to explain reality as it exists (Bryman, 2008; Neuman, 2007). It facilitates 'neutral' data collection and its statistical presentation, which leads to fact-finding and theory building (Johnson & Onwuegbuzie, 2004). This approach claims that research participants can answer questions independently of the researcher and therefore such research generates impartial outcomes (Oliver, 2010). However, in this study, the positivist approach alone was not adequate due to its focus exclusively on closed questions. Such questions do not permit obtaining rich data by asking follow-up questions and probing the reasons for the occurrence of the phenomena under study.

On the other hand, the interpretivist paradigm is based on relativist ontology, constructivist epistemology, and uses qualitative methodology (Gray, 2018; Kekeya, 2019). Interpretivism

acknowledges the distinction between natural and social realities and sees multiple realities as an outcome of different perceptions (Gray, 2018; Guba & Lincoln, 1994). Therefore, sense-making in a specific context takes place in three ways: (1) the researcher and participants using their own experiences and observations to assign meaning to a phenomenon; (2) making meaning out of written and printed documents; and (3) using language as a symbolic medium to transfer intention from one person to another, where understanding is generated and a common meaning-making takes place (Cohen, Manion & Morrison, 2011).

However, the interpretivist approach is criticised for lacking validity and reliability due to researcher bias in the meaning-making process (Johnson & Onwuegbuzie, 2004). Though the critics of the interpretivist approach argue that it leads to highly subjective results applicable only for a short duration and in specific contexts (Cohen, Manion & Morrison, 2007), this approach acknowledges that results are not universally generalisable but have contextual meaningfulness and that research bias is inevitable (Schumacher & Gortner, 1992). As this approach recognises the significance of subjectivity in meaning-making, exploratory investigation within this study was made possible. However, this approach alone was insufficient to comprehensively answer all the research questions.

Due to the weaknesses mentioned, this study engaged the mixed method approach that is a combination of both positivist and interpretivist approach. Johnson and Onwuegbuzie (2004) explained mixed methods as an attempt by the researcher to integrate quantitative and qualitative approaches and methods. Combining qualitative and quantitative methods allowed enlarging the scope of the research by asking both close-ended and open-ended questions. On the other hand, using either the quantitative or the qualitative method by itself would have restricted the investigation.

> The goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both in single research studies and across studies. If you visualize a continuum with qualitative research anchored at one pole and quantitative research anchored at the other, mixed methods research covers the large set of points in the middle area. (Johnson & Onwuegbuzie, 2004, pp. 14–15)

The justification for using the mixed methods in this study is further strengthened by research from Creswell (2015) and Greene, Caracelli, and Graham (1989). Creswell (2015) advocated the use of a mixed method to gain a complete picture of the phenomena under study. A complete understanding of the phenomena such as demographic composition, level of professional development and competencies among the OHS generalists' workforce was gained through a combination of a close-ended survey and stakeholder semi-structured interviews; which together permitted measuring the phenomena statistically and probing the underlying reasons through interviews. Greene et al. (1989), based on their empirical review, recommended using a mixed methods approach if the method fulfils any of the purposes – triangulation, complementarity, development, initiation, and expansion. The purpose of using mixed method for this study was *expansion* "to increase the scope of inquiry by selecting the methods most appropriate for multiple inquiry components" (Greene et al., 1989, p. 259).

The mixed-methods approach was considered appropriate for this study as: 1) the qualitative method was used to explore the gaps and challenges in the profession by interviewing different stakeholders; and, 2) a quantitative survey was conducted to statistically estimate the demographic composition, professional development and perceived competencies among the OHS generalists.

The first question addresses the need to explore the gaps and challenges faced by the OHS profession in its development. The qualitative method helped to explore how the OHS

profession currently compares to a mature OHS profession and the issues and barriers being faced in its development. Thus, the competency issues among the OHS generalists, issues pertaining to demand and adequacy of supply of competent OHS generalists and the capacity gaps and barriers within the profession, were discussed with the interview participants. The in-depth discussion provided the participants sufficient time to share their experiences, perspectives, and opinions (Johnson & Onwuegbuzie, 2004). This approach assisted in gathering a variety of perspectives from a range of stakeholders actively contributing to developing the OHS profession within their respective fields. A further probe of interviewees on the issues of interest led to new insights that were infeasible using a quantitative approach. Therefore, the interpretivist approach facilitated collecting different perspectives and combining them to inductively reach a holistic meaning-making.

The second question, on the other hand, demanded an objective study of the phenomena for two reasons. First, this inquiry needed to understand the phenomena as they exist. For example, the current demographic composition of the workforce was suitable to collate, measure and present statistically. Second, estimating the demographic composition, the level of professional development, and the perceived competencies among the current workforce of OHS generalists needed a larger sample of participants to enable the application of the results to wider OHS generalist workforce. As the number of generalist OHS workforce in the country is approximately 3,500, the appropriate sample size was decided to be 200-250 respondents. Recruiting this number of professionals for interviews was neither feasible nor desirable due to time and resource constraints and the nature of inquiry required in terms of close-ended questions. Therefore, the quantitative survey method was used.

The theoretical foundation of the mixed method approach is based on the pragmatic paradigm (Tashakkori & Teddlie, 2003), as it validates the use of mixed and multiple methods (Creswell & Clark, 2017; Howe, 1988; Johnson & Onwuegbuzie, 2004). The ontological assertion of this paradigm is that there can be single or multiple realities that are waiting to be discovered (Creswell & Clark, 2011) and the epistemological underpinning of pragmatism states that all knowledge can be gathered by experience by one's interaction within the world (Kaushik & Walsh, 2019) Pragmatism allows the researcher to abandon the dichotomies forced by objectivity and subjectivity, and positivism and interpretivism (Biesta, 2010; Creswell & Clark, 2011). This approach enabled the use of both qualitative and quantitative methods to benefit from the strengths of both interpretivism and positivism as the nature of the research questions demanded. It also helped in achieving triangulation in the results as discussed in the next section.

4.3.1. Triangulation

Triangulation is a concept applied in research to eliminate the limitations of using quantitative and qualitative methodologies alone, and to ensure validity and reliability of the findings (Campbell & Fiske, 1959). Triangulation plays an important role in regulating the data and minimising bias in the findings and thus it establishes the validity and reliability of the outcomes (Cook & Reichart, 1979).

Out of the four methods of triangulation — data source, method, investigator and theoretical — described by Denzin (1970), the present study used *data source* and *method* triangulation to make the research results robust, valid and reliable. While the data triangulation ensures credibility by collecting data from "different time periods, locations or perspectives" (Natow, 2020, p. 161), the method triangulation is achieved by studying the same phenomena using

more than one method (Polit & Beck, 2012). Data triangulation in this study was achieved by recruiting stakeholders operating in different fields within the OHS profession who possessed vast experience and had unique perspectives. These combinations of different perspectives helped the researcher collect rich and unbiased data.

Triangulation achieved through mixed methods leads to results that may converge, complement or diverge (Tashakkori & Teddlie, 2003). In this study, method triangulation was used for the first two research questions. The interview participants were asked questions related to current features of the OHS profession and competency gaps in the general OHS workforce to explore their unique perspectives to explore the 'why' and 'how' of the said phenomena. The survey questions, on the other hand, sought to estimate the demographic composition, level of professional development, and the perceived competencies among the practising general OHS professionals in New Zealand as they exist. Thus, the survey and interviews both studied similar phenomena, albeit with different research motivations. The study intended to obtain *complementary triangulation* and to get a complete picture of the features and competency gaps. The next section discusses the methodology used and its rationale.

4.4. Research Methodology

4.4.1. Concurrent Nested Design as a Mixed Method

A concurrent nested design within the convergent parallel mixed method was used for conducting the study. The convergent parallel mixed method is a type of mixed methods design in which qualitative and quantitative data are collected simultaneously and then the findings are integrated to produce an inclusive analysis of the research topic (Creswell,

2014). The concurrent nested design was used to collect the data. Barnes (2019) explained this approach as a design where one research method dominates the overall study, while another research method is used to either answer a portion of the research questions or to focus on a smaller group of participants within the larger group.

This study used qualitative semi-structured interviews as the dominant method, complemented by a quantitative survey to study specific phenomena. The semi-structured interviews were used to explore stakeholders' perspectives on all the research questions. The quantitative survey was used in research questions one and two to allow statistical estimation of various phenomena with the aim of expanding the scope of the study. Thus, for research questions one and two, both qualitative and quantitative methods were used, and for research questions three, four and five, only the qualitative method was used.

Semi-Structured Interviews

Qualitative, semi-structured interviews were conducted first as part of the data collection process. A qualitative interview is "an interview, whose purpose is to gather descriptions of the life-world of the interviewee with respect to interpretation of the meaning of the described phenomena" (Kvale, 1983. p. 174). Semi-structured interviews are a qualitative method that is useful for conducting an in-depth examination and analysis of the phenomena with a limited number of cases (Maarouf, 2019). In fact, an in-depth interview is one of the most important tools for gaining human understanding and exploring specific issues in detail (Fontana & Frey, 2000).

> Semi-structured interviews can make better use of the knowledge-producing potentials of dialogues by allowing much more leeway for

> following up on whatever angles are deemed important by the interviewee. (Brinkmann, 2014, p. 286)

The semi-structured format of the interview was chosen because it provided flexibility to probe further the issues of relevance by expanding on interviewees' responses and gaining required depth in the discussion (Rubin & Rubin, 2005). This interview format also enabled the researcher to gather rich data, ask for clarifications and to discuss complex topics in detail (Maarouf, 2019).

Quantitative Survey

An online survey was conducted to enable a statistical estimation of the demographic profile and mapping of professional development among the general OHS workforce in New Zealand. The survey questionnaire, before its distribution among respondents, was piloted among a few OHS stakeholders not part of the survey respondents, but no significant amendments were suggested. The survey was also used to measure perceptions of competencies among the OHS generalists. The online platform was chosen for being a common and popular platform of collecting quantitative data (Lazar & Preece, 1999; Saleh & Bista, 2017), having advantage of prompt distribution and response (Saleh & Bista, 2017). The survey method allowed the use of statistical measurements of the phenomena, and data collection took place with minimum researcher bias, thus enabling impartial outcomes (Oliver, 2010). Section 4.5. explains the design of the research.

4.5. Research Design

As stated earlier, the study was designed based on convergent parallel mixed method. The study took place in three stages (Table 4.1.). The Stage One involved conducting a literature review which helped to identify existing gaps in knowledge. This was followed by Stage Two, data collection: an online survey and semi-structured interviews. In Stage Three, the data was analysed using SPSS (version 26) and NVivo (version 12.0) software for the quantitative and qualitative data respectively, and the findings were presented.

Table 4.1. The Three Stages of the Research

Stage One **Research setting**	**Stage Two** **Data collection**	**Stage Three** **Data analysis**
Studied relevant documents	Recruited participants for the survey	Manually entered survey data into SPSS software
Reviewed academic literature to find gaps in knowledge	Published online survey	Transferred interview transcripts into NVivo software
Decided research aims	Recruited participants for interviews	Coded and recoded interview data until clear themes emerged
Formulated research questions and designed data collection instruments- online questionnaire and interview questions/schedule	Conducted semi-structured interviews	Recorded memos in the NVivo
Selected research participants	Prepared interview transcripts	Ran Descriptive Statistics tests such as Frequencies and Crosstabs tests on survey data in SPSS software for analysis
Addressed ethical concerns	Received participants' approval of transcripts before analysis	Presented the qualitative and quantitative findings in a separate chapter

4.6. Data Collection Procedures

Breitmayer, Ayres and Knafl (1993) assert that sampling techniques used to recruit participants are determined by the research methods used in the study. However, Sandelowski (1995) maintains that the purpose of each of the methods may be different in a mixed-methods study and therefore the choice of participants under each method must follow a distinct sampling rationale. The sampling techniques used for interviews and the online survey are given below.

4.6.1. Participant Recruitment for Interviews

This study aimed to gather perspectives of different stakeholders in the OHS profession in New Zealand. Therefore, interview participants were selected using purposive sampling. Many researchers have advocated purposive sampling for obtaining crucial and exclusive information that otherwise cannot be acquired from alternate sources and for gaining specific insights into various phenomena from information-rich sources (Maxwell, 1996; Onwuegbuzie & Leech, 2007; Patton, 1990). Participants were selected from various stakeholder groups: academics, OHS professionals, leaders of prominent OHS organisations and OHS recruiters. Stakeholders are the groups or individuals that either affect or are affected by the organisational objectives (Freeman, 1984). Clarkson (1995) defined stakeholders as those whose continuous participation is vital for the continuance of an organisation. In the context of the OHS profession, stakeholders are those individuals representing peak organisations and who are engaged in developing the profession in their respective capacities. The interview participants were chosen based on their level of

knowledge, experience and expertise in their respective fields. This helped in gaining variation in the sample for obtaining rich information and capturing multiple perspectives.

Recruiting the identified participants was an uncomplicated process as these individuals are renowned in their field of work, with their contact information available in the public domain. Potential participants were contacted directly by email invitation (see invitation sent in Appendix VI). Overall, twelve participants were contacted, of whom two turned down the invitation. All the interviews were conducted one-on-one through Zoom, which was a convenient, fast and secure platform for conducting interviews because the spread of Covid-19 in the community disrupted physical movement and the ability to meet during the data collection phase.

The identity of the interview participants is kept confidential and therefore only the broad profile of the interviewees is presented (see Table 4.2.). The next section explains the sample size recruited for the interviews.

Table 4.2. Research Participants' Demographic Characteristics

	Anonymised participant ID	Field of work	Participant role	Gender	Interview duration
1.	Participant A	OHS professional	H&S advisor	Male	57 minutes
2.	Participant B	OHS professional	H&S consultant	Male	54 minutes
3.	Participant C	OHS professional	H&S manager	Female	39 minutes
4.	Participant D	OHS academic	Professor	Male	1 hour 13 minutes
5.	Participant E	HR/Leadership	Director	Female	44 minutes
6.	Participant F	HR/Recruitment	CEO	Female	50 minutes
7.	Participant G	OHS Leadership	Director	Female	50 minutes
8.	Participant H	OHS Leadership	CEO	Male	1 hour 20 minutes
9.	Participant I	OHS professional	H&S general manager	Male	52 minutes
10.	Participant J	OHS Leadership	H&S consultant	Male	40 minutes

Note. All the interviews were conducted face-to-face via Zoom.

Abbreviations. CEO, chief executive officer; HR, human resources; H&S, health and safety.

4.6.2. Sample Size for Interview Participants

Marshall (1996) advocated that an acceptable sample for qualitative studies is the one that answers the research questions satisfactorily so therefore reaching data saturation should be the aim in determining the appropriate sample size for a study. However, the sample size for this study was determined *a priori.* A maximum sample size of ten semi-structured interviews was considered feasible due to ethical considerations related to time and resource constraints. Sim, Saunders, Waterfield and Kingstone (2018) argued that *a priori* determination of optimum sample size is not feasible in qualitative studies as the saturation of thematic information is best determined when the data collection is underway so that the sample can be expanded accordingly. However, the authors recognised the practical implications that may lead researchers to decide their sample size in advance. The section below explains the recruitment of the survey respondents.

4.6.3. Survey Participants Selection and Sampling

In addition to conducting interviews, an online survey targeting general OHS professionals was published and distributed. The quantitative approach was aimed at selecting a representative sample from the target population that could produce results applicable on wider target population (Marshall, 1996). The targeted participants for the survey were practising OHS generalists in New Zealand who were recruited using purposive sampling. Purposive sampling helps in gathering exclusive information and gaining specific insights into various phenomena from information-rich sources (Maxwell, 1996; Onwuegbuzie & Leech, 2007; Patton, 1990). The current OHS workforce in New Zealand is around 4,500 professionals (HASANZ, 2019). However, this survey was aimed only at the general OHS

workforce which has approximately 3,500 general professionals (HASANZ, 2019). The target sample was decided to be 200 to 250 participants, to ensure accuracy of the results.

The online survey questionnaire was distributed to OHS professionals through the stakeholder organisations: the New Zealand Institute of Safety Management (NZISM) and the New Zealand Safety Council (NZSC), which collectively have around 2,000 OHS professionals registered as members. NZISM published the survey advertisement in their newsletter (dated 27/01/2021) providing the survey uniform resource locator (URL) and quick response (QR) Code to their members (see Appendix VII).

The survey received 33 initial responses, an extremely low response rate of approximately 3%. Subsequently, the survey was advertised on NZISM's social media platforms: LinkedIn and Facebook pages. This step was taken to make the survey available to OHS professionals who are not registered members of NZISM and to ensure an equal chance of participation in the target population.

This step increased the total completed responses to 53, with 11 responses remaining "in progress". This was still a low rate of the response given the size of the target population. Every click on the survey link was counted as a "response in progress" if left incomplete by a participant, or as a "recorded response" if completed. However, the total number of 64 responses shows that the link was opened by only 64 OHS professionals, which indicated that potential participants have either survey fatigue or a lack of interest in participating in the study. Quantitatively, the response was disappointing and affected the statistical representation and generalisability of the results. The data collection tools are discussed in the following sections.

4.7. Data Collection Instruments

4.7.1. Interview Question Schedule

The preparation for designing the interview schedule began with reading relevant academic literature and government reports, and consulting with health and safety professionals and stakeholders operating in the profession. The issues that needed to be explored were identified after a thorough literature review and background study of New Zealand's OHS profession. Thus, the interview discussion with the stakeholder participants revolved around the following key issues (See Appendix V for detailed questions):

1. general progress made by the OHS profession in New Zealand
2. critical competencies and competency gaps among OHS generalists
3. current and future demand for OHS generalists
4. capacity gaps within the general OHS profession
5. barriers to the development of the general OHS profession
6. suggestions to overcome these barriers.

As the participants were drawn from different fields such as academics, recruitment organisations, OHS bodies and senior OHS professionals in New Zealand, the questions asked were aimed at eliciting their opinion and perspectives based on their experiences in their field of work. Therefore, in the interviews the broad discussion remained the same for each, but the questions were modified as per the respective employment background of each interviewee such as OHS recruitment, OHS academics, and leadership in OHS bodies. This helped the discussion based on their experience in the field that brought diverse perspectives together. Thus, the interview question schedule became a flexible guide to keep discussion

on-track and simultaneously enable in-depth discussion. Section 4.7.2. explains the survey questionnaire design.

4.7.2. Survey Questionnaire

To develop the survey questionnaire, a study of documents describing the INSHPO Capability Framework and the Australian OSH BoK was completed to frame questions regarding required knowledge and competencies. The questions in the survey were centred around the following themes (See Appendix II):

1. demographic details
2. OHS roles and experience
3. OHS qualifications and affiliations
4. OHS knowledge
5. technical competencies
6. core competencies
7. behavioural competencies.

An online survey was used due to its cost-effectiveness, pace, and ease of handling a large database (Sheehan & McMillan, 1999; Uhlig, Seitz, Eter, Promesberger & Busse, 2014). The survey was designed using Qualtrics software, Version (5/2021) provided by the Auckland University of Technology (AUT). The Qualtrics software was used due to its built-in tools for designing and the easy accessibility of the Qualtrics survey on laptops and mobile phones for user-friendly experiences. Once the required data were collected, they were entered into the respective software for data analysis as discussed in Section 4.8.

4.8. Data Analysis

4.8.1. Qualitative Data Analysis

Thematic analysis was used to analyse the qualitative data collected from the interviews. Braun and Clarke (2006) define thematic analysis as "a method for identifying, analysing and reporting patterns (themes) within data" (p. 79). This analysis was deemed appropriate because the study involved multiple perspectives and an enormous amount of rich data and was promising for the researcher to discover unanticipated insights (Braun & Clarke, 2006). This method involves searching for common strands of words and ideas within the interviews which convey similar meanings that shape into themes (DeSantis & Ugarriza, 2000). Inexperienced researchers can use thematic analysis because it is easy to learn, has fewer theoretical and technical intricacies (unlike other methods) - but still can render a detailed account of an issue under investigation (Braun & Clarke, 2006).

After the collection of data, the researcher transcribed the interview responses verbatim. Lincoln and Guba (1985) suggest increasing the credibility of findings by carrying out member checks; therefore, a member check was conducted by inviting participants to edit and comment on their transcripts before these were analysed. Three out of ten participants made minor changes and approved, and two participants approved without changes. Before beginning the analysis, the transcripts were transferred to the NVivo software. Basit (2003) advocates the use of software while analysing data as it makes sorting, organising and reorganising the data less cumbersome. The NVivo software (version 12.0) allowed the researcher to follow systematic processes in achieving a comprehensive analysis (Alasuutari, 2010) and made the analytical procedure replicable and verifiable because the researcher used the standardised format (Campbell, 2020). Thus, NVivo made it easier for the researcher

to navigate through the enormous amount of data in order to make effective use of information provided by interview participants.

The thematic analysis was based on the reflexive approach. This approach does not use themes fixed prior to the analysis of the data; rather it proceeds inductively towards theme formation (Braun, Clarke, Hayfield & Terry, 2019). All the interview transcripts were repeatedly read to bring out meaning and patterns across the dataset, while the initial themes were generated by systematically arranging and highlighting data carrying similar meanings.

In NVivo 12.0, the term '*node'* is interchangeably used to denote 'theme'. The nodes in NVivo were defined by two key parameters: (1) files; or (2) references. *File* refers to a participant transcript or a document. *References* are blocks of data in the transcripts or documents. The references carrying similar meaning are put in one node (theme). Thus, nodes reveal the level of significance of a particular theme in terms of the number of references and the number of files (Campbell, 2020). This process established a rigour-based hierarchy of themes, which made the research credible and dependable (Campbell, 2020). Sub-themes were created within themes to identify more detailed information across the transcripts. Themes and sub-themes were organised and given appropriate names for answering the research questions and the findings were presented.

The qualitative findings in the form of themes and sub-themes, and the interview participants' narratives are presented in Chapter 6. Section 4.8.2. discusses the process of quantitative data analysis.

4.8.2. Quantitative Data Analysis

The number of survey responses generated was 64, of which the recorded responses were 53. Version 26.0 of the SPSS software suite was used for quantitative analysis of the survey responses. The data were analysed by referencing Greasley (2008) due to the lack of previous experience in conducting quantitative data analysis. The responses were manually entered into the SPSS file. The data were cleaned by double-checking and identifying any numerical errors made during entry. The coding instructions were assigned to the variables in the data depending on whether the variables were classified as interval, ordinal or nominal variables. To analyse the data, the *Descriptive Statistics* tests such as *Frequencies* and *Crosstabs* were run in the Data Editor window. The descriptive statistics helped in description of quantitative data in graphical form to show trends and frequencies within the data. The results were generated in the Output Viewer of SPSS in the form of bar charts and pie charts. The tables were imported from the Qualtrics software output. The quantitative findings are presented in Chapter 5. The next section discusses the validity and reliability of the study.

4.9. Validity and Reliability of the Study

Validity is a significant issue in both quantitative and qualitative research. Alshenqeeti (2014) described validity as the extent and manner through which a study is able to investigate the concepts it aims to measure, while Denzin (1970) applied two broad types of validity, internal and external, to qualitative studies. Internal validity ensures that the data is collected to answer research questions central to the study without deviating to irrelevant topics, while external validity exhibits the generalisability of the results across other subjects (Alshenqeeti,

2014). Thus, research validity is actively pursued to ensure an unbiased collection of data and generalisability of the results. There are four factors that may compromise the validity of a study:

- the researcher
- subjects participating in the project
- the situation or social context
- the methods of data collection and analysis. (Brink, 1993, p. 35)

Internal validity was controlled by minimising the researcher's bias. The data was collected using non-leading questions so that the interviewees had sufficient opportunity to think and present their views. The interviewees' bias was minimised by reminding them of the nature and purpose of the research, and that helped them have an open conversation. The participants had the opportunity for sharing their views and clarifying the meaning of the terms towards common understanding, as well as to ask questions or add any information they wished at the end of the interviews. The data collected were interpreted in an impartial manner without influencing outcomes.

For external validity, both the semi-structured interviews and the quantitative survey were used for two research questions. Mixed methods help the researcher to triangulate results, which establishes the validity of the findings (Greener, 2008; Molina-Azorin, 2016). Maarouf (2019) indicated that the results of qualitative findings are context-specific and not generalisable to other areas; the present study was conducted in the New Zealand context of OHS, and therefore, the work possesses a specific utility applicable within the domestic OHS profession.

Selltiz, Wrightsman and Cook (1976) define reliability as "concerned with the consistency, stability and repeatability of the informants' accounts as well as the investigators' ability to collect and record information accurately" (p. 182). Reliability is maintained to ensure that the study outcomes are replicable and consistent. Replicability implies that conducting same study using similar methods would generate consistent results. To maintain the consistency and replicability of the study, a detailed methodology was determined, and steps used for data collection were followed. These included:

- using a consistent method of collecting data throughout the study
- recording and note-taking during the interviews
- transcribing the interviews verbatim
- transferring the data to the relevant software, SPSS or NVivo
- analysing the data based on pre-identified aims and objectives of the study; and
- Creating an audit trail during data collection and analysis.

Koch (1994) explained that an audit trail shows how decisions are made by the researcher, and the justifications for these decisions are an important component in the qualitative data processing. The raw data collected in the current study are recorded and stored in the form of video and audio recordings, transcripts, reflexive journal entries, memos describing how nodes were arranged and rearranged, and a codebook. This is to ensure that the study outcomes are replicable and consistent (Sandelowski, 1986). The potential ethical issues were given due consideration and addressed, discussed in Section 4.10 following.

4.10. Ethical Considerations

Cohen et al. (2007) suggested that researchers should follow high ethical standards while conducting studies, because engaging with participants amounts to an intrusion into their lives that costs them time and, depending upon the sensitivities involved, may affect them adversely. The current study's ethical considerations were guided by the Ethics Committee of AUT, and therefore the researcher followed guidelines stipulated in the ethics approval form (see Appendix I) and the AUT *Code of Conduct* (Auckland University of Technology, 2019).

Ethical considerations of note were voluntary participation ensured through obtaining informed consent, participant privacy, and the confidentiality of their information. These are now discussed in detail. As Crow, Wiles, Health and Charles (2006) suggested, the principle of informed consent warrants that those potential participants should have ample information about the study to help them decide their interest in participation. Therefore, the principles of partnership, participation and protection were followed throughout the research process (Auckland University of Technology, 2019).

Informed participation was ensured by providing an information sheet describing the research to both the interview participants and the survey respondents (see Appendices II and III). Voluntary participation was elicited by providing the participants with the Consent Form containing vital information regarding privacy, confidentiality, and anonymity (see Appendix IV). All the participants interested in the study were requested to email the signed consent form to the researcher before their interview. Survey respondents were prompted at the end of the survey that the submission of their response would be counted as their consent. Researcher protection was guaranteed as the interviews took place virtually through Zoom and with the consent of the participants.

Furthermore, interviewees were assured of their privacy and confidentiality both in the Consent Form and verbally at the beginning of the interview. Verbal permission was also obtained from every participant before initiating the recording of the interview. The participants were assured that their personal data would only be accessible to the research team, which included the primary researcher and the thesis supervisors. In addition, the participants were assured that the data would be used only for the purpose of the study.

4.11. Chapter Summary

The method of analysis used in this study was primarily guided by the research questions raised. These seek to understand the status of the OHS profession and to probe underlying issues pertaining to the current state of the OHS profession in New Zealand. The mixed method approach under the pragmatic paradigm was considered appropriate to investigate the research questions and to fulfil different requirements of different research questions. The concurrent nested design under the convergent parallel mixed-methods was used to collect the data. The findings were triangulated using data and method triangulation. The study was conducted in three stages: setting up the study, collecting the data, and analysing the data and presenting the findings. A semi-structured interview format was used to gather qualitative data from interview participants, while an online survey was distributed to OHS generalists through general OHS association platforms.

The participants were chosen from different fields of the OHS profession to obtain comprehensive stakeholders' perspectives enabling data triangulation and lending credibility to the study. The sample for the survey was drawn from the body of practising OHS

generalists. Interview questions were kept to a minimum for the sake of flexibility, and questions were based on the major issues identified from the literature review. Quantitative survey questions were formulated to estimate demographic composition, level of professional development of and competencies as perceived by New Zealand's general OHS professionals. The analyses of both qualitative and quantitative data were completed using NVivo and SPSS software packages, respectively.

Necessary measures, such as triangulation, convergence between research questions and data, member check, and audit trail of the qualitative analytical process, were done to ensure validity and the reliability of the study. Ethical conduct was maintained throughout the study in accordance with the AUT *Code of Conduct (2019)*. Chapter 5 presents the quantitative findings of the study based on the analysis of online survey data.

Chapter 5: Quantitative Findings

5.1. Introduction

The previous chapters described the purpose of undertaking this study, which involves an exploration and examination of current competencies in general OHS professionals, the demand for OHS professionals in New Zealand, and the capacity gaps and barriers the profession is facing on its developmental trajectory, and the research methodology used in the study.

The research was conducted in three phases. First, a literature review was conducted on the OHS profession, OHS generalists, and the demand for, training, and competencies among OHS generalists. A review of New Zealand's OHS profession and its evolution, progression, and current features was undertaken along with the examination of underlying contextual factors. Based on the literature review, a need for exploration and examination of demand for general OHS professionals, existing competencies, and capacity gaps were identified.

In the second phase, data were collected by conducting ten qualitative, semi-structured interviews with OHS stakeholders and an online, questionnaire-based survey. The survey was distributed to OHS generalists practicing in New Zealand through the NZISM and NZSC. The survey was also published on two social media platforms, LinkedIn and Facebook. The number of responses received were 64, out of which completed responses totalled 53 (N=53).

In the third phase, qualitative and quantitative data analyses were conducted using NVivo and SPSS software. Chapter 5 presents the findings based on the descriptive statistical analysis of the survey data collected from the online quantitative survey. The descriptive statistics helped

in description of quantitative data in graphical form to show trends and frequencies within the data. The findings are divided into four sections. The first section illustrates the demographic features of the general OHS workforce. The second section shows the professional development of the general OHS workforce and the third section provides an estimate of perceived competencies as reported by general OHS professionals. The last section analyses the data using cross tabulations. The findings are represented visually, through illustrations[9] such as graphs and tables and interpretations.

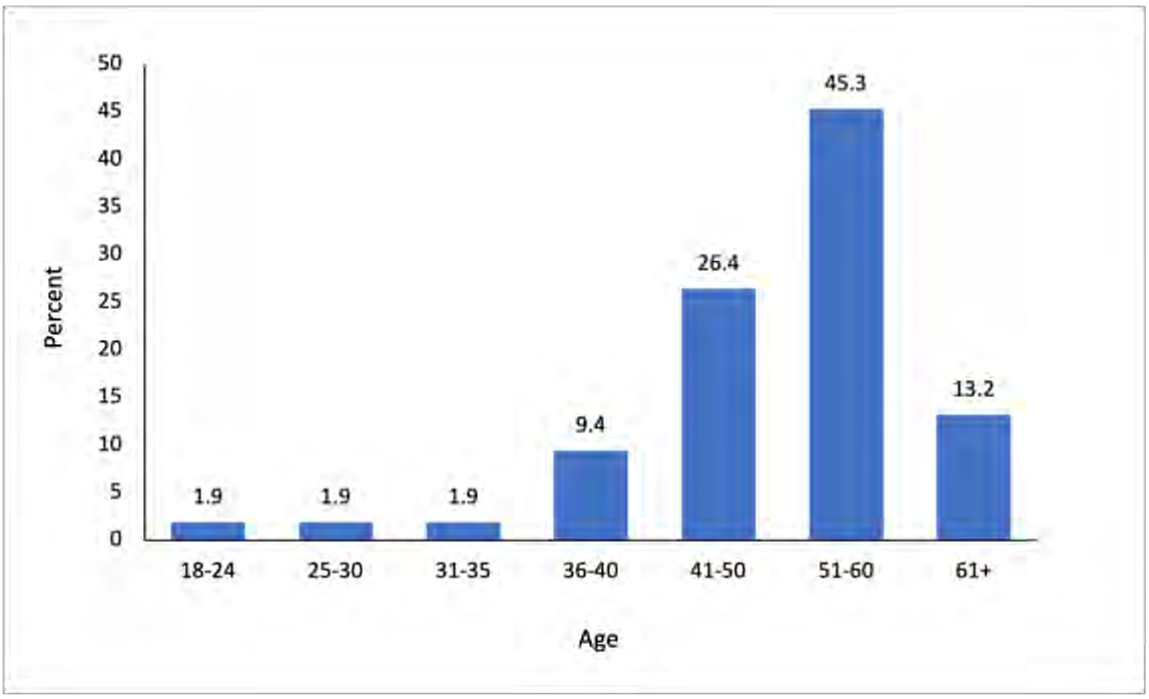
[9] All graphs and tables in this chapter are the original work of the author.

5.2. A Descriptive Analysis of the Demographic Data

5.2.1. Age of Survey Respondents

Figure 5.1. shows that out of 53 respondents, 58.5% of the survey respondents were 50 years or older. In contrast, only 6% of the respondents were 35 or younger. Nearly 37% of respondents were in the 36–50-year-old age bracket. These numbers suggest that the majority of the OHS workforce is mature.

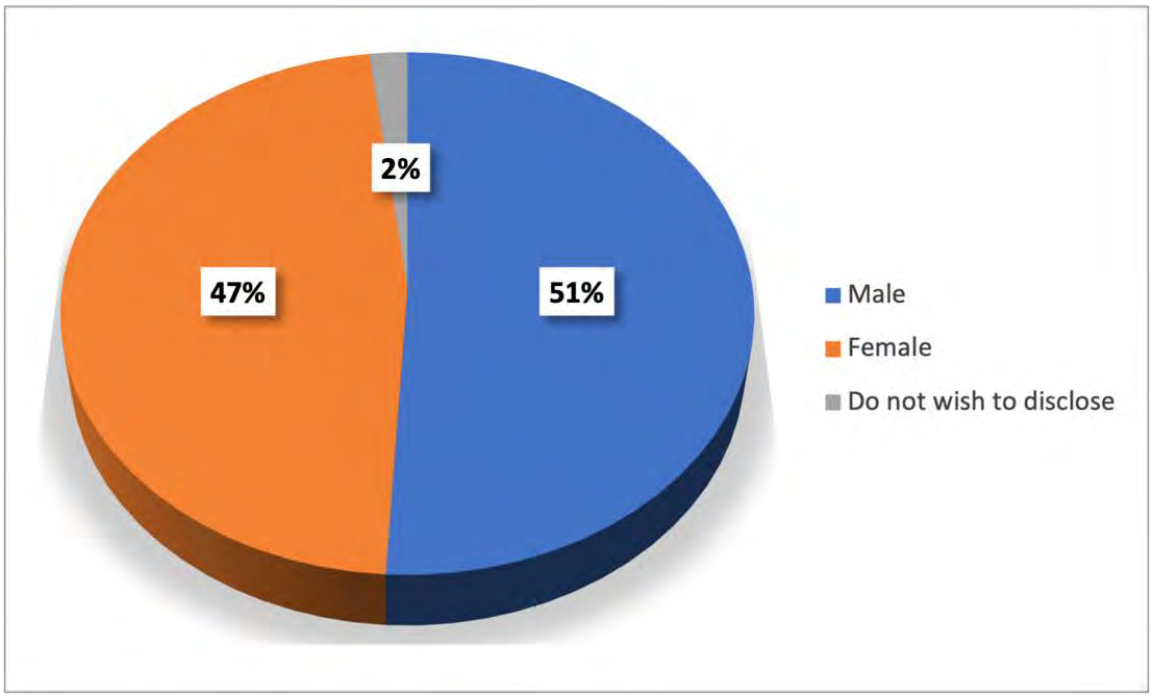
Figure 2.1. Age of Survey Respondents



5.2.2. Gender of Survey Respondents

There was no significant difference in the gender of the respondents, as shown in Figure 5.2. Out of 53 respondents, 51% of the respondents identified themselves as male, and 47% reported as female. Two percent of the respondents did not disclose their gender.

Figure 5.2. Gender of Survey Respondents



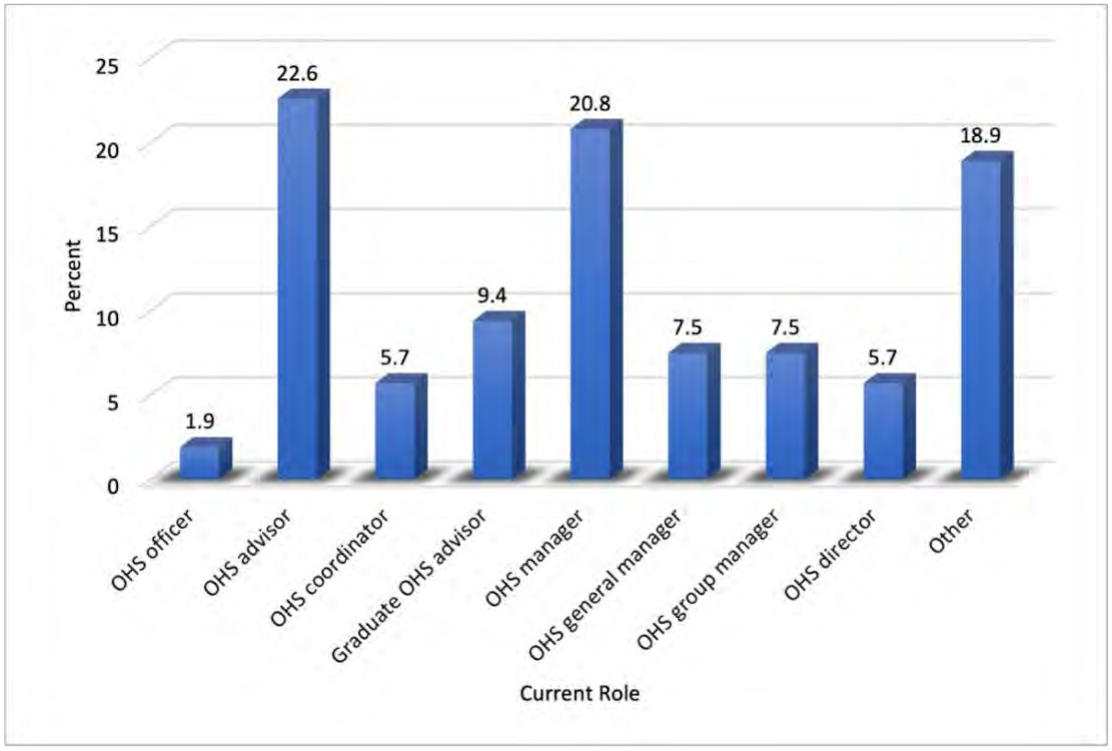
5.3. A Descriptive Analysis of the Respondents' Professional Development

5.3.1. Current Roles

All respondents answered this question. Figure 5.3. shows that nearly a quarter of the respondents were working in the role of OHS advisor, followed by OHS managers.

Cumulatively, less than a quarter of all respondents were working as OHS general managers, OHS group managers or OHS directors. Only about 2% of respondents were working as OHS officers, the beginners' OHS role as per the INSHPO Capability Framework. However, it was interesting to find that nearly 19% of respondents were working in roles other than those mentioned by the Capability Framework. Half of the respondents in 'Other' category were working as in the role of OHS consultant and the remaining were working as 'health and safety manager', 'environmental health and safety manager', 'health and wellbeing manager and 'company owner'.

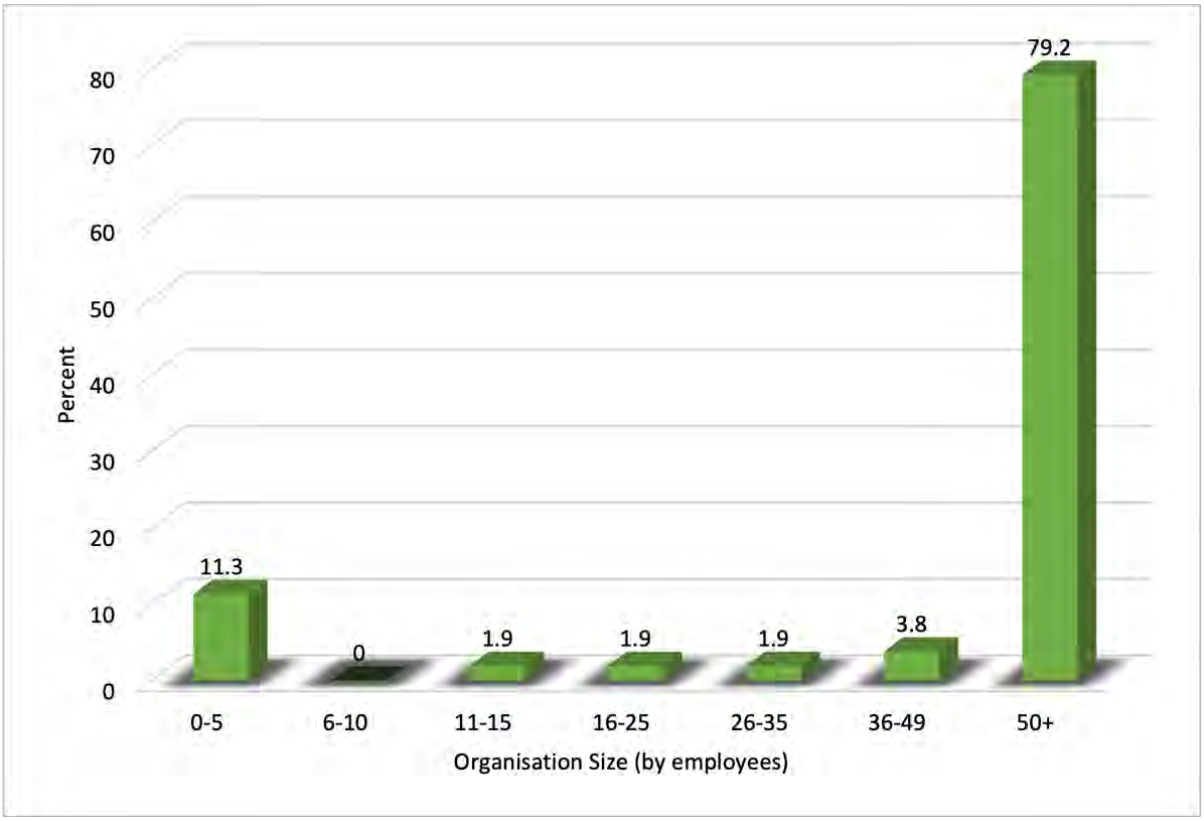
Figure 5.3. Current Roles



5.3.2. The Size of Respondents' Organisations

A large majority (79%) of survey respondents worked in medium to large organisations of 50 of employees or more (Figure 5.4.). Nearly 11% of the respondents worked in small organisations employing fewer than six individuals. The remainder of the respondents worked in organisations with 6 –49 employees. It is interesting to note that in New Zealand, small sized organisations are in the majority, however, this is not reflected in this finding (Statistics New Zealand, 2020).

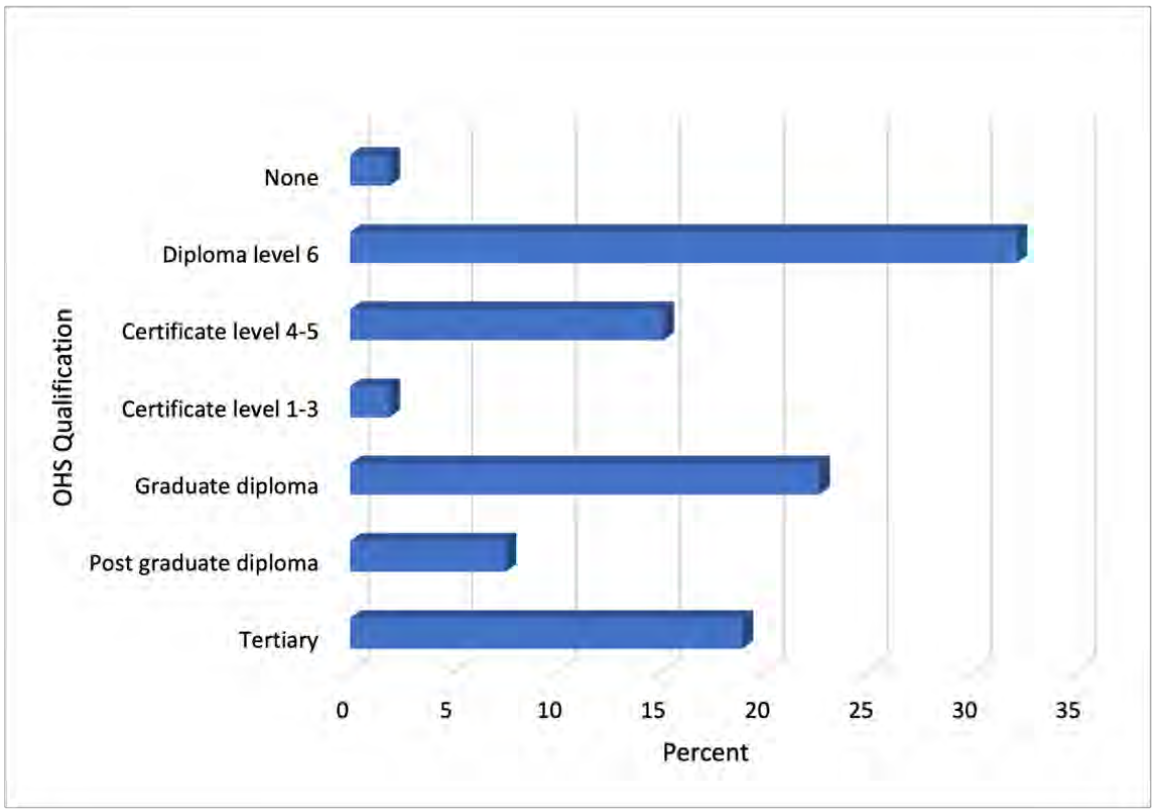
Figure 5.4. The Size of Respondents' Organisations



5.3.3. Respondents' OHS Qualifications

Nearly 98% of respondents reported holding some kind of OHS qualification, half of them possessing tertiary OHS qualifications (Figure 5.5.). Nearly one-third of the respondents reported having earned a level 6 OHS diploma, around 15% of the respondents had earned level 4–5 certificates, and only 2% said they had completed level 1–3 certificates. Three-quarters of respondents reported having qualifications of OHS Diploma level 6 or above.

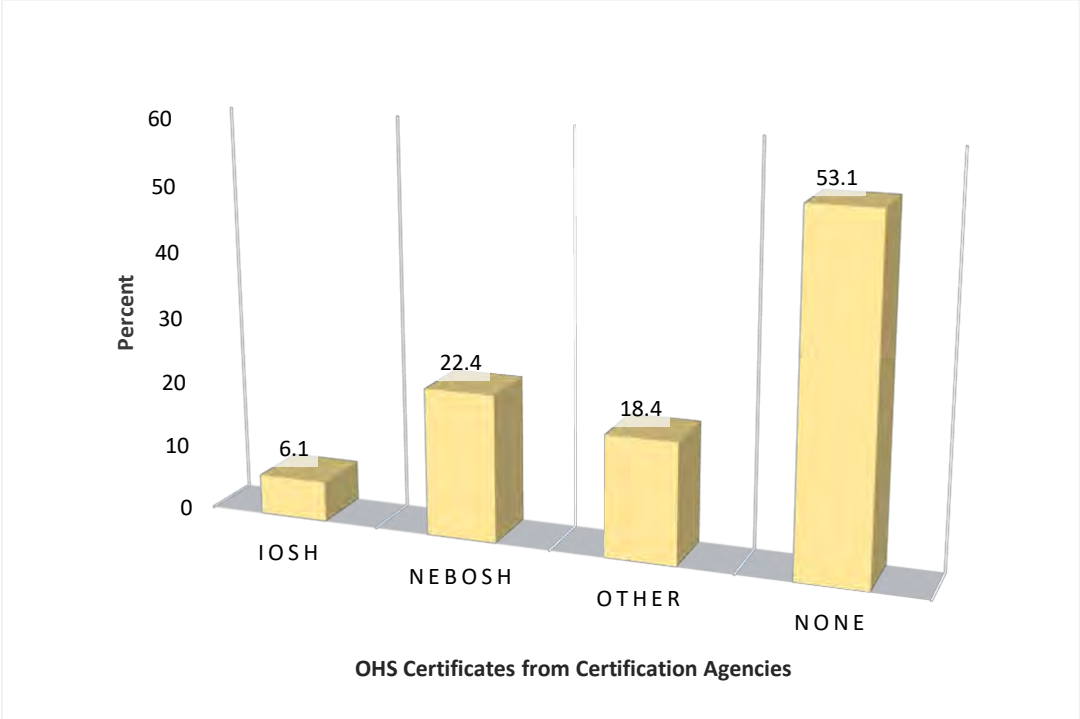
Figure 5.5. Respondents' OHS Qualifications



5.3.4. Respondents with Certificate from Certification Agencies

49 out of 53 respondents answered this question. More than half of the survey respondents did not have any OHS certifications, as shown in Figure 5.6. Only 6% of respondents possessed an Institute of Occupational Safety and Health (IOSH) certificate, while approximately 22% held National Examination Board in Occupational Safety and Health (NEBOSH) training certificates.

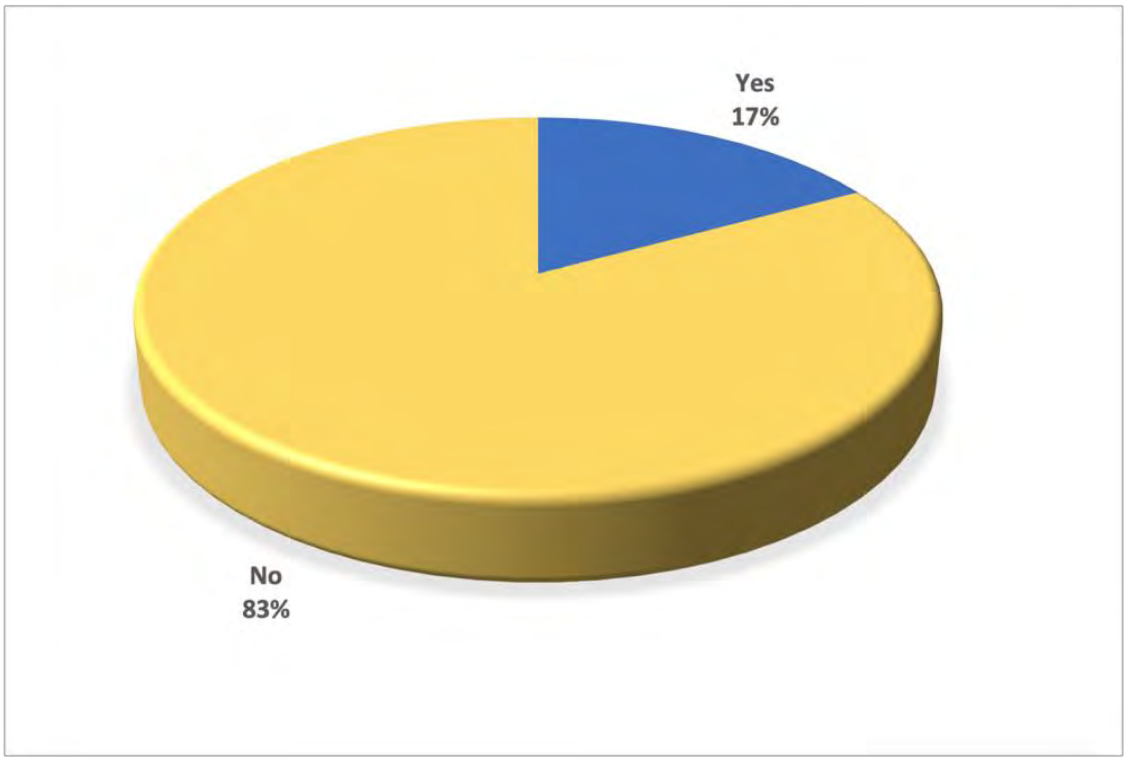
Figure 5.6. Respondents with Certificates from Certification Agencies



5.3.5. Respondents Enrolled in OHS Qualification Programmes

Only 17% of the respondents were enrolled in some kind of formal OHS qualification programme at the time of the survey, while 83% were not enrolled in any OHS education programme (Figure 5.7.).

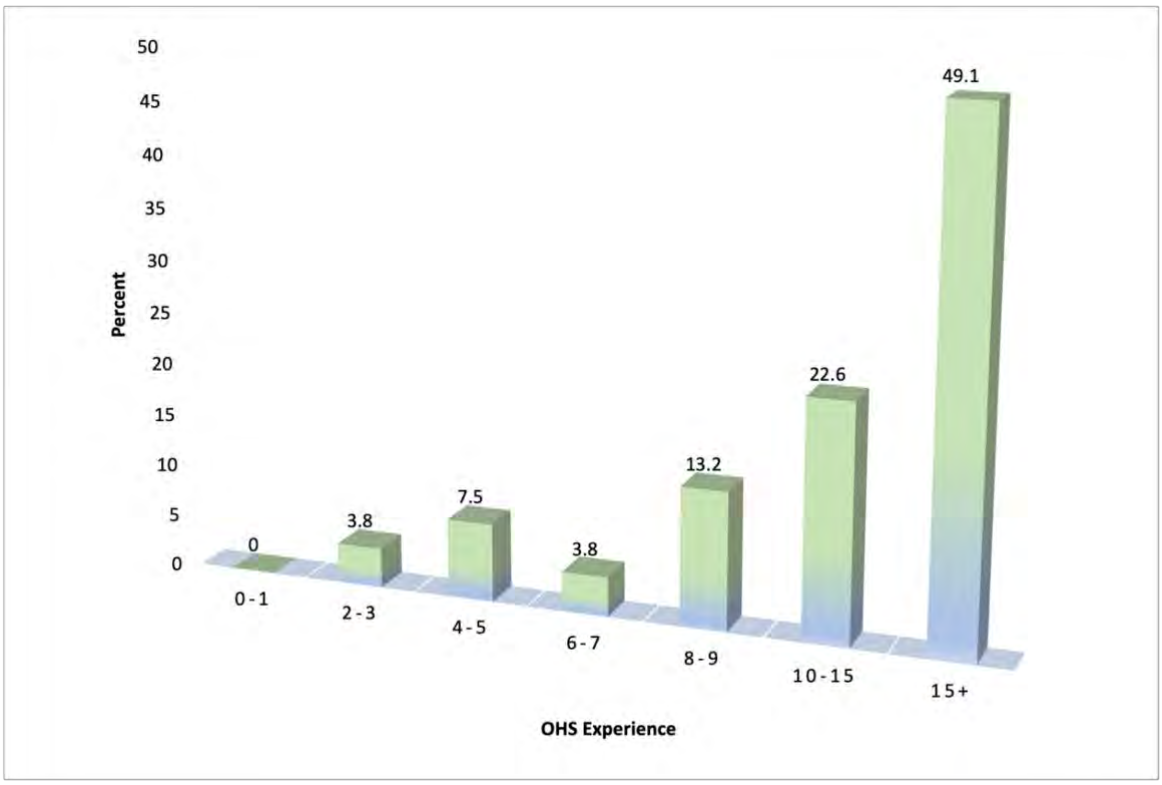
Figure 5.7. Respondents Enrolled in OHS Education Programmes



5.3.6. Respondents' OHS Work Experience

Nearly half of the respondents reported that they had had more than 15 years of OHS industry experience, followed by approximately 23% who had had more than 10 years of experience. It is worth noting that in total 85% of the respondents had 8 years or more of work experience. Only 15% of the respondents had worked 7 years or less in OHS roles (Figure 5.8.).

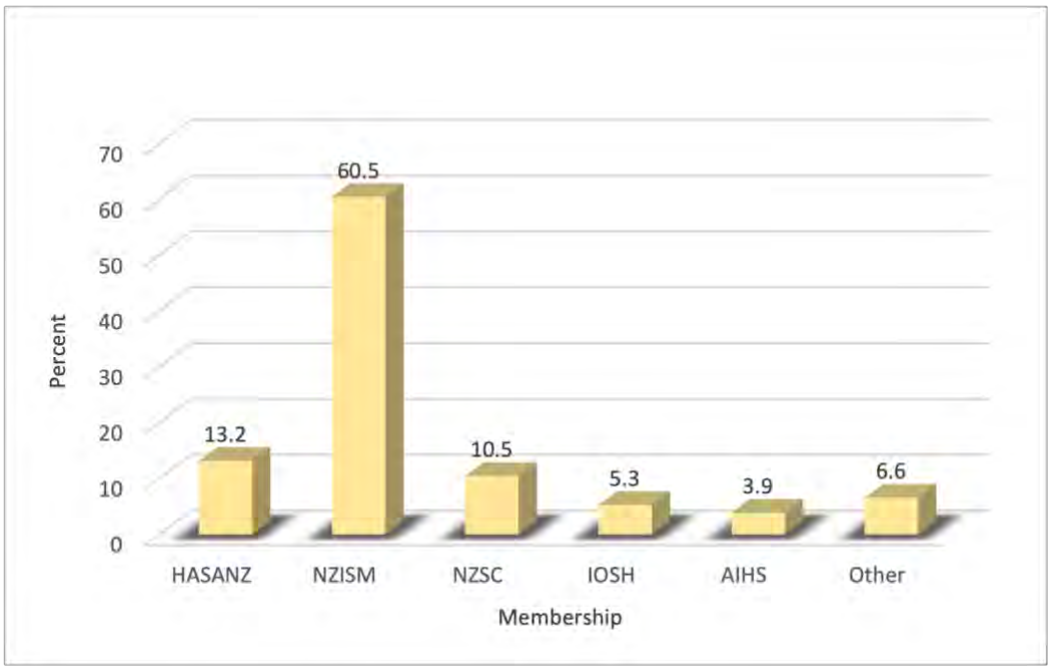
Figure 5.8. Respondents' OHS Work Experience



5.3.7. Respondents' Membership in Professional OHS Associations

Figure 5.9. shows that nearly 72% of the respondents were registered with the NZISM and nearly 19% were registered with HASANZ. Very few respondents were registered with other OHS associations, such as the NZSC (3.8%), the Australian Institute of Health and Safety (AIHS) (1.9%) or others (3.8%).

Figure 5.9. Respondents' Membership in Professional OHS Associations



5.4 A Descriptive Analysis of the Respondents' Perceived Behavioural, Core and Technical Competencies

This section presents an analysis of the OHS competencies and knowledge among the respondents. The competencies have been estimated by recording the respondents' perceived level of difficulty or ease in performing different tasks. The responses were categorised into *easy*, *manageable*, and *difficult.* First, the estimate of three types of OHS competencies- 1) behavioural competencies; 2) core competencies; and 3) technical competencies are presented. Then an analysis of OHS knowledge is discussed.

5.4.1. Respondents' Perceived Behavioural Competencies

A total of 52 out of 53 respondents answered the questions pertaining to the behavioural tasks of their role. Each of these behavioural competencies were measured as they are essential for OHS professionals for instituting successful working relationships at workplace. Table 5.1. shows that more than 90% of the respondents considered themselves competent in tasks demanding collaboration, negotiation, coaching, listening, empathising and professional integrity, all of which are part of behavioural aspects required in the OHS role. More than 50% of the respondents considered these behavioural tasks easy to perform.

Table 5.1. Respondents' Perceived Behavioural Competencies

#	Behavioural Competencies	Easy		Manageable		Difficult		I do not perform this task		Total
1	Collaborate and negotiate with different stakeholders	44.23%	23	50.00%	26	3.85%	2	1.92%	1	52

2	Actively listen and provide constructive feedback	51.92%	27	46.15%	24	1.92%	1	0.00%	0	52
3	Coach and mentor to enhance individuals' abilities towards high performance	55.77%	29	36.54%	19	1.92%	1	5.77%	3	52
4	Exercise empathy and professional integrity in all aspects of business	67.13%	35	30.77%	16	1.92%	1	0.00%	0	52

Collaborating and Negotiating with Stakeholders

Half of the respondents perceived this task as only manageable. About 44% respondents found it easy to collaborate and negotiate with stakeholders. However, close to 4% of the respondents perceived this as being a difficult part of their role.

Actively Listening and Providing Constructive Feedback

Around 52% of the respondents found it easy to listen and give feedback, while 42% perceived this task as only manageable. About 2% of the respondents reported that the task was difficult.

Coaching to Enhance Individual Abilities

Approximately 56% of the survey respondents considered coaching and mentoring to be easy and a part of their role, while 37% of the respondents reported that mentoring or coaching one-to-one to achieve higher performance was manageable. Only 2% of the respondents found it difficult to perform this task.

Exercising Empathy and Professional Integrity

Having empathy and integrity at work was perceived as easy by 67% of the survey respondents, while 31% considered it manageable. Two percent of the respondents found it difficult to empathise or exercise professional integrity in their work situations.

5.4.2. Respondents' Perceived Core Competencies

The core competencies described in Table 5.2. relate to the strategic aspects of the OHS professional's role. All 53 of the survey respondents completed this question. Table 5.2. shows that for more than half of the respondents, the tasks involving core competencies were either manageable or difficult to perform. Each of these core competencies were measured, as these form the essential set of skills for influencing and making decisions at workplace.

Table 5.2. Respondents' Perceived Core Competencies

#	Core Competencies	Easy		Manageable		Difficult		I do not perform this task		Total
1	Develop strategy, identify emerging issues and development opportunities	47.17%	25	39.62%	21	11.32%	6	1.89%	1	53
2	Influence and manage both internal and external stakeholders and build relationships	26.42%	14	66.04%	35	5.66%	3	1.89%	1	53
3	Make decisions on strategic and tactical issues and communicate them effectively	26.42%	14	60.38%	32	7.55%	4	5.66%	3	53
4	Plan and communicate change, and assess impact of change on OHS practice	28.30%	15	58.49%	31	7.55%	4	5.66%	3	53
5	Analyse risk related data, correlate it with company/industry data and communicate outcome effectively	30.19%	16	45.28%	24	13.21%	7	11.32%	6	53

Developing Strategies and Identifying Issues and Opportunities

Approximately 47% of the survey respondents reported that they were able to develop strategies and identify issues and opportunities with ease. Close to 40% of the respondents were able to manage these tasks, but not necessarily with the same level of ease. However, about 11% of the respondents said they found the tasks difficult to perform.

Influencing Stakeholders and Building Relationships

26% of the respondents felt they were able to exert influence on internal and external stakeholders with ease and build relationships smoothly. Two-thirds of the respondents described being able to manage these tasks, while approximately 6% of the survey respondents perceived stakeholder relationship management as a difficult task.

Making Strategic / Tactical Decisions and Communicating Them

Only 26% of the respondents found it easy to perform these tasks, while 60% of the respondents described the tasks as manageable. Nearly 8% of the respondents felt that decision-making and effective communication was difficult. A further 6% reported that they did not perform these tasks in their current roles.

Planning, Communicating and Assessing Changes

About 28% of OHS respondents found this task to be easy, while approximately 58% reported being able to manage the task. Close to 8% of the respondents described change planning, communicating changes and assessing the impacts of changes as difficult to achieve in their roles.

Analysing Risks and Communicating Outcomes

A total of 30% of the respondents reported that analysing risks and related data, correlating these with company/industry data, and communicating outcomes of the analyses were easy to achieve. However, 45% perceived these activities as manageable. These activities apparently were the most difficult part of their role for many respondents; around 13% of them reported that these tasks were difficult to perform.

5.4.3. Respondents' Perceived Technical Competencies

The tasks related to technical competencies are divided into three parts as illustrated in Tables 5.3., 5.4. and 5.5. This section considers the whole range of technical competencies as they underpin the advisory ability of the OHS professional which is dependent on good understanding of technical concepts and ease with their application.

As shown in Table 5.3., around half of the respondents found the technical aspect of their role easy to perform. Approximately 40%–45% of the survey respondents said the same tasks were manageable. Very few respondents described these tasks as being difficult to perform (2%–6%). A few respondents (4%–6%) reported that they do not perform these tasks as part of their roles.

Table 5.3. Respondents' Perceived Technical Competencies (1)

#	Technical Competencies (1)	Easy		Manageable		Difficult		I do not perform this task		Total
1	Develop OHS policy in consistency with business strategy in my organisation	49.06%	26	41.51%	22	5.66%	3	3.77%	2	53
2	Interpret and apply OHS laws and regulations to my organisation	52.83%	28	39.62%	21	1.89%	1	5.66%	3	53
3	Apply Plan-Do-Check-Act framework as part of OHS management	47.17%	25	43.40%	23	3.77%	2	5.66%	3	53

4	Design and implement safety audits, inspections and checks	54.72%	29	39.62%	21	1.89%	1	3.77%	2	53
5	Evaluate OHS performance by assessing control effectiveness and identifying areas of improvement	49.06%	26	45.28%	24	1.89%	1	3.77%	2	53

The tasks described in Table 5.4. relate to technical aspects of OHS roles and 52 out of 53 survey respondents completed the related questions. In comparison to other technical tasks (see Tables 5.3. and 5.5.), more respondents found these tasks manageable. For instance, *scanning unanticipated and unexpected risks* was perceived as an easy task by only 30% of the respondents, while 56% considered it manageable, and 10% thought this activity was difficult. Similarly, only 21% of the respondents found *devising mitigation strategies and allocating resources* easy, 58% respondents considered it manageable and nearly 12% ranked the task as difficult.

Table 5.4. Respondents' Perceived Technical Competencies (2)

#	Technical Competencies (2)	Easy		Manageable		Difficult		I do not perform this task		Total
1	Continuously scan unanticipated and unexpected risks in my industry/sector and assess their potential impact on my organisation	30.77%	16	55.77%	29	9.62%	5	3.85%	2	52
2	Identify and define risks and assess the level of risks	53.85%	28	44.23%	23	1.92%	1	0.00%	0	52
3	Prioritise risks by influencing risk perception and get necessary support for mitigation plans	28.85%	15	55.77%	29	11.54%	6	3.85%	2	52
4	Devise mitigation strategies and allocate resources	21.15%	11	57.69%	30	11.54%	6	9.62%	5	52
5	Establish a risk reporting system to send regular risk-related reports and escalate matters related to unexpected and emerging risks	40.38%	21	42.31%	22	7.69%	4	9.62%	5	52
6	Understand, evaluate and articulate the interdependencies of OHS risks and business risks and its organisational	40.38%	21	46.15%	24	7.69%	4	5.77%	3	52

	implications									
7	Inform crisis management situations to maintain business continuity on event of major incidents	28.85%	15	50.00%	26	7.69%	4	13.46%	7	52

Table 5.5. also illustrates tasks involving technical competencies. Half or more respondents reported that they found it easy to *apply appropriate procedures to deal with incidents*, *recognise differences between direct and indirect causes of incidents* and *prepare reports on incidents*. However, 45% of the respondents found *applying appropriate procedures to deal with incidents* manageable, 43% respondents found *recognising differences between direct and indirect causes of incidents* manageable while 39% respondents found *preparing reports on incidents* manageable. Further, only 18% of the respondents said it was easy *to identify documentary evidence to support legal defences* while 35% respondents considered it as manageable task. Nine percent of the respondents considered it easy to *undertake cost analysis to assess impacts of an incident* while 45% of the survey respondents found it manageable. Approximately 18% and 11%, respectively, cited these two tasks as difficult. In contrast, 26% and 34%, respectively, reported they did not perform these tasks in their current roles.

Table 5.5. Respondents' Perceived Technical Competencies (3)

#	Technical Competencies (3)	Easy		Manageable		Difficult		I do not perform this task		Total
1	Apply appropriate procedure to deal with incidents of different severities	52.83%	28	45.28%	24	0.00%	0	1.89%	1	53
2	Recognise difference between direct and indirect causes of incident and identify unsafe conditions	52.83%	28	43.40%	23	1.89%	1	1.89%	1	53
3	Prepare reports on incidents within professional and legal standards	49.06%	26	39.62%	21	1.89%	1	9.43%	5	53

	appropriately categorising the incidents									
4	Identify full documentary evidence to support a legal defence	18.87%	10	35.85%	19	18.87%	10	26.42%	14	53
5	Undertake cost analysis to assess impact of an incident on the business	9.43%	5	45.28%	24	11.32%	6	33.96%	18	53

5.4.4. Respondents' OHS Knowledge

Table 5.6. illustrates various areas of specific knowledge that general OHS generalists are required to be aware of to practise in the role. This knowledge pertains to New Zealand's HSWA Act 2015, WorkSafe policies and procedures, Accident Compensation Corporation (ACC) policies and procedures, ACC accreditation process, international standards of OHS, and health and safety aspects relevant to specific industries and organisations the OHS professional is involved in. All respondents reported they had moderate to very high level of knowledge of the HSWA Act 2015 and WorkSafe policies and guidelines.

Table 5.6. Respondents' OHS Knowledge

#	OHS Knowledge	Very high knowledgeable		High Knowledge		Moderate knowledge		Slight knowledge		No knowledge at all	
1	Health and Safety at Work Act 2015	30.19%	16	41.51%	22	28.30%	15	0.00%	0	0.00%	0
2	WorkSafe policies, guidelines, and procedures	26.92%	14	50.00%	26	23.08%	12	0.00%	0	0.00%	0
3	Accident Compensation Corporation (ACC) procedures	11.32%	6	33.96%	18	41.51%	22	11.32%	6	1.89%	1
4	ACC accreditation procedure for an organisation	15.09%	8	39.62%	21	33.96%	18	9.43%	5	1.89%	1
5	International health and safety standards	11.32%	6	30.19%	16	33.96%	18	20.75%	11	3.77%	2
6	Health and safety	47.17%	25	33.96%	18	16.98%	9	1.89%	1	0.00%	0

	aspects of the industry I am working in										
7	Work processes and procedures in my organisation	50.94%	27	39.62%	21	7.55%	4	1.89%	1	0.00%	0

Regarding the ACC procedures and ACC accreditation process, 86% of respondents accounted for very high to moderate level of knowledge while over 11% respondents had only slight knowledge or no knowledge of ACC procedures and accreditation process. A similar lack of knowledge was evident in the area of international health and safety standards. Although 75% of respondents were very highly to moderately informed, nearly 25% of the respondents had only slight knowledge or no knowledge in this area. Regarding the knowledge specific to respondents' industry and organisation, 98% of respondents reported very high to moderate levels of knowledge, while only 2% of respondents reported that they had slight knowledge of the industry-specific health and safety norms in the country.

The analysis conducted so far was related to single variables. However, Section 5.5. covers the cross-analysis of the data where one variable is compared with another variable to examine their relationship. The change in correlation between the two groups of variables helped in identifying different trends.

5.5. Findings from Cross-Tabulations

Cross-tabulations were performed for those variables that showed significant difference in their outcomes. The first variables were two core competencies related tasks – *influence internal and external stakeholders* and *build strong relationships* and *develop strategies, identify emerging issues and development opportunities*. These two tasks were cross-tabulated with two variables – *OHS experience* and *OHS qualifications* of the respondents.

The purpose of cross tabulation was to determine whether OHS experience or level of OHS qualification have a positive impact on carrying out tasks involving core competencies.

Table 5.7. Core Competencies and Ease of Practice Compared to Years of OHS Experience

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Years of OHS Experience and Influence internal and external stakeholders and build strong relationships	53	100.0%	0	0.0%	53	100.0%

Years of OHS Experience and Influence internal and external stakeholders and build strong relationships

Count

		Influence internal and external stakeholders and build strong relationships				
		Easy	Manageable	Difficult	I do not perform this task	Total
Years of OHS Experience	2-3	0	0	1	1	2
	4-5	0	3	1	0	4
	6-7	1	1	0	0	2
	8-9	1	6	0	0	7
	10-15	2	10	0	0	12
	15+	10	15	1	0	26
Total		14	35	3	1	53

Note. Core competencies in this task include influencing internal and external stakeholders and building strong relationships, both internal and external.

Abbreviations. N, number (of respondents).

Table 5.7. shows the core competencies related tasks – *influence internal and external stakeholders and build strong relationships* performed by general OHS professionals cross-tabulated with the variable *years of OHS experience*. The results show that only 14 out of 53 respondents found these tasks to be easy. Furthermore, Table 13 shows that 12 out of the 14

respondents had more than 10 years of OHS experience at the time the survey was conducted. A total of 35 respondents found the tasks to be manageable, of which 25 had more than 10 years of OHS experience, with six respondents reporting 8–9 years of OHS experience. Three respondents said the tasks were difficult; of these, two had 2–3 years and 4–5 years of OHS experience, respectively, while one respondent had accumulated more than 15 years of OHS experience. It is interesting to note that most individuals who responded that the tasks were easy or manageable had 10 years or more of OHS experience.

Table 5.8. Core Competencies and Ease of Practice Compared with OHS Qualifications

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
OHS Qualification and Influence internal and external stakeholders and build strong relationships	53	100.0%	0	0.0%	53	100.0%

OHS Qualification and Influence internal and external stakeholders and build strong relationships

Count

		Influence internal and external stakeholders and build strong relationships				
		Easy	Manageable	Difficult	I do not perform this task	Total
OHS Qualification	Tertiary	5	5	0	0	10
	Post Graduate Diploma	0	3	1	0	4
	Graduate Diploma	3	8	1	0	12
	Certificate level 1-3	1	0	0	0	1
	Certificate level 4-5	2	7	0	0	8
	Diploma level 6	3	12	1	0	17
	None	0	0	0	1	1
Total		14	35	3	1	53

Note. Core competencies in this task included influencing internal and external stakeholders and building strong relationships.

Abbreviations. N, number (of respondents).

Table 5.8. shows core competency related tasks – *influence internal and external stakeholders and build strong relationships* performed by OHS generalists cross-tabulated

with variable *OHS qualifications*. Out of 53 respondents, 14 respondents reported the tasks as easy, and 35 reported them to be manageable. Out of 14 respondents reporting the tasks as easy, five had OHS tertiary qualifications, three held graduate diplomas and three had Level 6 diplomas. Similarly, out of 35 respondents for whom the tasks were manageable, five had tertiary OHS qualifications, three held postgraduate diplomas, eight had graduate diplomas and 12 had earned Level 6 diplomas. However, three respondents, one each with a tertiary qualification, a graduate diploma and a Level 6 diploma, reported the tasks as difficult. Therefore, while it can be inferred that OHS qualifications tend to confer core competencies, it is difficult to conclude whether any formal qualification is a decisive factor in conferring core competencies.

Table 5.9. Core Competencies and Ease of Practice Compared with Years of Experience in the Role

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Years of OHS Experience and Develop strategies, identify emerging issues and development opportunities	53	100.0%	0	0.0%	53	100.0%

Years of OHS Experience and Develop strategies, identify emerging issues and development opportunities

Count

		Develop strategies, identify emerging issues and development opportunities				
		Easy	Manageable	Difficult	I do not perform this task	Total
Years of OHS Experience	2-3	0	2	0	0	2
	4-5	2	2	0	0	4
	6-7	1	0	1	0	2
	8-9	3	2	2	0	7
	10-15	3	6	2	1	12
	15+	16	9	1	0	26
Total		25	21	6	1	53

Note. Core competencies in this task include strategy development and the ability to identify emerging issues and development opportunities.

Abbreviations. N, number (of respondents).

Table 5.9. illustrates the core competencies related tasks- *develop strategies, identify emerging issues and development opportunities* performed by general OHS professionals cross-tabulated with the variable *years of OHS experience.* Of a total of 53 respondents, 25 found the tasks easy, 21 found them manageable and six respondents found the tasks difficult

to perform, while one respondent did not perform these tasks in their role. It can be seen that most of the respondents reporting the tasks as easy and manageable had 10 or more years of OHS experience. However, half of the respondents who reported the tasks as difficult also had 10 or more years of OHS experience. One respondent with 6–7 years' experience, and two respondents with 8–9 years of OHS experience reported the tasks as difficult. Therefore, no clear correlation between years of experience and core competencies could be established.

Table 5.10. Core Competencies and Ease of Practice Compared with OHS Qualifications

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
OHS Qualification and Develop strategies, identify emerging issues and development opportunities	53	100.0%	0	0.0%	53	100.0%

OHS Qualification and Develop strategies, identify emerging issues and development opportunities

Count

		Develop strategies, identify emerging issues and development opportunities				
		Easy	Manageable	Difficult	I do not perform this task	Total
OHS Qualification	Tertiary	9	0	1	0	10
	Post Graduate Diploma	1	3	0	0	4
	Graduate Diploma	6	5	1	0	12
	Certificate level 1-3	1	0	0	0	1
	Certificate level 4-5	1	5	2	0	8
	Diploma level 6	7	7	2	1	17
	None	0	1	0	0	1
Total		25	21	6	1	53

Note. Core competencies in this task include strategy development and the ability to identify emerging issues and development opportunities.

Abbreviations. N, number (of respondents).

Table 5.10. illustrates core competencies related tasks – *developing strategies, identifying emerging issues and developing opportunities* performed by general OHS professionals cross-tabulated with the variable *OHS qualifications*. Out of 53 respondents, 25 found the tasks easy, 21 found the tasks manageable and six found them difficult. Out of the 25 respondents who reported the tasks were easy, only nine had tertiary qualifications.

Out of the respondents who reported the tasks to be manageable, five held graduate diplomas, seven had earned level 6 diplomas and five had earned level 4–5 certificates, while three held postgraduate diplomas. Out of 6 respondents who reported the tasks to be difficult, one had a tertiary qualification, one a graduate diploma, two Level 6 diplomas and 2 Level 4–5 certificates. The respondents who found the tasks easy had OHS qualifications ranging from tertiary to Level 6 diploma and respondents who found tasks manageable had OHS qualifications ranging from graduate diploma to Level 4-5. However, the respondents who found the tasks difficult also had OHS qualifications ranging from tertiary to Level 4-5 certificates. Therefore, no clear correlation between higher OHS qualifications and respondents' core competencies could be established.

5.6. Chapter Conclusion

The review of the literature suggests that a well-developed OHS profession demarcates a clear career pathway for OHS professionals who play a versatile role in managing OHS in organisations. Such a career pathway is significant in strengthening the general OHS workforce, not only in numbers but also by contributing to competencies of OHS generalists in terms of formal qualifications, work experience and CPD opportunities.

The analysis of quantitative survey data provided findings related to demographic composition, career development and perceived competencies of the OHS generalist workforce. The findings relating to demographic data showed that the OHS respondents of the survey were age mature but were relatively gender balanced. The interpretation of career development data revealed that most of the survey respondents were highly experienced in the OHS field and that almost all the respondents had some level of OHS qualification. Most respondents were working as OHS advisors and OHS managers. The findings related to perceived competencies were in the area of behavioural competencies, core competencies and the technical competencies. All respondents perceived themselves as having behavioural competencies, while a few of them struggled with some core competency-related tasks required by their roles despite having OHS experience and OHS qualifications. However, it is worth noting that most respondents who considered themselves competent in influencing internal and external stakeholders and building strong relationships easy and manageable had an OHS experience of 10 years and higher. Another interesting finding suggested that nearly 25% respondents lacked knowledge of international health and safety standards. The next chapter presents the qualitative findings of the study.

Chapter 6: Qualitative Findings

6.1. Introduction

The previous chapter presented the quantitative findings drawn from the survey conducted among the OHS generalists in New Zealand. This chapter presents the significant qualitative findings that were drawn from the semi-structured interviews with OHS stakeholders. The interviews were designed to explore and understand the specific issues of interest identified during review of the literature in the previous chapters.

Ten interviews were conducted with OHS stakeholders (see Table 6.1). After a detailed analysis of the interview data, ideas significant to this study were identified and arranged. The themes are placed into one of five broad categories corresponding to each of the research questions. Accordingly, a tabular representation of findings within each category is presented. The tables within each category depict the number of participants who presented ideas on the given themes during the interviews. The major themes are also presented graphically. All graphs and tables in this chapter are the original work of the author.

Table 6.1. Research Participants' Demographic Characteristics

	Anonymised participant ID	Field of work	Participant role	Gender
1.	Participant A	OHS professional	H&S advisor	Male
2.	Participant B	OHS professional	H&S consultant	Male
3.	Participant C	OHS professional	H&S manager	Female
4.	Participant D	OHS academic	Professor	Male
5.	Participant E	HR/Leadership	Director	Female
6.	Participant F	HR/Recruitment	CEO	Female
7.	Participant G	OHS Leadership	Director	Female

	Anonymised participant ID	Field of work	Participant role	Gender
8.	Participant H	OHS Leadership	CEO	Male
9.	Participant I	OHS professional	H&S general manager	Male
10.	Participant J	OHS Leadership	H&S consultant	Male

6.2. Qualitative Semi-Structured Interview Findings

6.2.1. Category 1: Stakeholder Perceptions' Regarding the Current Features of the Occupational Health and Safety Profession in New Zealand

This category summarises the findings of first research question regarding the stakeholders' perception of the current features of OHS profession in New Zealand. Seven findings are presented in this category as they relate to the current status of the OHS profession and the OHS generalist workforce in New Zealand. Figure 6.1 illustrates the key themes within this category relating to organisational safety maturity, perceptions about OHS generalists' role, approaches of managing OHS, HSW legislation, INSHPO Capability Framework and wellbeing. Table 6.2 indicates the depth and breadth of discussion as it shows the number of participants who shared their views on these issues and number of times they referred to these topics.

Figure 6.3. Graphical Illustration of Emergent Themes in Category 1

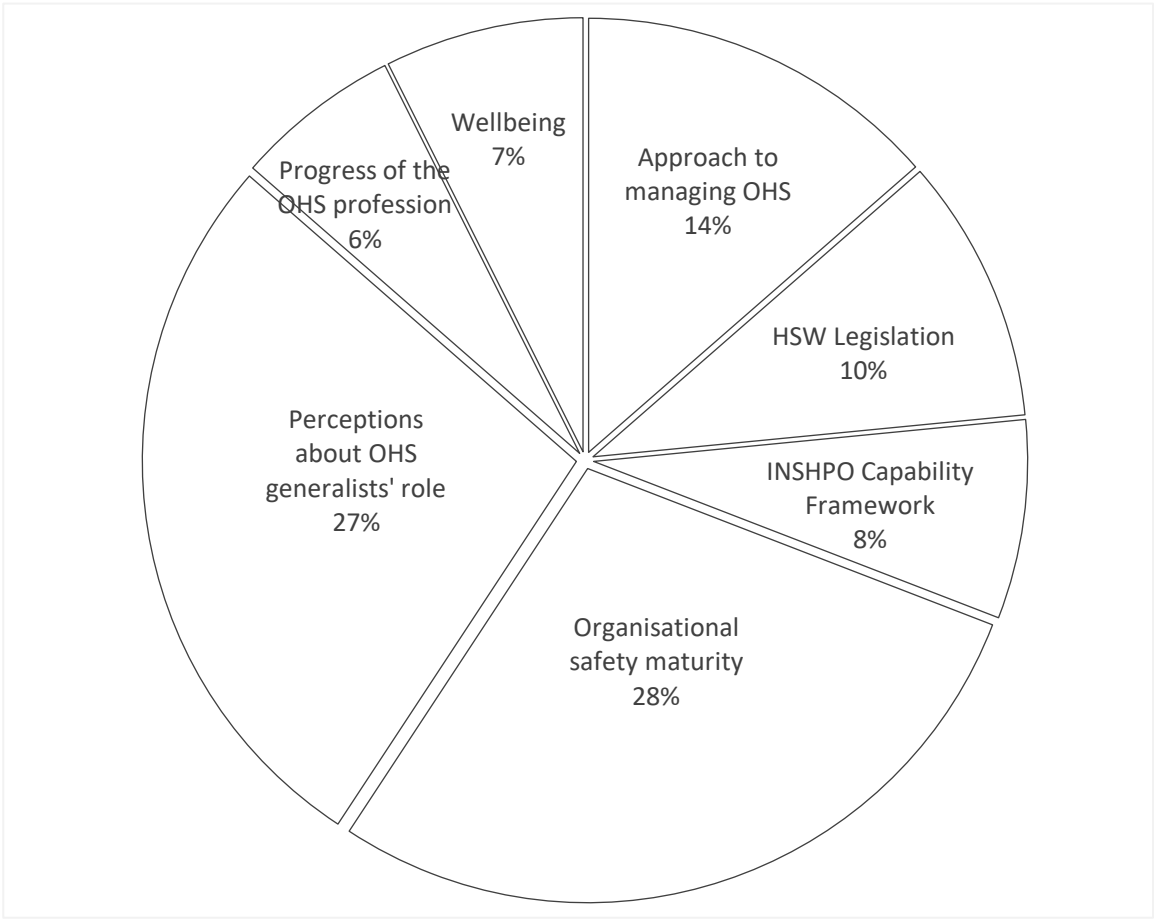


Table 6.2. Emergent Themes in Category 1

Themes	Participants	Frequency of references
Category 1: Features of OHS profession in NZ	10	81
Approach to managing OHS	5	11
HSW legislation	4	8
INSHPO Capability Framework	4	6
Organisational safety maturity	7	23
Perception of risk	4	6
Safety culture	1	2
SMEs	5	14
Perceptions about OHS generalists' roles	8	22
Progress of the OHS profession	3	5
Wellbeing	5	6

Abbreviations. HSW, health and safety at work; SME, small to medium enterprise.

Theme 1: Organisational Safety Maturity

Key informants held a consensus view regarding the safety maturity and the prevalent safety culture in organisations. The predominant view was that industries are very narrowly focussed on complying with the health and safety legislation. The participants agreed that, while there are a few organisations with a good understanding of the significance of health and safety, the majority of them still have a 'tick-box' approach.

> *"Health and safety, very quickly, I think, in the mindset of most people there's defined by and there's on the agenda because there is a piece of legislation that says, we have to" (Participant H).*
>
> *"There are pockets of excellence in New Zealand, but, overall, the general health and safety level would be at that compliant phase, with some of them stretching" (Participant G).*
>
> *"So at the moment, I think that we are between the compliance and reactive and proactive" (Participant G).*

A majority of the participants (7 out of 10 participants) indicated that there is a clear lack of awareness in business organisations of all sizes, and particularly in small and medium-size enterprises, about their obligations with respect to health and safety at work. Participants felt that organisations have a reactive and compliance-focused approach and are mostly unaware of the management's role in improving workplace health and safety, or of the roles of health and safety professionals.

> *"I'm sure there's a multitude of small organisations out there that just don't know what they don't know, and they probably need someone to come in and help them understand that, but what they're doing is that, you know, maybe filling the very basic compliance needs" (Participant E).*
>
> *"They have no idea what [a] health and safety person does necessarily, or they won't know what that person needs to do in their environment" (Participant F).*

Most of the participants (7 out of 10 participants) said that managers, including human resource managers, lack health and safety maturity and are often unaware of the role that OHS generalists play within an organisation. This lack of knowledge about the OHS generalists' role results in unreasonable expectations of these employees/workers.

> *"I don't think our workforce is that mature that they understand that, so they appoint somebody to take the risk away from them, when actually the risk still remains with that individual" (Participant F).*
>
> *"I think there's a bit of understanding that they don't know what they don't know, and therefore, they're getting the professional to help them fill those gaps" (Participant G).*
>
> *"That's [an] interesting question. I think when they hired me, they didn't know. What they wanted was the number" (Participant I).*
>
> *"Well, there's two sets of expectations. One is organisations who haven't yet realised the business benefits of good health and safety, and so they're just looking for somebody to come along and tick some boxes, create some templates and forms and provide them with resource, I suppose, to help them show that they are doing health and safety" (Participant J).*

One participant also expressed the opinion that small- and medium-size organisations often lack trust in the advice given by OHS professionals. Because of such lack of trust, these organisations are at times averse to invest money in better health and safety practices suggested by the OHS generalists. A couple of participants indicated that organisations, especially small and medium enterprises, tended to underestimate potential risks and outcomes, while overestimating their own capacity to deal with such risks.

> *"So, I think a lot of organisations, typically in smaller businesses ... if I only have a very small amount of money to spend on third-party expertise, and the first thing that expert tells me is, 'I can give you this part, but you're going to need to spend money on that part' ... 'Oh. Oh. Are you just trying to sell me more? You're trying to upsell me? You're just trying to make money off me?'" (Participant H).*
>
> *"The principle is the same, that person has the survivor bias, and the big companies, they sort of have the survivor bias as well, and coupled with the fact that both small and big companies don't want to spend money when they think it's kind of money wasted because nothing bad has happened for the last 10 years. And yet there might be a fatality tomorrow" (Participant B).*

However, one participant shared a different view that being a small sized organisation does not affect its capacity to understand and comply with health and safety requirements at work. On the contrary, he asserted that small organisations see people as people, rather than as numbers, and take appropriate measures towards improving workplace health and safety rather than following a 'tick-box' approach.

Theme 2: Approaches to Managing Occupational Health and Safety

Half of the participants commented on the 'tick-box' approach that New Zealand's organisations have towards managing health and safety as indicating a lack of commitment towards improving workplace health and safety. These participants indicated that some management's approaches towards OHS are flawed. For instance, Participant B stressed that the organisations mostly focus on behaviour-based safety measures instead of controlling

hazards. However, their views were disparate, and with no clear correlation for a desirable or an appropriate approach.

> *"I've noticed that hierarchy of controls, that desire just to control the hazard ... it's not absent, but it's very understated ... very understated. So that's what I object to, in this country" (Participant B).*
>
> *"We don't have a catastrophic risk approach in New Zealand, we could have where was it? ... Where the fertiliser factory blew up fairly recently, that was overseas right, we could have one of those in one of our ports quite easily" (Participant C).*

A few participants attributed the flawed approach to the lack of resources available, such as time and funds, in small businesses. Some participants gave examples of how a few organisations they knew were managing OHS in a wrong manner, despite spending money, and how correcting the approaches led to visible benefits.

> *"For a lot of small businesses, it's difficult to give it the time because health and safety is only one of a very, very, very, very large number of things they need to focus on. So, you know they tend to focus more on the compliance, what do I have to do? What am I going to get in trouble for?" (Participant E).*
>
> *"I know of a business that invested over $100,000 or $150,000 on a wellbeing program with a well-known and national provider ... But they now know they have no more money left in the wellbeing budget for anything else ... But that $100,000 has been spent, and it's been spent with good intent. But it's been spent without [a] good diagnosis of what's the problem we are trying to fix" (Participant H).*
>
> *"If you hold people to account for a low number of negatives, that's what they'll give you. So, if you hold them to account for TIFR [time injury frequency rates], then the reporting will be skewed" (Participant I).*

Theme 3: Perceptions about OHS Generalists' Roles

The most common view held by the majority of the participants (7 out to 10 participants) was that an OHS generalist has a supportive role in an organisation. The participants believed that

an OHS generalist should have the ability to understand a range of risks and soft skills to communicate those risks to organisational stakeholders. Several participants (4 out of 10) agreed that OHS specialists possess the technical expertise and qualifications, and are important for solving specific issues within organisations but that it's OHS generalists who usually decide where and when OHS specialists are needed.

> *"So again, we come back to the health and safety generalist, [who] has to be a person who can interpret the data coming at them, look at and interpret the literature" (Participant B).*
>
> *"I think for a company, an organisation, that employs, its risk profile is pretty broad, and it has a range of risks. And to me, the most efficient and effective professional to address those would be an occupational health and safety generalist" (Participant D).*
>
> *"So, when we talk about generalists ... your knowledge of the business, your soft skills, your communication, all of those types of things, become really critical" (Participant E).*
>
> *"But if I'm after a senior executive who's got the ability to see the connections right across, they need access to the expertise, but they don't have to have the expertise" (Participant H).*

Two participants asserted that an OHS generalist is expected to add value to the organisation by proper engagement of all workers, but they try to own all health and safety problems and provide solutions.

> *"The value added to the system is when you're at the point where that's the problem you need fixing, we need to have a profession with a breadth of specialties. That means we can apply the right tool to the right problem. I think the challenge for me sits less ... but they're relatable to the general practitioner. The general health and safety advisor, I think, see themselves, I think quite as singular saints. I think my broad observation, and it's a little bit, maybe challenging or provocative, as I think they're not very good understanders" (Participant H).*

However, contrary to the above statements, Participant C considered the OHS generalist as a "non-role", asserting that, instead of having dedicated health and safety roles, attitudes and knowledge about health and safety should be embedded in all roles within an organisation.

Four participants stressed that the OHS generalist does not need all the range of technical expertise; instead, they should be able to see the connections, locate the core problems (rather than treating symptoms) and make what Participant B called "creative and intelligent judgements" to provide appropriate solutions.

> *"Specialists tend to be very focused and very technically competent in a particular area, but the generalist really needs a good understanding of those risks, common hazards and risks across the workplace, so to me that's the difference here" (Participant C).*
>
> *"I think they're different. I think we need all of them in the system. We absolutely need technical specialist across a number of different fields. And then we also need the generalists who are actually engaging with the business and able to kind of translate and bring it in together" (Participant E).*

The participants acknowledged that given the current New Zealand environment, organisations are not very mature from a health and safety perspective, and therefore the role of the generalist is essential. Three participants drew an analogy between the role of a medical GP and the OHS generalist in relation to medical specialists and OHS specialists.

> *"I think the generalist is still very, very important. Going back to the GP general practitioner comparison, because they can refer issues that they're aware of, but outside their expertise / technical expertise, to the specialists" (Participant D).*
>
> *"But your generalists are the connector, so ... they're all really important roles, and it's important that generalists don't try to work or advise outside the scope of their technical expertise as well" (Participant E).*
>
> *"I think it will take an awful long time for us not to have safety people and so at the moment, there is absolutely, definitely a need" (Participant F).*

"It is a facilitative role. So, somebody has to own health and safety in an organisation" (Participant F).

Theme 4: Wellbeing and Occupational Health and Safety

Half of the participants spoke about wellbeing as a key component of health and safety. Two participants noted that organisations are increasingly recognising wellbeing as an important part of OHS, but they do not necessarily have the right approach towards it. Participant A, having a strong background in connecting Māori culture with workplace health and safety practices, shared that wellbeing in the Māori health and safety has gained increased attention but still the country needs to put in a concentrated effort.

"When Māori health and disability services started to expand in the 1980s 1990s and particularly early 2000s because they bought up those inconsistencies in terms of the data. That's where they started to develop wellbeing frameworks. Not only the statistic of stress injuries incurred by Māori workers, but mental health levels, sense of belonging to the workplace, ability to contribute at home, wellbeing type measures in health and safety"(Participant A).

"What we're seeing is a lot of students or graduates with more broad health qualifications rather than specific occupational health and safety. We see a lot of them really interested in the health and their wellbeing, mental health side of health and safety, which is great because it's obviously really critical" (Participant E).

One participant commented that wellbeing has caught the attention of organisations as an important health and safety issue but the approach to implementing it has flaws. The participant cited an example of a New Zealand organisation that spent a considerable amount of money on employee wellbeing, without being able to diagnose the real issues that affected their employees' wellbeing.

> *"I know of a business that invested over $100,000 or $150,000 on a wellbeing programme with a well-known and national provider ... Fatigue is a really, really significant wellbeing risk. Staying an extra night in a place before you come back could be a really concrete intervention ... But that $100,000 has been spent, and it's been spent with good intent. But it's been spent without a good diagnosis of what's the problem we are trying to fix" (Participant H).*

Of interest was that some participants noted that many organisations have good intentions to ensure employees' wellbeing and they take measures to do this. However, due to a lack of proper understanding of the specific requirements in their business, their wellbeing measures fail to deliver. Additionally, in times of crisis, wellbeing is the first thing to be dropped from an OHS perspective, as it is not integrated into business processes and policy but, instead, wellbeing measures are often implemented as an activity distinct from essential health and safety tasks.

> *"And then one thing that we were doing badly with good intention, when I came here, was around wellbeing. So, we had a person appointed in that role, but really we had no planned strategy on that" (Participant I).*

Theme 5: Health and Safety at Work Legislation

The participants not only indicated flawed implementation of wellbeing measures in workplaces; more than one-third of the participants believed that New Zealand's OHS legislation lacks cultural perspective, and is not aligned with *The Treaty of Waitangi* (1840). One participant stressed the fact that the legislation lacks cultural competency and the Māori values, and that the regulator should keep such values in perspective while carrying out their assessments.

> *“ I think, from a long term growth perspective it's fine. Doesn't have an element of cultural competency built into it, though. So, if we think about Māori values, for example, and treaty where's that built in?” (Participant C).*
>
> *“And I've been talking with [Name hidden for confidentiality] that what you…what you've done is it's colonial legislation that you've just dumped into New Zealand without any kind of thoughts of the Treaty” (Participant I).*

Moreover, the legislation is obscure in terms of its language and not easily understood by small business owners and managers. One participant said that simplification of the language and what is expected is absolutely necessary, but this participant also acknowledged that WorkSafe is doing great work through its toolkit *SafePlus*.

> *“I think the current legislation is still challenging and still unclear in terms of responsibilities for those multiple PCBUs [persons conducting a business or undertaking], so if they are linked to a principle, it's the small business, what is my responsibility? What do I have to do to work with the larger enterprise?” (Participant D).*
>
> *“If you ask any small business owner, you know, they are still probably freaking out and there are certain areas, you're out on a farm or you're storing hazardous substances or you have other critical risks, I’m sure that it’s not easy to understand” (Participant E).*

Theme 6: The INSHPO Capability Framework

Four participants considered the INSHPO Capability Framework an appropriate benchmark to begin with, but also advocated that it should be updated on a regular basis. One participant pointed out that the global framework is based on the OHS BoK that was conceived in 2011, and therefore, its focus on soft skills for OHS generalists is not as rigorous as currently needed.

"I think appealing and incentivising the framework is more important than the content, to be honest, because the content always changes, and it should change" (Participant A).

"I think the INSHPO framework is a good start, if we're going to stay on this trajectory. But I don't think that it's sufficient. I think it's too rigid, and I think it's too slow to develop at a point being" (Participant C).

"... But also, really encouraging agencies to invest in development of their people. But they need a framework to develop their people. From a competency framework as it stands now, doesn't quite hit the mark" (Participant E).

"We know that the INSHPO framework needs to be a living document because it probably is a little bit light in areas of those soft skills" (Participant J).

6.2.2. Category 2: OHS Generalists' Capabilities and Competencies

This category presents the findings of the second research question regarding the current competency gaps within general OHS professionals in New Zealand. Many participants (6 out of 10) highlighted their perceptions that OHS generalists in New Zealand lack competencies in terms of critical thinking, creative thinking and leadership capabilities. Figure 6.2 illustrates the key findings within this category that relate to discussion on soft skills, factors affecting the competencies of OHS generalists, gaps in qualifications and lack of cultural competencies. Table 6.3 indicates the depth and breadth of discussion on these issues, the number of participants who shared their views on these subjects and the number of times they brought up the issue.

Figure 6.4. Graphical Illustration of Emergent Themes in Category 2

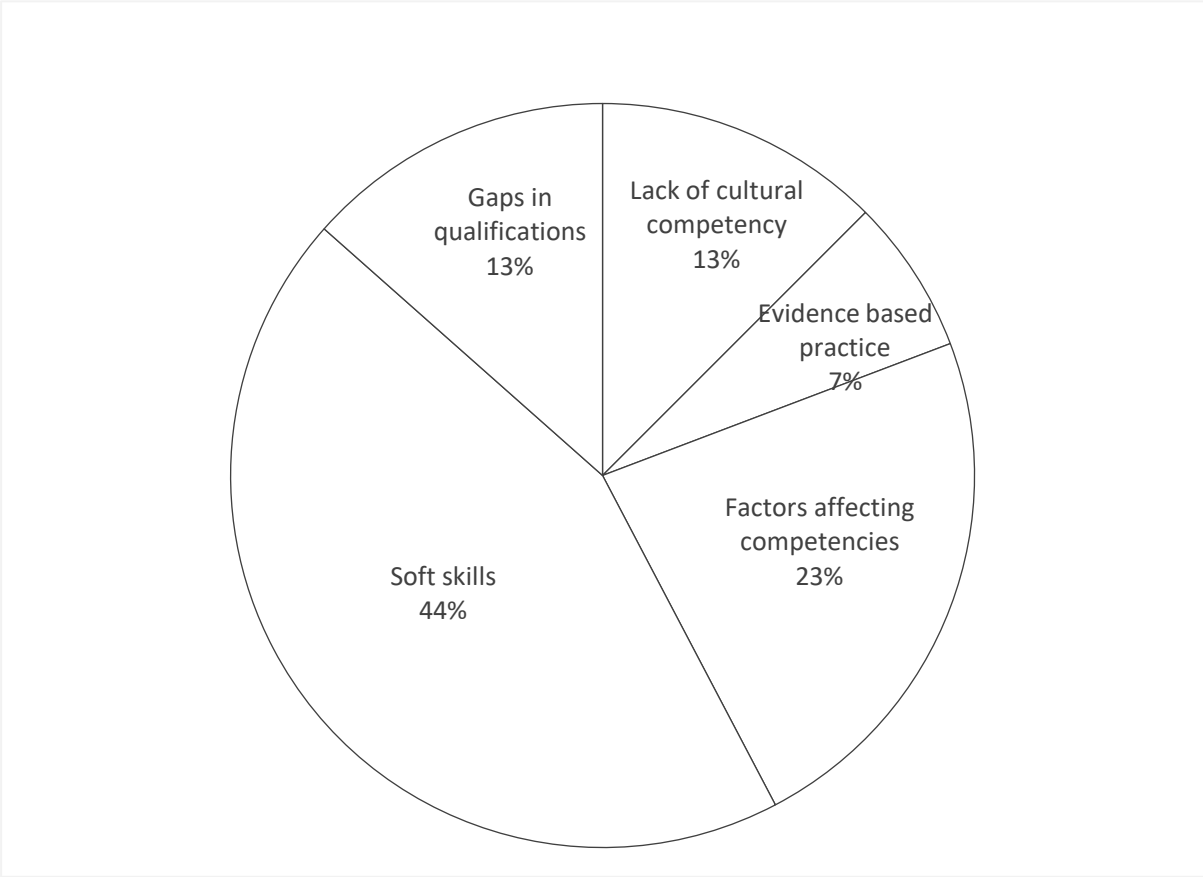


Table 6.3. Emergent Themes in Category 2

Themes	Participants	Frequency of references
Category 2: OHS Generalists' Capabilities and Competencies	10	104
Lack of cultural competency	6	13
• Māori culture	4	10
• Recognition of culture at work	2	3
Gaps in qualifications	5	14
• Availability of OHS qualifications	2	9
• Interest in attaining OHS qualifications	3	5
Evidence based practice	3	7

Themes	Participants	Frequency of references
Factors affecting competencies	8	24
• Experience in OHS roles	5	11
• Organisational leadership	7	12
• Perceptions of own role	2	2
Soft skills	10	46
• Aptitude and attitude	1	1
• Balancing and creativity	2	2
• Business partnering	2	5
• Communication skills	4	4
• Complexities and strategies	3	5
• Critical thinking	3	6
• Empathy and listening	1	1
• Integrity	1	1
• Leadership capability	2	2
• Professional ethics	2	2
• Reasoning and influence	5	9

Theme 1: Gaps in Soft Skills

One of the topics on which a unanimous view emerged was that soft skills are the most significant competency OHS generalists need to apply in their roles. Participants also expressed concerns that the majority of OHS generalists lack these soft skills. Many participants (7 out of 10) correlated soft skills with the non-technical skills that OHS generalists should possess, irrespective of OHS qualifications.

> *"And you're looking for the softer skills as well. This is an area that people are significantly missing at the moment" (Participant F).*
>
> *"So, the qualifications [are] one facet of being a health and safety professional ... you can have as many qualifications as you like, but if you don't have the softer skills to do the job, you won't be successful" (Participant F).*

It is interesting to note that the participants' interpretations of soft skills were all slightly different. Half considered soft skills as akin to reasoning and influencing skills, where generalists have a clear understanding of the situation and can identify the problems. They may or may not be able to solve the problems directly, but they should be able to facilitate solutions. Some participants did agree that a lot of convincing and coaching are required to influence different people within organisations.

> *"They need to be able to understand what the situation is and be able to provide the solutions for that. Now, they don't necessarily have to do the solutions, but they need to be able to facilitate" (Participant F).*
>
> *"And I think it's not just the ability to have influence. You've got to understand what it is you're trying to influence and why" (Participant H).*

Several participants (4 out of 10) emphasised the significance of communication skills because generalists are expected to communicate about risk-based causes and consequences in the business and must possess a problem-solving approach; skills that are lacking in the new generation of OHS generalists. Three out of 10 equated soft skills with an ability to balance and juggle between different roles as situations dictated. Leadership ability and forming partnerships were accredited as significant attributes where OHS generalists can drive the business performance of an organisation.

> *"Some students really struggle with that, and I must admit, the competencies in terms of risk communication we have in our bachelor's degree, for example, but we don't have in our graduate diploma" (Participant D).*

Only 3 participants acknowledged that managing OHS in organisations usually comes with different kinds of complexities, and that generalists need to be equipped with the skills to deal with those complexities. One participant (Participant H) mentioned that soft skills are more than communication or influencing skills, as the latter are only tactical. They correlated

soft skills with strategic understanding of what the OHS professionals are trying to influence and, more importantly, why. So, the professionals need to have the ability to identify the actual problems in order to connect with the right solutions. Generalists, as they move up the career ladder, are also expected to engage and build competencies in others.

> *"As you move up through your career, you are generally dealing with or trying to advise or convince others that are more senior level, so you're starting to look at more sort of strategic picturing [of] how the system might need to work" (Participant E).*
>
> *"And so, the soft skills are important because you need to be able to convey ... to go to bring together those perspectives and hold them on the issue. And the challenge for some health and safety people is they like to be in the middle of the circle. The problem is in the middle" (Participant H).*
>
> *"There was also no joined up strategy as well, so each business was doing its own thing. There was no overarching vision or any of that. So that's what I was able to kind of bring, which I guess is why they employed me was to develop a strategy, to take us on a roadmap" (Participant I).*

Only 3 out of 10 participants believed that soft skills can be acquired through tertiary qualifications, though they also indicated that there are too few relevant qualifications offered in New Zealand.

> *"To do a postgraduate study in any country is about critical thinking and being able to understand scientific papers and the evidence as is, so, to my mind, that is a great competency gap that we have in this country" (Participant B).*
>
> *"Our numbers indicate there's less than 50% of our health and safety workforce that actually have any health and safety qualifications" (Participant E).*

By contrast, 2 participants clearly stated that qualifications may be desirable but not essential as much as soft skills are about OHS generalists thriving in their roles.

> *"So, qualifications are important and it's a set of rules, you know it is just a set of rules, the qualifications, because you have to have understood what's expected of you. But it's not vital that people have those qualifications. It's really important that people have the right aptitude and attitude towards being able to undertake this type of role so when we're recruiting, for example, we talk around soft skills and what's really important for this type of role" (Participant F).*

Several participants (4 out of 10) equated soft skills with empathy, integrity and professional ethics where the OHS generalists can acknowledge their shortcomings and be able to inform clients what they can and cannot provide. Similarly, OHS generalists should be able to form a rapport with workers and management in any organisation by showing integrity, empathy and honesty during conversations.

Theme 2: Gaps in Qualifications

Half of the participants attributed the competencies gap to a lack of interest in attaining relevant OHS qualifications to practice in the field. They asserted that tertiary qualifications in OHS are significant for achieving competencies like critical thinking. Only two of these participants attributed this dearth of qualifications such as graduate diplomas to the lack of appropriate educational materials.

> *"To do a postgraduate study in any country, is about critical thinking and being able to understand scientific papers and the evidence as is, so, to my mind, that is a great competency gap that we have in this country" (Participant B).*
>
> *"Some students really struggle with that, and I must admit the competencies in terms of risk communication we have in our bachelor's degree, for example, but we don't have in our graduate diploma" (Participant D).*
>
> *"There's a gap between the skills that we've got at the moment that are available that we can go to university for, and the skills that we need to become that really high level" (Participant G).*

One participant attributed the lack of competencies to the new generation and younger people entering the field, who, despite being qualified, were perceived as having no ability to communicate risks and exert influence in workplaces. Two participants believed that OHS generalists do not understand their roles properly and consequently either take excessive ownership of organisational problems or fail to provide solutions.

> *"I think the challenge is, particularly for the younger practitioners coming into the discipline. They don't have that confidence, and you know, that drive to actually develop the case and proposal" (Participant D).*
>
> *"I personally find that the areas where we're having the gaps is around the leadership capabilities, keep up to take organisations on journeys consistently and sustainably" (Participant F).*
>
> *"They kind of either do too much beyond their professional base, they try to own too much of the problem. Or they don't recognise and bring in others sooner to help get those other interdependencies" (Participant H).*

Theme 3: Lack of Cultural Competency

Half of the participants highlighted competency gaps from cultural points of view as well. One participant with a strong background in Kaupapa Māori, pointed out that OHS professionals, both generalists and specialists, lack competencies that include knowledge of Māori values, history and Te Tiriti o Waitangi. Several participants (4 out of 10) admitted that some organisations recognise the significance of Treaty obligations and *tikanga*, but fail to observe those in processes and practices.

> *"These are big gaps, because there is nothing there. There's nothing there. There's a few programmes that can say, oh this is Māori competency, but really they're just working it backwards" (Participant A).*
>
> *"We do need to have cultural competencies, we should build them in, but I mean, we do build in as a ... we already build them in. Some employers do build them in, but they didn't actually fulfil that" (Participant F).*

Four participants recognised the need for OHS generalists to understand and practice cultural competency. One participant highlighted that increasing the breadth of cultural awareness by observing different behaviours in the workplace is important for enhancing cultural competency. Another participant suggested that scholarships for specific ethnicities could encourage individuals from different cultures to enrol for OHS qualifications, and that this could be an effective way to create a culturally diverse OHS workforce, which is currently "primarily white". This research participant suggested that a culturally diverse workforce would positively influence cultural competencies in other OHS professionals. Another participant suggested that OHS professionals should have knowledge of Mātauranga Māori, which is essential to establish credibility and to form rapport with Māori workers in the workplace.

> *"So, you at least have to give practitioners some base knowledge that they can engage and form a rapport with the workers, because if they start saying things that they don't have an insightful knowledge of, then the credibility will be nothing and the workers just won't uplift what the practitioner is trying to achieve, sometimes on behalf of the company" (Participant A).*

Two participants (Participant C and Participant I) suggested the need to base the HSWA 2015 legislation on the *Treaty of Waitangi* (1840) to align Māori values with the practice of OHS. These participants also suggested that business organisations need to be more culturally inclusive in promoting cultural competencies at work. Two other participants (Participant F and Participant G) highlighted the significance of cultural awareness at work as a way to create harmony. One participant commented that increased cultural diversity within the OHS workforce is an effective way to inculcate cultural competencies in OHS generalists.

Theme 4: Factors Affecting Competencies

The majority of participants (8 out of 10) indicated that OHS generalists' capabilities and competencies are affected by organisational leadership. These participants stressed the fact that even the most capable and competent OHS generalists require support from management. This support can come in the form of organisations operating with a high degree of safety maturity to provide resources and adopt suitable approaches towards health and safety.

> *"Their success becomes a lot more dependent on leadership, maturity, understanding and infrastructure / systems within that organisation" (Participant E).*

However, many (6 out of 10) participants believed that organisations in New Zealand either do not have a robust health and safety vision or lack resources or rely too much on a single health and safety person to quickly fix all of the organisation's health and safety issues.

> *"So, there's insufficient resourcing within organisations. There is insufficient understanding of their role and how there are good returns on investment by having good health and safety" (Participant G).*
>
> *"I think there's a demand side problem to that as well that businesses think that health and safety is a singular thing. 'Surely I can get a singular professional to help me with that'" (Participant H).*
>
> *"I think the fishhook is the organisation's acceptance and ability for the students to apply their knowledge, and that's where the frustration comes in" (Participant D).*

Half of the participants attributed the experience of OHS generalists as a factor that influences their capabilities and asserted that time is a big factor in developing capabilities and soft skills such as critical thinking, persuasion and problem solving. A few participants (3 out of 10) asserted that organisations value previous experience.

> *"The ability to translate the technical and engage and influence the leaders is absolutely vital, and you can only get that through building those skills, those capabilities, over a period of time" (Participant E).*
>
> *"That they've been at the front end and they've been quite great and they've had the knock backs and as they've gained in their experience, they understand" (Participant F).*
>
> *"So, in terms of the skills, I guess what they were looking for when they employed me was to bring global experience and all that kind of thing here" (Participant I).*

In contrast, only two individuals stated that perception of role requirements was a factor that affected the abilities of OHS generalists and stressed that OHS generalists focus on the technical requirements of the role, often trying to solve the problems themselves, thereby losing sight of the bigger picture. One participant indicated that the expertise of a generalist is often reflective of the tertiary institution from which they acquired their qualification, as every institution has its own set of specialities.

Theme 5: Evidence-Based Practice

Few (3 out of 10) participants discussed the importance of employing an evidence-based approach in practising OHS, which they considered an important competency. They indicated that this approach is not evident in OHS generalists' work in New Zealand, primarily because many are not qualified in OHS.

> *"I'm sure you know that you can look through things, and you need to look at the evidence of what is there, and that's a space that is an academic skill, and there's no getting around it" (Participant B).*
>
> *"So, it's critical thinking, problem solving, evidence-based practice, and that all adds to the experience of those senior practitioners" (Participant D).*
>
> *"I brought in some individuals who have strong backgrounds in wellbeing. So, we then adopted a strategy around that, and the strategy was all science based" (Participant I).*

6.2.3. Category 3: Demand for OHS Generalists

This category presents the findings of third research question regarding the current and future demand for general OHS professionals in New Zealand. Figure 6.3 illustrates the key findings within this category pointing out major themes as increasing demand for the generalist role, reasons of demand for generalists, sectors demanding generalists, nature of demand, and safety maturity and demand. Table 6.4 indicates the depth and breadth of discussion on these issues, showing the number of participants who shared their views on these subjects and number of times they brought up the issue.

Figure 6.5. Graphical Illustration of Emergent Themes in Category 3

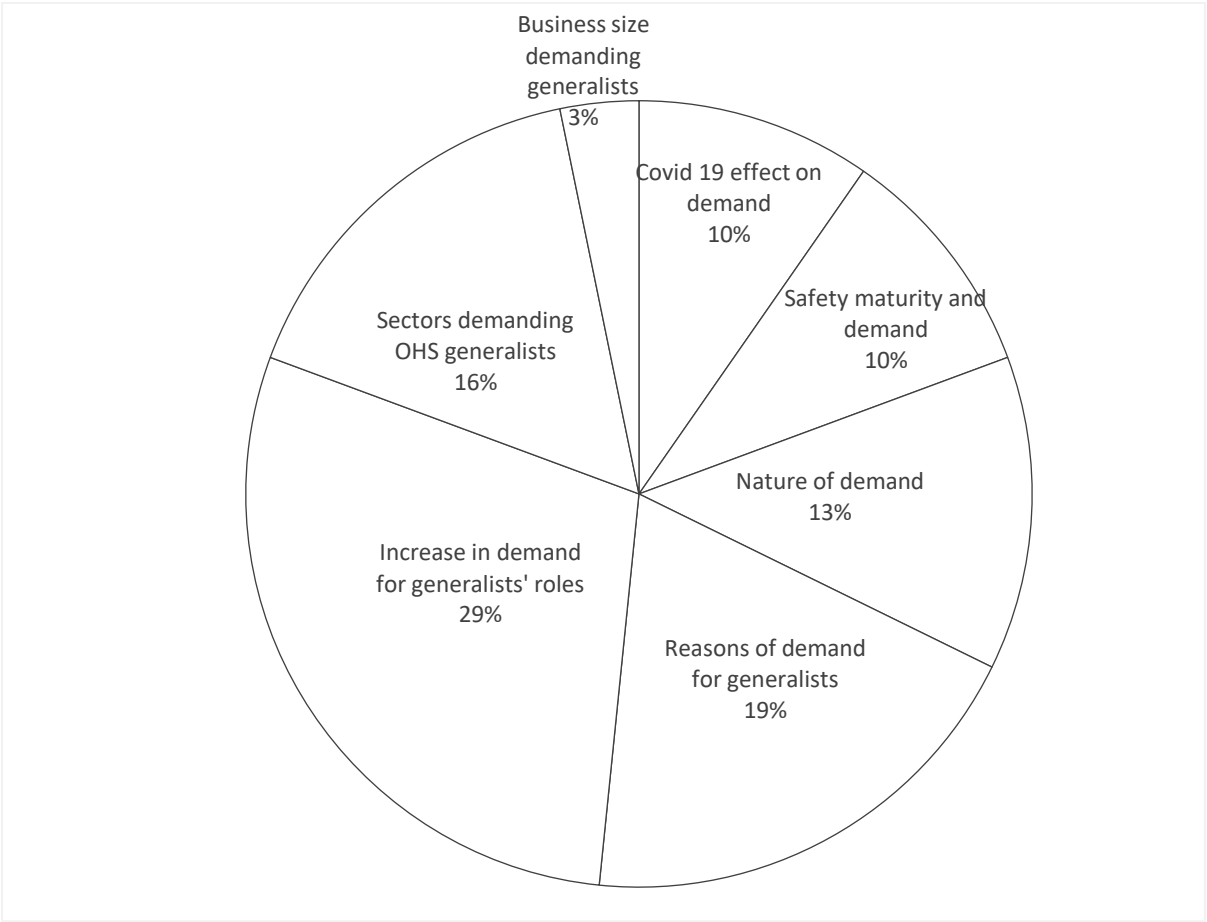


Table 6.4. Emergent Themes in Category 3

Themes	Participants	Frequency of references
Category 3: Demand for Generalists	7	44
Covid 19 effect on demand for generalists	1	3
Safety maturity and demand	2	3
Nature of demand	3	4
Reasons of demand for generalists	4	6
Roles in demand	5	9
Sectors demanding OHS professionals	3	5
Size of businesses demanding generalists	1	1

Theme 1: Increase in Demand for Generalists' Roles

A majority of the participants (7 out of 10) believed that the demand for OHS generalists is currently high and will continue to increase. They attributed this state of affairs to the fact that organisations are not fully aware of their health and safety obligations, and therefore, they hire someone who can take responsibility.

> *"We are actually seeing an increase in demand for generalists, but we are also seeing a shift towards creating different roles for health and safety generalists" (Participant E).*

However, there was no clear consensus regarding the roles that will be in demand in the future. For instance, two participants believed that demand at junior and middle levels of the profession will grow in the next 5–10 years, and they attributed increased demand to the retirement of senior professionals, coupled with junior and mid-level professionals being promoted to senior roles. Several participants (3 out of 10) believed that demand for

experienced OHS generalists in senior roles will increase because these professionals have been occupying the same career space for a long time and will retire in the next 5–10 years.

> *"I think getting the younger cohort of professionals, that's where the demand will be" (Participant D).*
>
> *"The demand is right across the board, but the biggest, probably the biggest gap, in terms of actually not being able to fill that demand, if that makes sense, is that [of] the more experienced, qualified, experienced professional level" (Participant E).*
>
> *"The gap is between that senior safety manager, director level and peer safety people. There's a real gap there ... yeah, I supply and demand ... yeah, real mismatch" (Participant F).*
>
> *"They need to resource at that coordinator level, so I think we'll see that demand at 4s and 5s [professionals qualified in OHS Level 4 and Level 5 programmes] coming through. And the health and safety support, health and safety administrator-type role" (Participant G).*

Theme 2: Safety Maturity and Demand

Two participants commented that current demand does not necessarily reflect where the need for OHS generalists actually lies, as many businesses are at a pathological or reactive level in their OHS maturity, but eventually, these businesses will move to the calculative and proactive phases, and have increasing awareness of their health and safety obligations. Several participants (4 out of 10) predicted that the increasing safety maturity of organisations in New Zealand will positively influence the demand for OHS generalists in near future. The realisation of management that their organisations need to fulfil their health and safety requirements and invest in hiring OHS-trained persons was predicted to drive future demand.

> *"The demand is where the organisation has, at a leadership level, started to do some work, and has sort of matured a little bit" (Participant E).*

> *"I think there is demand for health and safety because there's better understanding of compliance, regulatory, the fact that the boards are now anxious about protecting themselves" (Participant G).*

Several participants (4 out of 10) expressed concerns regarding the nature of demand that exists currently. One participant even commented that current demand emanates from organisations that have the resources to hire OHS generalists, but that many similar organisations are not hiring because they may lack resources or be unaware of their OHS obligations. Therefore, the current demand does not reflect the actual need for OHS generalists.

> *"So, I think at the moment we're seeing the demand, where the regulator is applying pressure" (Participant C).*
>
> *"I think there's [a] quantum of demand, and there's the quality of demand or nature of demand ... this idea that we need 10,000 more health and safety professionals. I'm sorry, I just don't think that's a very constructive prediction" (Participant H).*

Several participants (4 out of 10) correlated the nature of demand with the maturity of organisations, asserting that low safety maturity and resource constraints in organisations create poor demand and unfounded expectations from OHS generalists.

> *"And if you think about it, in New Zealand and the maturity of our organisations, and the fact that, actually, finance [is] still a big driver. If I gave really crappy advice and I got reported to my professional body, and my professional body kicked me out, it would not prevent me from getting work, because no one cares if I'm registered" (Participant C).*
>
> *"The issue is the hiring managers don't always know what is a competent health and safety person" (Participant F).*

A few participants (3 out of 10) said that a higher level of safety maturity would negatively impact the demand for OHS generalists, but they believed that, for most organisations, this level of maturity will take a very long time to develop. These participants asserted that once

businesses move to highest level of maturity, they will gain a better understanding of their duties and consequently they will not need as many generalists as they will already be aware of their business's critical risks. Thus, they will demand specialists experienced in their business-specific requirements.

> *"Right now, we've got a gap in capability amongst everybody at the moment, which is why we still need generalists and specialists. I think we will always need specialists, but generalists ..." (Participant C).*
>
> *"So, look, I think there's certainly a demand. I think there's an increasing demand for specialists as businesses become more knowledgeable about some of their critical risks" (Participant J).*

Theme 3: Supply and Demand

A few participants (3 out of 10) predicted that the future demand for OHS generalists will come mainly from the manufacturing sector, followed by construction, forestry and logistics. One participant added that small- and medium-size businesses will also drive future demand.

> *"I would say manufacturing. Not construction first. Manufacturing. And I think, healthcare" (Participant G).*
>
> *"There has been an increase in the manufacturing and logistics area in terms of safety advisors" (Participant F).*

While an increase in demand for OHS generalists is anticipated, there remains a greater concern for ongoing capacity gaps in the OHS profession discussed following.

6.2.4. Category 4: Capacity Gaps in the General OHS Profession in New Zealand

This category presents the findings of the fourth research question regarding the current capacity gaps in OHS profession in New Zealand. Figure 6.4 illustrates the key findings within this category which primarily relate to OHS qualifications and CPD. The less significant themes are resources, voluntary nature of registration and accreditation and industry accreditation scheme. Table 6.5 indicates the depth and breadth of discussion on these issues, showing the number of participants who shared their views on these subjects and number of times they brought up the issue.

Figure 6.6. Graphical Illustration of Emergent Themes in Category 4

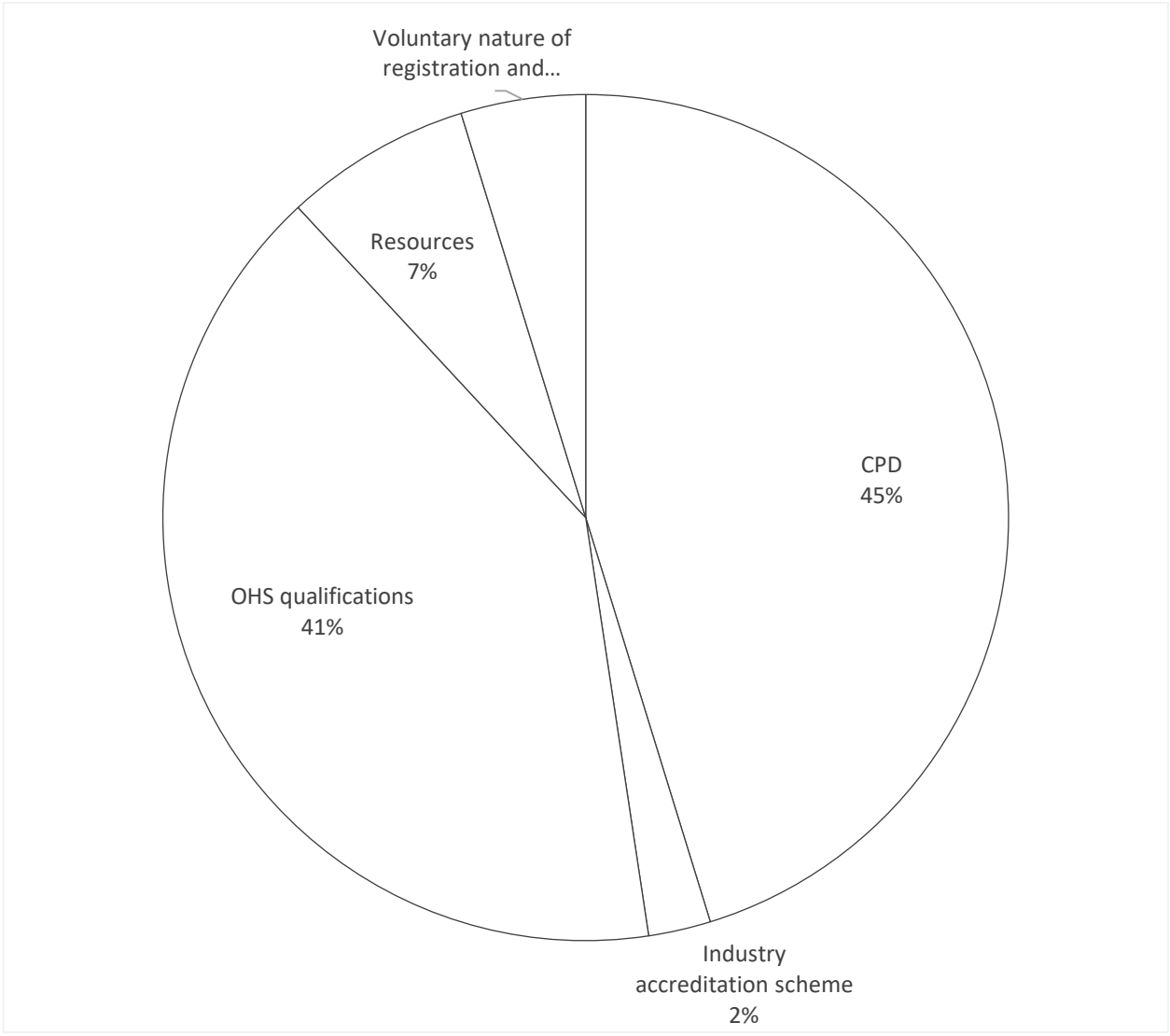


Table 6.5. Emergent Themes in Category 4

Themes	Participants	Frequency of references
Category 4: Capacity Gaps in OHS Profession	9	51
CPD	6	19
• Audit of CPD undertaken	1	1
• CPD and competency	3	7
• Quality of CPD	2	2
• Suggestions for CPD	1	1
Industry accreditation scheme	1	1
OHS qualifications	9	17
• Feedback on qualifications	1	2
Resources	2	3
Voluntary registration and accreditation	2	2

Most of the interview participants (9 out of 10) commented on the current level and quality of OHS qualifications and CPD initiatives. One interviewee (Participant G) expressed concern that there are not sufficient qualified OHS people in the workforce - particularly at the middle level roles. Two other interview participants were apprehensive about the time taken to develop OHS qualifications and CPD courses and also about the voluntary nature of registration and accreditation with OHS bodies such as HASANZ and NZISM. Thus, the interviewees felt that these issues impact OHS generalists' competencies. The major findings that emerged under the theme of capacity gaps are presented below.

Theme 1: Qualifications

The majority of the participants (9 out of 10) indicated there was a gap between actual and needed OHS qualifications. A few participants were very specific in indicating the gaps in terms of levels that should demand more OHS qualifications.

> *"The lack of qualifications for the generalist practitioner is an issue" (Participant A).*
>
> *"So where's the gap? The gap is between 4 and 6. There is quite a few at 6. So who's doing what in that space, to be able to funnel the people who are interested in health and safety all the way through. So we've got a gap there" (Participant G).*

Several participants (4 out of 10) asserted that many domestic OHS qualifications do not follow standards as required by international competency frameworks. The participants explained that New Zealand's OHS qualifications currently sit at the diploma level for the most part, compared to countries like Australia and the UK, where most OHS qualifications are offered at the degree level.

> *"At a standard level, everything sort of sitting at it ... diploma level ... so opportunity to raise the bar there I think" (Participant J).*

Only two people stated that qualifications are a vital part of competencies but are not essential as long as OHS generalists possess soft skills. The same participants, on the other hand, asserted that the role of OHS specialists is quite technical and that specialists do need qualifications.

> *"It's really important that people have the right aptitude and attitude towards being able to undertake this type of role so when we're recruiting, for example, we talk around soft skills and what's really important for this type of role" (Participant F).*

> *"I think they are probably experts in that space, and qualifications in that space are really important. But if I'm after a senior executive who's got the ability to see the connections right across, they need access to that expertise, but they don't have to have the expertise [themselves]" (Participant G).*

Many participants (7 out of 10) expressed doubts about the efficacy of the existing qualifications in conferring competencies on individuals. Participants felt that a shallow and brief academic exposure to OHS is not sufficient for professionals to practice the OHS trade in real-life situations.

> *"All we're doing is showing people little snippets of information across a really shallow but broad range of topics. And then sending them out into the workplace and expecting them to be able to give advice to organisations, based on those 80 hours or so of contact" (Participant C).*

Half of the total participants recommended ways to strengthen New Zealand's OHS qualification framework. However, there was no consensus regarding the manner in which OHS education could be provided. A few participants (2 out of 10) advised that qualifications can be provided in the form of flexible, tailor-made micro-credit courses specific to an individuals' requirements and work schedule. This would mean that professionals who have been in the industry for a long time but lack qualifications would be able to complete such short courses with ease. One participant advised that more focus is required on OHS research interventions.

> *"So, I think we don't do quite as much for people who have been in the industry for years but haven't actually got a formal piece of paper, they've got oodles of experience and they can demonstrate capability" (Participant F).*
>
> *"One of the things that I've been really keen on is looking at micro-credentialing, and also addressing those soft skills between the professional level and also the GM level" (Participant G).*

A few participants (2 out of 10) , in contrast, suggested that a health and safety curriculum should be embedded in regular schooling instead of being introduced later in the tertiary education space. One participant had a radical suggestion to embed health and safety in the qualification curricula of all professions; aiming towards building health and safety capability in the entire workforce, rather than limiting this ability to OHS generalists and specialists. The belief underlying this recommendation was that the OHS generalist is a "non-role" and that health and safety capability should be built into all professions within an organisation.

> *"I think, instead of focusing on school leavers and trying to train them to be health and safety generalists, we should focus on school leavers and train them to be business leaders, or engineers or scientists. But part of each of those curriculums should include health and safety, and therefore, everybody has health and safety capabilities, and then you don't need generalists" (Participant C).*

Theme 2: Continuing Professional Development Initiatives

Several participants (4 out of 10) expressed concern over the nature of CPD. However, there was no clear consensus on the issue of the formal structure of CPD courses. In fact, the participants had disparate opinions. Some believed that health and safety professionals in New Zealand show negligence in terms of seeking out professional development courses, and therefore suggested that CPD should be formalised for it to be effective. In contrast, a couple of participants asserted that CPD should be an individual-oriented activity, rather than cohort-based. They believed that CPD should, in terms of understanding the need for learning, be based on reflective practice, flexible and tailor-made to suit the requirements of OHS generalists who are at different stages in their career and require different updates to their knowledge and skills.

> *"Formalising a competency framework would be a big step, NZQA approved" (Participant A).*
>
> *"If we think CPD is a formal programme, then we will miss the boat, because I think CPD and that apprenticeship style of learning are really closely aligned" (Participant C).*
>
> *"So, when I go places or join webinars, I want to learn about something specific, based on my own professional needs" (Participant C).*

Only two believed that New Zealand has sufficient CPD initiatives, but it was dependent upon the capacity and the willingness of professionals to be able to derive any benefits.

> *"There's oodles of CPD opportunity, but it's around people's individual capability or need or want to actually do it" (Participant F).*
>
> *"You know, I think one of the things that I see people struggling with is understanding why they have to do this ... And for some reason, people struggle to comprehend the value of that process" (Participant J).*

Some participants recommended ways to improve CPD in New Zealand. One participant advocated an apprenticeship style of CPD, where the individual can associate with organisations in different industries to learn about the sector, simultaneously applying their health and safety knowledge - and believed that this idea had the potential to increase chances of promotion and skills transferability across all sectors. Another participant felt that the current mode of CPD adopted by the NZISM in terms of webinars and micro-credentialing would be suitable for OHS generalists. He stressed the fact that short CPD courses, instead of long programmes, provide flexibility and increase the chances of participation and actual learning.

> *"Getting education from short snippets of information, rather than sitting in a course for a whole day" (Participant J).*
>
> *"Wouldn't it be awesome to have almost like an apprenticeship, where a person learns about something, it could be communication, management, whatever, and then they are going to go and help organisations to improve the way that they work like a business analyst" (Participant C).*

6.2.5. Category 5: Barriers in the General OHS Profession and Suggestions to Overcome Barriers

This category presents the findings of the fifth research question regarding the barriers in the OHS profession in New Zealand and suggestions to overcome the identified barriers. Figure 6.5. shows the key findings in this category. Table 6.6 and Table 6.7 indicate the depth and breadth of discussion on these issues, showing the number of participants who shared their views on these subjects and number of times they addressed the issue.

Figure 6.5. Graphical Illustration of Emergent Themes in Category 5

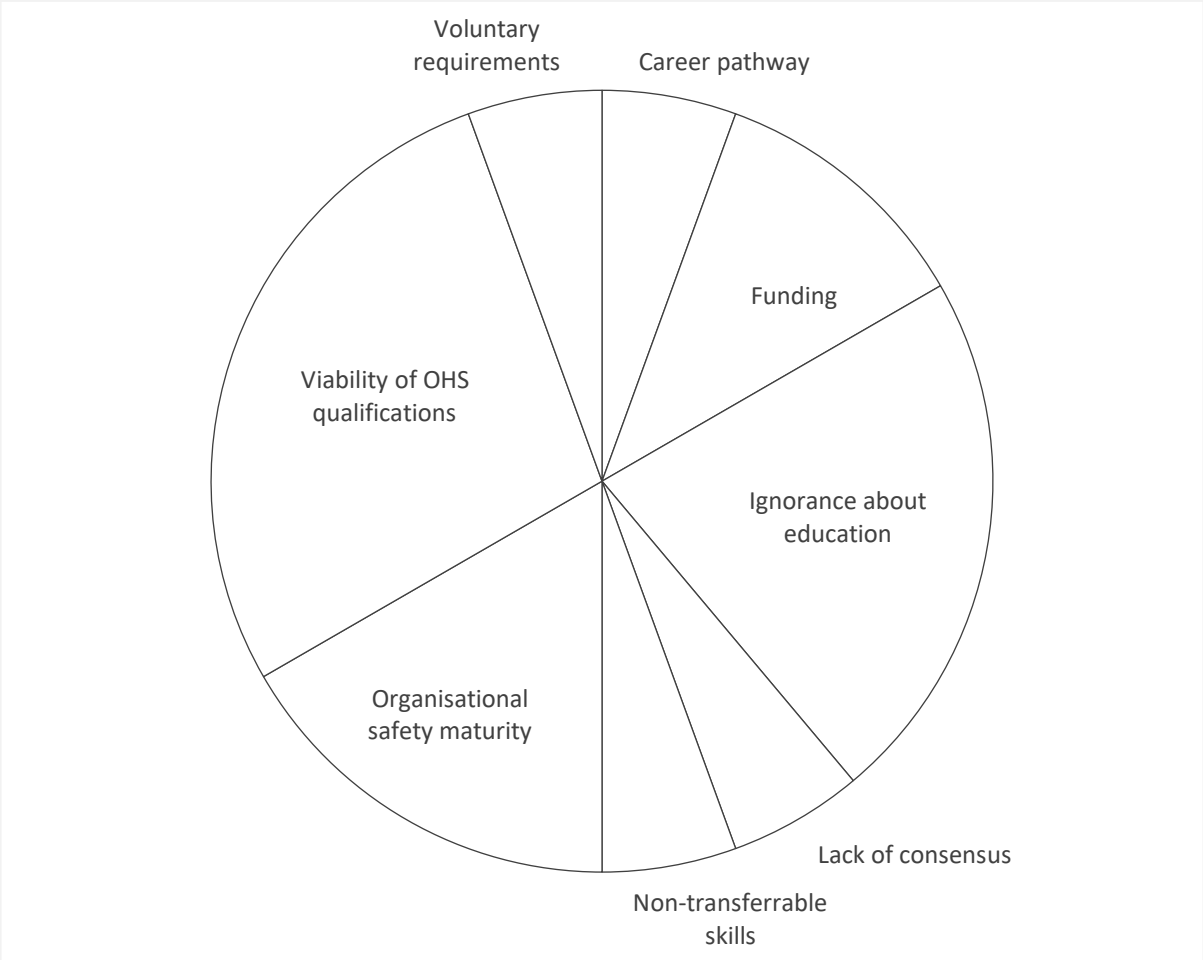


Table 6.6. Emergent Themes in Category 5

Themes	Participants	Frequency of references
Category5: Barriers in the OHS Profession	8	32
Career pathway	1	1
Funding	2	2
Ignorance about education	2	4
Lack of consensus	1	1
Non-transferrable skills	1	1

Themes	Participants	Frequency of references
Organisational safety maturity	2	3
Viability of OHS qualifications	2	5
Voluntary requirements	1	1

Regarding the barriers in developing the OHS profession, there were clear differences of opinion and no coherent theme evolved as to what barriers are present. On one hand, a couple of participants identified a lack of funding for tertiary OHS qualifications as being responsible for inhibiting development of OHS qualifications and growth of OHS generalist workforce.

> *"The current funding structure for occupational health and safety qualifications is really struggling under the current tertiary education commission requirements for feasibility and viability of courses" (Participant D).*
>
> *"Funding is always barrier. So, there's been millions spent on workforce development for health and disabilities, and there's probably only been a fraction [spent] on the health and safety practitioner workforce" (Participant A).*

In contrast, one participant believed that funding for OHS has quadrupled since the enactment of the new HSWA legislation in 2015 but that outcomes still do not equal investments.

> *"I think what ... reflects for me is, we're still not ... what we've not managed to do in the last 10 years, despite a 400% increase in investment is, we've not been able to get [a] good agreement on what really matters" (Participant H).*

This same participant described a lack of consensus amongst stakeholders about what really matters for OHS as a profession, and as a result there was a lack of a holistic vision. The participant mentioned that the Independent Taskforce on Workplace Health and Safety

(2013) has elaborated a vision but, due to the lack of agreement, their efforts remain dissolute, and stakeholders are therefore trying to find singular solutions instead of adopting a coherent approach.

> *"I think there's still a gap, a really fundamental gap, about a lack of agreement, and a lack of consensus around what really matters" (Participant H).*
>
> *"But at the moment, everyone's speaking a different language. Now, we're using the same words, 'health and safety'. But there's no consensus over what we mean" (Participant H).*
>
> *"And that the reason that's so problematic ... because it is a fundamentally interdependent challenge" (Participant H).*

One participant indicated that full-time employed individuals are heading the voluntary positions in key OHS bodies and therefore they have insufficient time to perform OHS development-related work which is a barrier to the development of the OHS profession.

> *"People have got full-time roles, and the organisation's largely voluntary. People don't necessarily have the time or the energy to put into something" (Participant C).*

A few participants believed that people in New Zealand have a disregard or neglect for higher education and their willingness to gain higher education and technical knowledge is minimal. One participant expressed concern over the non-viability of OHS qualifications, citing that few students showed interest in joining OHS programmes, rendering these programmes financially unviable for most academic institutions. One participant believed that academic institutions should focus on increasing uptake of their courses rather than improving course quality.

> *"This might be too strong of a way of putting it, but I think there is also a fair level of contempt in New Zealand for education, for higher education" (Participant B).*

> *"We don't value what the qualifications and the real technical knowledge actually, how important that is" (Participant E).*
>
> *"In terms of improving the product that they deliver, you know, experiences around the place would suggest that the academic side of the equation is more about getting people in … rather than maybe putting as much effort as they could into making a quality product" (Participant J).*

One participant mentioned that because the number of people in OHS workforce is small, consequently intra-sector transferability of skills is low and that causes concern from a recruitment perspective. Another observed that New Zealand's OHS profession still lacks a clear career pathway for OHS generalists due to the multiplicity of roles that do not always match with the OHS professional and practitioner roles defined in the INSHPO Capability Framework. A few participants believed that the business community is cynical about health and safety as a viable activity for them from a profitability perspective. Participants also mentioned a mistrust of health and safety professionals.

> *"I sat in the meeting with a group of people and somebody stood up and said that business doesn't trust the health and safety sector" (Participant J).*
>
> *"And I think their challenge is trying to get evidence to sort of support that health and safety is good business" (Participant D).*

The participants offered suggestions to strengthen the OHS profession in various ways, prominently through upscaling OHS qualifications and CPD initiatives as well as competencies among the OHS generalists.

Table 6.7. Emergent Themes in Category 5

Themes	Participants	Frequency of references
Category 5: Overcoming Barriers	8	32
Adequate funding for OHS education	1	1
CPD	4	4
Education	5	7
INSHPO Framework	2	2
OHS awareness in businesses	2	2
Suggestions for cultural competency	4	8

The suggestions to enhance cultural competencies and cultural awareness among OHS generalists and the organisations are discussed in Category 2 – OHS generalists' capabilities and competencies – earlier in this chapter. The suggestions for strengthening the OHS qualification framework and augmenting CPD initiatives has been presented in Category 4 – Capacity gaps in OHS profession.

6.3. Chapter Conclusion

The qualitative findings of this study indicate that the New Zealand OHS profession is progressing but is currently in its initial phase of development. A majority of research participants stressed that organisations in New Zealand are still caught in a reactive–compliance phase and that, with increasing safety maturity, the country will see positive influences on the nature of demand for general OHS professionals. The participants also

asserted that the safety attitudes held by any organisation's leadership significantly impact their approach to managing OHS influencing the competencies of OHS professionals.

However, one participant stressed that many young professionals in new generation of the OHS workforce, despite being qualified, lack confidence in communicating risks and exerting influence in workplaces. Nearly half of the participants mentioned that organisations acknowledge the importance of Treaty of Waitangi and *tikanga* but fail to observe it in their operations. One participant with background in Māori health and safety issues stressed that both the OHS generalists and OHS specialists lack the knowledge of Māori values, history and Te Tiriti o Waitangi.

The research participants presented disparate views regarding the specific barriers preventing steady development of the profession. Barriers cited were lack of funding, the voluntary nature of registration with and membership in professional associations, a lack of consensus on important matters However, one participant said that students' lack of interest in OHS qualifications render these programmes unviable, while another participant suggested that academic institutions engage in increasing student uptake instead of enhancing programme quality. This is interesting to note as the latter could be consequence of the students' lack of interest in OHS as a career. The next chapter presents a detailed discussion on the most significant quantitative and qualitative findings.

Chapter 7: Discussion

7.1. Introduction

This study aimed to explore specific issues within the OHS profession in New Zealand and, to understand: 1) its current features; 2) the competency gaps facing OHS generalists; 3) current demand for the OHS generalists; 4) current capacity gaps; and 5) barriers within the profession and ways to overcome these barriers. Chapter 5 and Chapter 6 presented the quantitative and the qualitative findings of the study. This chapter explains how the findings have answered the research questions posed in this study. The chapter also presents a detailed evaluation of the findings and draws comparisons with previously published studies. Significant findings are discussed within five broad categories corresponding to each of the research questions. Lastly, Chapter 7 discusses the implications of the study. A discussion on the important findings is presented below.

7.2. Current Features of Occupational Health and Safety Profession in New Zealand

7.2.1. Qualitative Findings

Organisational Safety Maturity

A key finding of the current study was that the majority of organisations in New Zealand lack robust safety culture. Many research participants expressed concern about the level of safety maturity among New Zealand organisations. They asserted that organisations, mostly small and medium scale, are compliance oriented, operating within the reactive-calculative phase of the safety maturity model as they gradually become aware of their OHS obligations. The

safety maturity model suggested by Westrum (1993) and expanded by Hudson (2003) states that an organisation moves along a continuum of safety maturity, and that organisations are initially at pathological stage, reluctant in moving to middle stages – reactive and calculative and then to the advanced stages – proactive and generative. The legislative reforms following the Pike River tragedy have impacted many organisations in New Zealand in transitioning them from the pathological to the reactive and calculative stage as they gain a better understanding of their OHS duties with support available from OHS stakeholder organisations such as WorkSafe, ACC and HASANZ. However, study participants believed that this shift will be a long journey for organisations before they reach the fully mature, generative stage.

Participants asserted that organisations employ OHS personnel primarily to comply with the legislation, but lack trust in the OHS professionals' advice and consider investing funds in health and safety as a waste of money. In a qualitative study conducted in New Zealand, Olsen (2012) found that, in fact, most organisations expect OHS personnel to ensure organisational compliance with all OHS regulations, primarily to avoid prosecution. Research participants also noted that small organisations tend to underestimate hazards and risks and overestimate their capacity to deal with risks. This assertion is consistent with the literature, which describes small scale organisations non-complying with health and safety legislation for number of reasons, including financial pressures, incompetency and a non-conforming attitude towards OHS law (Lamm & Walters, 2004).

Approaches to Managing Occupational Health and Safety

One key finding of the current work is that organisations in New Zealand use immature 'tick-box' approach to manage health and safety issues at work. The organisations focus excessively on behaviour-based health and safety, rather than employing the necessary environmental modification techniques to provide safer workplaces. The majority of the participants considered that though organisations in the country have good intention towards health, safety and wellbeing, they lack knowledge and understanding of their own role towards improving health and safety practices. Therefore health and safety in most organisations remains a separate activity, rather than being integrated with other operational activities in a coherent policy.

Previously published studies suggest other scholars' agreement with these findings. There are various approaches to managing OHS at workplaces that are neither better nor worse than others, but the intention with which these strategies are engaged by organisations makes the difference (Quinlan et al., 2010). For instance, pre-employment medical screening should be resorted to by the employers to ensure the fitness of the employee for certain tasks (Quinlan et al., 2010). However, Bateman and Finlay (2002) found that, in New Zealand, screening strategies are often used as a means to discriminate against employees to their disadvantage during the recruitment process. Similarly, Lamm and Walters (2004) found that in New Zealand, small organisations fail to provide adequate safety training in comparison to large organisations. Quinlan et al (2010) suggested that using behavioural modification strategies superficially may result in shifting the burden of OHS safety assurance to the employees.

Perceptions About OHS Generalists' Roles

Another key finding relates to the role and work duties of OHS generalists. Most participants stressed the non-technical aspect of the OHS generalist's role which set them apart from OHS specialists. Research participants considered OHS generalists to play a supportive role not merely as problem solvers, but also the problem identifiers, connecting problems with their solutions. Participants believed that OHS generalists were also facilitators possessing soft skills for influencing, handling complexities and making intelligent judgements.

There is ample literature confirming the participants' views. The literature suggests that the role of the OHS generalist has evolved over time from static technical health and safety-related advising to engaging, influencing, communicating with different stakeholders and operating in a complex and dynamic environment (Blair, 2004; Groover & Spigener, 2008; Pryor et al., 2019). Olsen (2020), in her New Zealand-based study, concluded that the OHS professionals play a flexible role in organisations striving to fit OHS objectives within larger organisational goals and therefore they switch from one role to another frequently. The previous research also concluded that OHS generalists operate from a marginalised position in an organisation, yet they constantly attempt to make health and safety a priority agenda item (Hasle & Jansen, 2006; Olsen, 2020). The literature has also suggested that the OHS generalist in New Zealand plays a complex role and needs to employ different kinds of strategies to influence, convince and educate organisational leadership to adopt health and safety practices so that organisations use integrated instead of piecemeal approaches to health and safety at work (Broberg & Hermund, 2004; Hasle & Sørenson, 2011; Provan et al., 2017).

Many study participants agreed that the OHS profession in New Zealand has made considerable progress since Pike River Coal Mine tragedy, with more information and training in place for organisations, and that health and safety has become an important agenda item of discussions and investments in organisations. The literature reveals that the Pike River Coal Mine tragedy in 2010 initiated the establishment of an Independent Taskforce in 2013, on the recommendations of which a series of statutory and regulatory reforms within the profession were initiated (Edgar, McAndrew, Geare & O'Kane 2013). These reforms led to the establishment of WorkSafe and HASANZ, and the enactment of the HSWA (2015), followed by the signing of the INSHPO Capability Framework (Peace et al., 2019).

7.2.2. Quantitative Findings

The Ageing Generalist Workforce

Findings obtained from the quantitative survey highlighted the features of New Zealand's OHS workforce in the areas of demographics and career aspects. A key finding was that the OHS generalist *workforce is ageing*. The findings show that 84% of the survey respondents were over 41 years old, and 58% were over 51 years old. Most senior OHS generalists will retire in the coming 5–10 years, which will create replacement demand. This finding also indicates the replacement demand is not being adequately met and that not many young OHS generalists are entering the workforce. In future, there will be an insufficient number of competent OHS generalists to take up senior roles. This finding is in agreement with Dobson's (2018) study, which reported an ageing public sector OHS workforce in New Zealand.

Gender Equity

The survey revealed that there is no gender inequity in the OHS generalist workforce in New Zealand. Almost half, or 47% of the survey respondents, were female. This result concurred with Dobson's (2018) study, which found no striking gender differences in New Zealand's OHS workforce.

Work Roles

The present research found that more than 57% of New Zealand's OHS generalists were working in professional roles, while only 34% were working in practitioner roles. The INSHPO framework has divided roles based on the skills, knowledge and qualifications required for each role. The general OHS professional roles require higher qualifications, more knowledge and skills, than the general OHS practitioner roles, due to the more complex nature of the associated job duties (INSHPO, 2017a). This shows that the currently practicing OHS generalists in New Zealand are qualified and skilled. However, nearly 19% respondents were working in roles other than mentioned in INSHPO Capability Framework.

Skewed Participation

Another key finding of the study was that nearly 80% of the survey respondents were working in medium-sized or large organisations. However, more than 90% of New Zealand's organisations are small. Therefore, the participation ratio appears skewed. This finding could have multiple implications. First, low participation of OHS generalists from small organisations can imply that such organisations do not employ dedicated OHS personnel.

Second, the OHS personnel in small scale organisations have multiple responsibilities including OHS and therefore they don't have time to interact with health and safety associations, or engage in related activities. All these factors indicating lack of participation strengthen the finding that most small and medium scale organisation are in a compliant phase where health and safety survey participation is considered a non-essential activity.

Health and Safety Qualifications

Approximately 80% of the OHS generalists responding to the survey had earned an OHS diploma at level 6 or above. Nearly 49% of them had earned a graduate diploma, postgraduate diploma or a higher qualification in OHS. Dobson's (2018) study concurred, citing 46% of the OHS workforce as having an OHS-related tertiary qualification, a result similar to the current findings.

Health and Safety Experience

A key finding of the survey was that nearly 72% of OHS generalists have more than 10 years of experience in OHS, and nearly 50% of the OHS generalists have 15 or more years of OHS experience. This finding is in contrast to Dobson's (2018) study, which found that only 46% of the health and safety public sector workforce had more than 5 years of experience. In the current study, the OHS experience of the respondents can be correlated to their age. Since 84% of the survey respondents were over 40 years old, OHS experience of more than 10 years indicates that OHS as a profession offers professional growth in careers, as well as stability, to the practicing professionals.

Compared with Dobson's (2018) work, the findings of this study shows that New Zealand's OHS workforce profile has shown a slight improvement in terms of OHS qualifications and experience. However, target respondents participating in the two studies were different. The current research drew its sample from OHS generalists across New Zealand, while Dobson's study focused on the entire health and safety workforce employed in the public sector. It can be concluded from the present study that New Zealand's OHS generalist workforce is very experienced, skilled and qualified; however at the same time, it is aged and the replacement demand is not being adequately met. To maintain a quality OHS workforce in the future, an action plan is required for filling the gaps.

While the current qualitative findings show that although organisational safety maturity is evolving, many organisations still use the traditional 'tick-box' approach of compliance, primarily to escape prosecution. The OHS generalist's role should be to guide, educate, influence and connect organisational agendas with health and safety objectives. The quantitative findings show that the OHS generalists are mature, qualified and experienced in OHS roles. However, since 80% of the survey respondents worked in medium to large organisations, the findings indicate strikingly low participation from OHS generalists working in small-scale organisations, which suggests that further research on the safety culture in New Zealand's small organisations is required.

7.3. OHS Generalists' Capabilities and Competencies

7.3.1. Qualitative Findings

Gaps in Soft Skills

There was a unanimous view among participants that soft skills are the most important competency that all OHS generalists need to have, but that many OHS generalists actually lack these skills. One participant stressed that the new and younger generation of OHS generalists, despite being qualified, lack confidence in communicating risks and exerting influence in workplaces. The participants equated soft skills with critical thinking and reasoning, communicating risks and influencing stakeholders, identifying problems and facilitating solutions.

This finding agrees with other literature on the topic. For instance, Blair (2004) found that soft skills, such as business acumen and communication skills, are important aspects of safety education for safety personnel. Imparting soft skills through OHS qualifications is important given that participants also indicated a lack of safety maturity in New Zealand's organisations, primarily the small scale organisations. Thus, organisations in New Zealand need competent OHS generalists who do not merely assist them in complying with OHS legislation, but who also help them in identifying core OHS problems and integrating solutions with overall organisational objectives; a skillset that requires critical thinking, persuasion and balancing. In a qualitative study of OHS practitioners employed in large private and public organisations in New Zealand, Olsen (2012) found that OHS practitioners positively influenced stakeholders' perspectives and attitudes, and improved overall management of OHS within their respective organisations, by using multiple strategies.

Gaps in Qualifications

Although the participants agreed that soft skills are an important attribute of OHS generalists, their opinions about the question of whether qualifications are vital to achieve competencies were divided. A few participants believed that OHS qualifications, particularly the tertiary ones, inculcate soft skills such as critical thinking and help individuals develop evidence-based approaches to problem solving. In contrast, another small group of participants believed that soft skills are inherent in an individual. Several participants highlighted a lack of interest among students in attaining OHS qualifications and also a lack of qualifications below Diploma Level 6.

The literature has suggested that relevant qualifications are one of the prerequisites for an individual to practise in a profession (Hale et al., 2019; Pavalko, 1971). In their international study of OHS professionals, Hale and Guldenmund (2006) found that there was no correlation between education level and job content. The authors concluded that either OHS is dissimilar to other professions where tasks are relevant to the qualifications of the professionals, or there is a gap between OHS training and practice and this situation demands immediate redress. However, Wybo and Wassenhove (2015) conducted an extensive study of published literature on roles of and training for safety professionals and found that qualifications are important in both technical and soft skill development. Analysing the findings of the current study in light of previous research leads to the conclusion that although OHS qualifications are an essential part of professional practice, a mismatch between limited supply and high demand leads to non-qualified or insufficiently qualified individuals practising as safety professionals. More recently, in a New Zealand-based study,

Dobson (2018) found that less than half of the OHS workforce is qualified in the tertiary health and safety space.

Lack of Cultural Competency

Many participants asserted that cultural competencies are vital for being able to influence others and work together with different ethnicities, including Māori, but both the OHS generalists and specialists are not culturally competent as they lack knowledge of Māori history, values and *Te Tiriti o Waitangi* provisions. Additionally, the organisations that recognise the significance of *Te Tiriti o Waitangi* often fail to implement the treaty provisions in its operations.

The literature covers the importance of cultural competency for practicing healthcare professionals in New Zealand well (Clifford, McCalman, Bainbridge & Tsey, 2015; Heke, Wilson & Came, 2019), but the same coverage is missing in the OHS space. Yet, the role of the OHS generalist is versatile and requires a variety of interactions with different stakeholders, and therefore, cultural competency is vital.

Factors Affecting Competencies

The participants pointed out to two main factors affecting competencies of the OHS generalists. 1) attitude of organisational leadership towards health and safety, and 2) OHS experience of the OHS generalists. There is plenty of literature that suggests that the success of safety compliance largely depends on the attitudes of employers (Bandura, 1977; Bhattacharya & Tang, 2013; Inness, Turner, Barling & Stride, 2010), where even the most

competent professionals will struggle to employ the best strategies if they do not have support from their leaders (Nytrö, Saksvik & Torvatn, 1998). Immature organisational leadership often puts unreasonable expectations on OHS generalists. In fact, Olsen (2012) found that OHS practitioners use mostly reactive or calculative strategies, instead of proactive strategies at work. The same study also found that organisational expectations were to avoid prosecution instead of preventing harm (Olsen, 2012). This expectation influences the perception of inexperienced OHS generalists regarding their own role, and they tend to own the problem excessively, or they fail to communicate the scope of their role clearly (Olsen, 2012).

The participants in the current study pointed out that OHS experience plays a major role in developing soft skills such as critical thinking, persuasion and problem-solving. The literature supports this viewpoint; relevant experience is one of the many key factors that helps develop soft skills like effective communication, persuasion and influence, and these skills enable OHS generalists to speak out about critical safety issues (Grote, 2015; Reiman & Pietikainen, 2014, as cited in Provan et al., 2017).

While qualitative findings presented an analysis of significant competencies and factors affecting them, the quantitative findings below present an estimate of different competencies as perceived by the general OHS professionals themselves.

7.3.2. Quantitative Findings

Behavioural Competencies

About 90% of the respondents perceived that behavioural tasks were easy or manageable. Less than 4% of participating OHS generalists considered these tasks to be difficult. This

finding can be attributed to the survey sample composition. Many respondents had a higher than median age along with more than 10 years of work experience in OHS field. Further, 80% of respondents had OHS qualifications. As indicated in the sections above, the literature suggests that the qualification and experience play an important in role in imparting certain competencies to the professionals, including behavioural competencies.

Core Competencies

The core competencies of OHS generalists are likely to be: developing strategies, influencing stakeholders, strategic decision making, and communicating change decisions and outcomes (Institution of Occupational Safety and Health, 2019). Less than one-third of the OHS generalists found these core tasks easy, which can be attributed to their age and their OHS experience. However, 6%–13% of the participating generalist workforce found different core tasks difficult. This finding can be correlated to a lack of experience in OHS roles, or a lack of safety maturity within the organisation.

Technical Competencies

Around 50% of OHS generalists participating in the current study said that technical tasks were easy to perform, while another 39%–45% found such tasks to be manageable. This finding aligns with the demographic aspects of New Zealand's OHS generalist workforce. The ease of doing these tasks can be attributed to respondents' experience and qualifications in OHS.

Health and Safety Knowledge

The participating OHS workforce had a good understanding and knowledge of the HSWA (2015), WorkSafe policies and procedures, ACC procedures and accreditation processes, health and safety regulations specific to their industries, and work processes within their organisations. This finding is in line with the demographics and career profiles of the majority of respondents, who had earned a health and safety diploma or above and were widely experienced in OHS.

The qualitative findings show that the generalist OHS workforce lacks soft skills and cultural competency. Their competencies are considerably affected by attitude of organisational leadership and OHS generalists' experience. In contrast, the quantitative findings suggest that a majority of participants were qualified and experienced and considered themselves competent in various aspects of their role. This contradiction can be attributed to the low number and the rather homogenous profile of the survey respondents. First, the survey sample was smaller than intended (N=53), so the survey responses will not truly represent the entire OHS generalist workforce in New Zealand. Second, 80% of the survey respondents worked in medium to large organisations at the time, and these organisations comprise only approximately 9% of all organisations in New Zealand. It can therefore be inferred that the survey results do not properly represent the viewpoints of OHS professionals practicing in small-size organisations, which compose about 90% of all organisations in New Zealand. The skewed participation also shows that health and safety personnel in small and medium organisations consider it a non-essential activity and highlight the finding that majority of the organisations are at the reactive phase of safety maturity.

7.4. The Demand for OHS Generalists

7.4.1. Increase in Demand for Generalists' Role

Most participants agreed that the demand for OHS generalists at all levels is set to increase in future as more organisations realise their health and safety obligations. However, there was no consensus regarding the roles that will be in most demand. A few participants indicated that the demand for senior safety generalists will rise in next 5–10 years due to their retirement. However, others predicted that demand will rise for junior and mid-level professionals.

The latter estimate appears consistent because the vacuum created by the retirement of the senior professionals can be filled by promoting generalists currently operating at lower levels. Thus, actual demand may be reflected in the lower levels of the profession when those professionals will be promoted to senior roles. However, this cannot be said with certainty and requires further research to be validated. Dobson's (2018) study also highlighted a need to devise strategies to meet this replacement demand. The HASANZ *Health and Safety Workforce Pipeline Report* (2019) estimated that 2,100 more OHS professionals will be needed by organisations in New Zealand by year 2029 to cope with the demand for OHS professionals across health and safety disciplines. However, no other studies have been conducted to estimate the future demand specifically for OHS generalists in New Zealand. To be certain regarding the demand arising at beginner levels of OHS generalists roles, further research is required.

7.4.2. Safety Maturity and Demand

Many participants correlated safety maturity of their organisations with the nature of demand. They forecasted that the demand for generalists will increase as more organisations move to reactive and calculative phases and require competent professionals to guide them in discovering their OHS obligations. Many further felt that demand for generalists will eventually reduce when a majority of New Zealand's organisations move into the proactive and generative phase and will be aware of their critical risks; then, they will demand OHS specialists specific to their operational risks.

There is ample literature signalling the importance of following safety maturity models for organisations to calculate their safety maturity level and improve their safety management standards (Filho et al., 2010; Filho & Waterson, 2017; Foster & Hoult, 2013). However, research that correlates the effects of improvement in organisational safety maturity on demand for OHS professionals is insufficient.

7.5. Capacity Gaps in the General OHS Profession in New Zealand

7.5.1. Qualifications

A key finding of the current research is that the OHS qualifications offered in New Zealand are mostly at the diploma level and, currently, very few qualifications are offered in comparison to other countries (Provan & Pryor, 2019). The study participants had concerns that the current qualifications are inadequate for developing critical thinking or any transferrable skills, as the programmes currently offered at universities and polytechnics are

broad in coverage and lack depth. Moreover, most of the programmes do not align with international competency frameworks. One participant from the academic sector highlighted the point that most OHS courses are financially non-viable for universities. Another participant indicated lack of interest among students in gaining OHS qualifications. However, given the recent uncertain times since the onset of Covid-19, the tertiary institutions have taken a more cautious approach to investing funds in OHS programmes that prove to be a major obstacle in implementing INSHPO Capability Framework in designing qualifications.

There is extensive literature that highlights importance of qualifications due to the increasing complexity of the OHS generalists' role as new OHS issues being recognised, requiring newer training techniques such as ones involving two-way interactions and applied dimension (Hale et al., 1986; Shallcross, 2013; Wu, 2011; Wybo & Wassenhove, 2015). New Zealand, as a signatory to the Singapore Accord (2017), has adopted the INSHPO Capability Framework which defines a career pathway for OHS generalists by delineating general OHS professionals' and practitioners' roles and the commensurate skills, knowledge and qualifications required for each role (INSHPO, 2017a). Thus, it serves as an international standard for designing suitable OHS qualifications for all levels.

An internet search for OHS qualifications being offered in New Zealand suggests that most of the available qualifications are being offered at a tertiary level. The details of all the major OHS qualifications currently available in New Zealand are provided in Table 3 of Chapter 2. There is a clear gap in qualifications available from Level 1 to Level 5. Most of the qualifications below Level 6 are being offered by private training establishments (PTEs) or polytechnics, while universities such as Massey University, University of Otago and Victoria University of Wellington are offering tertiary degrees and Level 7 and Level 8 diplomas.

Interestingly, the bachelor's and master's degrees offered are in health sciences, with OHS offered only as a specialised add-on. The lack of a dedicated bachelor's or master's degree in OHS may explain the absence of such qualifications. However, what is of interest for further research is why this is the case despite OHS generalists having good career prospects (Careers New Zealand, n.d.).

7.5.2. Continuing Professional Development (CPD) Initiatives

The current research reveals that there is no clear consensus regarding the nature of CPD activities. A few participants expected CPD to be formalised to be effective, yet a few others believe that CPD should be tailor-made and individualised, depending of the varying needs of OHS generalists at different stages of their careers, for maximum effectiveness. These participants believed that CPD should be taken as an outcome of reflective practice.

There is ample literature discussing different models of CPD in various professions, such as teaching and healthcare (Kennedy, 2005; Thorley, Turner, Hussey & Agius, 2009). However, not much literature exists on CPD in OHS. Nevertheless, the finding conforms with what literature is available. For example, Webster-Wright (2009) indicated that in formal CPD, the focus has shifted to the mode of CPD activity delivery, rather than the learning outcomes. Boud and Hager (2012) have criticised the transformation that has occurred in CPD because it has become an externally driven, formally designed activity with prescribed content; courses are to be taken by professionals away from their natural work environment, as opposed to the CPD being intrinsically embedded in their work, for their development over the course of time. However, the authors acknowledged the reasons underlying such a

structured format of CPD delivery, which is for the ease of measurement and recording of CPD activities undertaken by professionals (Boud & Hager, 2012).

The CPD activities available to OHS generalists in New Zealand include the formal qualifications as discussed in Section 6.5.1. Professionals can also take certificate courses with IOSH and NEBOSH in the U.K. The restrictions created by Covid-19 have led to a surge in web-based CPD activities, such as webinars and online delivery of educational material. For example, the NZISM is currently delivering CPD sessions through webinars on specialised topics, known as health and safety expert interactive sessions. However, previous research conducted by Scott et al. (2019) showed that 77% of the respondents preferred in-person CPD activities. Based on their study, the authors concluded that, to develop the OHS workforce, CPD should be tailor made and provided to suit the preferences and needs of individuals (Scott et al., 2019).

7.6. Barriers in the General OHS Profession

Regarding the barriers OHS development in New Zealand, no clear theme emerged. All of the participants held different views and their perspectives reflected their personal experiences within their fields of work. The identified barriers included:

- the non-viability of OHS qualifications
- a contempt or disregard for OHS education
- insufficient funding
- negative attitudes of the business community towards health and safety activities

- no clearly defined career pathways for OHS generalists despite adoption of the INSHPO Capability Framework
- a lack of consensus over what really matters.

The identified barriers appear to be interconnected because the lack of supply of competent professionals is linked to a lack of effective OHS qualifications available to OHS personnel. Academic institutions find it difficult to deliver qualifications, more so in recent times due to Covid 19 that has affected the education sector and has made certain OHS qualifications financially unviable. Moreover, there is also a slight disregard for OHS education (as pointed out by one of the participants in the study), or a lack of interest in the OHS field in comparison to other professions. Formal qualifications cannot be made viable, and supply for competent professionals cannot be improved, unless more individuals are attracted to pursue a career in OHS.

Regarding the participants' suggestions to overcome the barriers, there was no clear consensus, but a key finding relates to improving the qualifications framework and CPD structure in New Zealand. The participants were of the view that introducing micro-credential courses and non-vocational qualifications for OHS generalists already operating in the field to support their original qualification and embedding health and safety in the curricula of all disciplines, would support long-term OHS professional maturity. This finding conforms with the literature, which states that micro-credentialing offers an opportunity to unbundle bulky education programmes for learners, with a view to offering them enhanced learning opportunities and formal recognition for their existing skills and competencies (Hanafy, 2020; Horn & Arnett, 2017).

A second key finding relates to educating the demand side of the profession, that is, educating organisations to better understand their critical risks, particularly the small-scale organisations. This finding agrees with the literature that suggests that small scale organisations are often burdened with pressures of a different sort that make them non-compliant or ignorant towards their health and safety duties (Lamm & Walters, 2004).

7.7. Study Implications

As discussed in this chapter, there has been little research done in the context of OHS generalists' roles and competencies, features of the OHS profession, or demand for OHS generalists in New Zealand. The existing literature highlights the OHS generalists' complex role, and the competencies and qualifications they require, in performing their roles (Broberg & Hermund, 2004; Olsen, 2020; Provan et al., 2017; Wybo & Wassenhove, 2015).

The role becomes even more complex when organisations consider competing goals more important than health and safety issues (Broberg & Hermund, 2004). The literature also suggests the significance of following safety maturity models if organisations are to manage and improve their safety culture (Filho & Waterson, 2017; Foster & Hoult, 2013). This study has significant implications for the OHS profession in New Zealand as it highlights multiple issues by bringing together different stakeholder perspectives to yield a holistic view on the issues that provide a platform for further debate. Particularly, the study has raised issues of interest for both the supply and the demand side of the profession, which has implications for all those with a vested interest in OHS.

7.8. Chapter Summary

In this chapter, the major qualitative and quantitative findings of the current study were discussed in light of previous research. In New Zealand, the OHS profession is progressing, and a gradual improvement in safety maturity is evident, although organisations in New Zealand remain largely compliance oriented. The role of OHS generalists is indispensable in improving the safety cultures of organisations, which demands an array of competencies such as soft skills, cultural competency and qualifications. The demand for OHS generalists is rising in New Zealand, and this trend is anticipated to continue for years to come. However, this demand may decline once organisations achieve high levels of safety maturity, i.e., when managers have a clear perception of their organisation-specific critical risks. The gaps in the profession lie in the areas of OHS qualifications and CPD and these gaps can be addressed by introducing more long term and micro-credential courses. The OHS workforce is skilled, qualified and experienced, but is also ageing. This poses a concern for recruiting competent OHS generalists in the future if the gaps in replacement demand are not plugged.

These findings have significant implications as they represent different stakeholder perspectives and raise critical issues of interest, which can be researched further. In Chapter 8, recommendations based on the discussion are made and the study is concluded.

Chapter 8: Conclusion

8.1. Introduction

Occupational health and safety as a profession is still emerging in a number of countries committed to providing safe work environments. This current study aimed to explore the contemporary issues affecting the OHS profession in New Zealand, which is in an evolving phase after a slew of legislative and regulatory reforms that have taken place after the Pike River Coal Mine Tragedy in 2010. To this end, Chapter 2 presented a historical account and current features of the OHS profession in New Zealand, and in Chapter 3, a review of the literature on topics related to OHS was conducted. This review helped to identify potential areas for further investigation in the OHS field. The research methodology used for this study was discussed in Chapter 4. Chapter 5 presented the quantitative findings and Chapter 6 presented the qualitative findings of the study. A discussion on the key findings in light of previous research studies and literature was made in Chapter 7, while this Chapter summarises the research aims and the subsequent findings. The limitations of the study and their impact on the validity of the findings are also discussed. Further, this chapter summarises the contributions made by this study, informs the body of knowledge for New Zealand's OHS profession, provides recommendations for the stakeholders and identifies potential areas of further research for researchers of the OHS profession.

8.2. Study Objectives

This research asked five research questions that aimed to explore: 1) the current features of the OHS profession in New Zealand; 2) the current competency gaps among OHS generalists; 3) current and future demand for OHS generalists; 4) capacity gaps in the profession; and 5) barriers in the profession and ways to overcome these barriers. The study was conducted using qualitative semi-structured interviews with ten stakeholder interview participants. These participants were engaged in different fields within OHS profession such as OHS education, recruitment of OHS professionals, the leadership of OHS bodies in New Zealand, and practising senior-level health and safety professionals. An online survey targeting OHS generalists was conducted to understand the current features of the OHS profession and the perceived competencies of OHS generalists. The analysis of both qualitative and quantitative data provided the findings as summarised in the following section.

8.3. Key Findings

A key finding of this study reveals that the growth of OHS profession in New Zealand is on a progressive path, but at a gradual pace. In New Zealand, most organisations, particularly the small- and medium-sized organisations, fall within the reactive-calculative phase of the safety maturity model and use a ‘tick-box’ approach to improving workplace health and safety. However, improvement in OHS legislation and support from OHS stakeholder organisations such as WorkSafe, HASANZ and ACC will prove helpful to employers in transitioning through these stages in long run.

The second key finding relates to the role of the OHS generalists. OHS generalists play a supportive role in improving safety maturity within their organisations and in improving organisations' approaches to managing health and safety. Their role is different from the role of OHS specialists who possess technical OHS knowledge. The role of OHS generalists, on the other hand, is more strategic and influential in bringing OHS change in organisations.

As the third key finding suggests, an OHS generalist requires an array of soft skills in addition to technical skills. These soft skills are one of the most important competencies for OHS generalists in performing their role. However, gaps in soft skills, cultural competencies and OHS qualifications exist among OHS generalists. Attitudes of organisational leadership in providing support, and OHS generalists' experience are the most important factors that affect competencies among OHS generalists. There is an ample amount of literature confirming the third key finding (Blair, 2004; Olsen 2012; Provan et al., 2017).

The fourth key finding is that the demand for OHS generalists is set to increase in future. This finding is reinforced by the HASANZ *Health and Safety Workforce Pipeline Report* (2019) that estimated 2100 more OHS professionals required by 2029. The vacancies created by the retirement of senior most OHS generalists will be filled mostly by promoting juniors. This may create a vacuum within the beginner-level roles. Dobson's (2018) study also highlighted a need to devise strategies to meet this replacement demand. The nature of demand may change as the organisations in the early stages of safety maturity will require more OHS generalists to understand their specific risks and hazards, but once these organisations to reach advanced stages of safety maturity, they will understand their operational risks and hazards better.

Another important finding is that there is a capacity gap in New Zealand's qualifications framework as most OHS qualifications are available at a Diploma Level 6 or above, while qualifications below this level are few leaving no options with the school leavers to opt from within the OHS field. Micro-credential courses can be introduced to improve both the OHS qualifications and CPD opportunities for practising professionals as these courses are short in duration. They give required flexibility to the students and practising professions to build upon their OHS knowledge without committing long-term into a single course. Furthermore, CPD need to be more oriented to the specific needs of practising professionals. Some literature suggests that many academic institutions are adopting the micro-credential course approach due to its popularity and effectiveness in imparting real learning (Hanafy, 2020; Resei, Friedl, Staubitz & Rohloff, 2019). Apart from the findings, the study has some limitations that are discussed below.

8.4. Study Limitations

Despite its usefulness, this research has several limitations. The first is the small sample size of the semi-structured interviews (N=10), and the limited sample size of respondents who completed the survey (N=53). These low numbers prevented broader application of the research findings. Nevertheless, the interview participants were highly experienced professionals and stakeholders operating in, and contributing to, New Zealand's OHS profession; their opinions exhibit their experience, expert knowledge and therefore are insightful and applicable despite the low respondent response rate.

Second, a saturation of themes could not be achieved within the confines of ten interviews. The number of interview participants needed for achieving theme saturation was beyond the

scope of the study because of time and resource limitations, and therefore, participants' numbers could not be increased. While interesting and recurring findings were evinced during the course of research, the sample sizes limited replicability and transferability (Selltiz et al., 1976).

Finally, the profile of the survey respondents appears to be skewed towards OHS generalists operating in medium and large enterprises. Statistics New Zealand (2020) shows that approximately 96% organisations in New Zealand were small-sized, that is, having less than 19 employees. Therefore, the survey itself is not a comprehensive representation of the OHS generalist workforce's perspectives. However, a comparison of the findings with those from Dobson's (2018) study yielded congruences in many aspects such as the ageing OHS professionals' workforce, gender equity in OHS workforce and approximate percent of OHS professionals possessing tertiary OHS qualifications. The contributions of this research are discussed in the following section.

8.5. Study Contributions

This thesis has explored a range of issues within New Zealand's OHS profession, and the outcomes may be relevant to individuals interested in carrying out further research on OHS issues, particularly related to OHS qualifications and barriers to professionalisation. Therefore, the initial finding is particularly relevant as it shows that the demand side of the profession is low on safety maturity due to misconception about the role and utility of OHS generalists in the organisations which may have implications on the supply side in terms of provision of qualifications and competencies. The low safety maturity of most organisations creates undue organisational expectations on OHS generalists, which affects their functionality and understanding of the scope of their role.

This study mapped OHS generalists' competencies and found contrasting results. Qualitative findings showed gaps in soft skills, while quantitative results illustrated that generalists possess competencies in all aspects of their roles. This contradiction has resulted due to the nature of sample derived for interviews and survey respectively. While the interviewees shared a larger picture of competency gaps among the OHS generalists at all levels in organisations, the survey respondents belonged mostly to higher level roles in medium-high sized organisations possessing high level of competencies. Therefore, the survey finding fell short of generalisability due to small and skewed sample. The accuracy of this finding should be explored by further studies.

The finding that the current generalist workforce is experienced and ageing, and will gradually retire in the coming years, supports previous New Zealand-based research (Dobson, 2018). This should have an implication on the urgency of the design and delivery of OHS qualifications and CPD courses, and OHS as a career for young graduates as further gaps and opportunities emerge for younger OHS professionals seeking to develop their career in OHS. Moreover, while the demand for OHS generalists at all levels is set to rise in near future, the replacement demand at senior levels being met by the OHS generalists below that level would create a probable vacuum at beginner level roles, but further research is required on this aspect.

The emerging research also reported capacity gaps in the profession in terms of a lack of qualifications. One major constraint is a reluctance among academic providers to invest in introducing new and improved tertiary OHS programmes due to the uncertainties and impact of Covid 19 since last two years. This is a major obstacle for implementing INSHPO Capability Framework in designing qualifications. Thus, this study can inform the policy

debates concerning introduction of new OHS qualifications by the academic institutions and how OHS can be made a more attractive career for young graduates.

8.6. Conclusion and Recommendations

This study was conducted to understand the status of general OHS profession in New Zealand and the capacity gaps in the profession. The study also intended to explore the demand for the general OHS professionals and their competencies in the country. However, the research had its limitations in terms of available time and the limited number of participants who took part in semi-structured interviews and the quantitative survey. Despite its limitations, the study made interesting findings useful for OHS stakeholders working in various capacities within New Zealand's OHS profession. The findings have led to several significant recommendations for stakeholders and future researchers.

The qualitative findings show that many organisations lack safety maturity and that the OHS generalists play an important role of improving the organisational safety culture. This finding aligns with the available literature; however, the literature specifically linking the organisational safety maturity to the role of OHS generalists is scant. For instance, The INSHPO Capability Framework 2017 has correlated different phases of organisational safety maturity with the changing role of OHS professionals and practitioners (INSHPO, 2017a). Such a corelation is helpful for the academics, employers, OHS professionals and researchers to understand what competencies and skills are required by OHS generalists in each stage.

Another qualitative finding shows that OHS generalists often lack the soft skills and cultural competency that are an important part of their competencies. This qualitative finding is in contrast to the quantitative finding, which indicates that OHS generalists are competent in all

aspects of their role, including soft skills. Due to the survey respondents' homogenous profile, 90% of them being highly experienced and working in medium to large organisations, the finding may be questioned regarding its applicability to the entire OHS generalists' workforce. This limitation presents an opportunity for further research in the area of soft skills among OHS generalists in small organisations by future researchers.

The quantitative finding that the OHS generalist workforce is experienced and ageing supports previous research (Dobson, 2018); in addition, it also has implications on the supply side of the profession. The government and the stakeholders may require an effective replacement plan if New Zealand is to achieve a steady supply of qualified generalists ready to fill the vacuum created by retirements and promotions. To address this limitation in the public sector, GHSL has launched Graduate Health and Safety Programme and Health and Safety Summer Internship Programme with the aim to supply qualified, entry-level professionals to government agencies. Similar programmes could be launched in the private sector to meet upcoming demand and to fill the gaps created by promotions and retirement.

Additionally, further analysis can be done by interested researchers to probe if the increase in replacement demand and resulting ascension of OHS generalists at all levels induces the demand for beginner-level OHS roles. The impact of organisations' safety culture on the nature of demand for OHS generalists can also be investigated.

The lukewarm support from tertiary education institutions to offer OHS degree qualifications is a major concern and may explain the dearth of OHS programmes at all levels of education, particularly below Level 6. This study recommends education providers to design and introduce micro-credential OHS courses to increase their flexibility and affordability. Micro-

credential courses, as suggested by some research interviewees, are a promising way forward for ensuring that prospective graduates can take up specific courses according to their interests, and being less time-consuming, the practising professionals can enrol in these courses to fulfil their CPD requirements. Upcoming researchers are encouraged to further research the obstacles faced by academic providers in implementing the INSHPO Capability Framework.

Certain barriers to the growth of the profession were identified. The findings show that many New Zealand organisations either have mistrust in the OHS professionals or believe that OHS as an activity is not viable for their profitability. Moreover, not much significance is attached to attaining education in general, and OHS qualifications in particular, which poses a significant barrier to developing the OHS competencies among the general OHS professionals in the country. Another barrier identified is that various OHS stakeholder organisations are devising singular standalone solutions to the OHS problems instead of reaching an agreement for a coherent approach toward realising the vision outlined in the report of Independent Taskforce on Workplace Health and Safety. Further research should be conducted to understand the areas that lack agreement and recommendations be made.

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Workers' Compensation for Accidents Act 1900.

WorkSafe New Zealand Act 2013.

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Appendices

Appendix I: AUTEC Ethics Approval

14 January 2021

Felicity Lamm
Faculty of Business Economics and Law

Dear Felicity

Re Ethics Application: **20/354 An Exploration of Occupational Health and Safety (OHS) Competencies Among General OHS Professionals in New Zealand.**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 14 January 2024.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

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Appendix II: Online Survey Questionnaire for General OHS Professionals

Questionnaire 1 General OHS

Start of Block: A. Information Sheet

Q1
Date Information Sheet Produced:
18/12/2020

Project Title
An Exploration of Occupational Health and Safety (OHS) Competencies Among OHS Professionals in New Zealand

An Invitation
We are conducting a study using survey and interviews in the area of general occupational health and safety profession and inviting people aged 18 and over amongst the OHS professionals and practitioners, the OHS experts from government OHS associations, OHS academics, recruiters and corporates engaging OHS professionals, to participate in this study. You have received this invitation to take up survey for being an active general OHS professional or practitioner from the OHS association you are member of. The completion of this research will lead the researcher to gaining master's qualification. Your participation is purely voluntary and there will be no disadvantage to you for not participating in this survey.

What is the purpose of this research?
This study aims to know (a.) the current competencies of the OHS professionals in NZ; (b.) the current and the future demand for competent OHS professionals; (c.) the current capacity gaps at different levels of OHS profession; (d.) present and future barriers in developing the profession. The findings of this study may inform the practices and policies concerning the OHS profession in New Zealand and may be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?
You have been identified to take this survey for being a professional or practitioner in the field of general occupational health and safety in NZ. You have received this invitation to take this survey from the OHS association you are member of as an active general OHS professional or general OHS practitioner. It is an opportunity for you to share your experience on key issues surrounding the general OHS profession which will be analysed and studied for informing future practices in the

profession.

How do I agree to participate in this research?

If you are willing to participate in this study, please complete the survey and submit it. Submission of completed survey will account to you consenting to participate in this survey. You have four weeks to consider this invitation. A reminder email will be sent to you after 2 weeks of this invitation email.

Your participation in this survey is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the survey at any time before you submit the survey. After you submit your responses, your survey questionnaire cannot be identified or withdrawn.

What are the discomforts and risks?

There are no likely risks or discomfort due to participation. Participating in the survey will take around 15-20 minutes. Your participation in this survey is voluntary and if at any point, you change your mind while filling-up the questionnaire, simply close the questionnaire window without submitting the form. You are encouraged to answer as many questions as possible, for the completed surveys will maintain accuracy and quality of the findings.

How will these discomforts and risks be alleviated?

If you find any questions in the survey uncomfortable to answer, you do not have to answer them. If you wish to complete your survey later on, you can stop and return at any time.

What are the benefits?

Participating in this survey will provide you an opportunity to share your experience on key issues concerning OHS profession and contribute in enhancing the knowledge in this area of research. Completion of this research will lead the researcher to gaining master's qualification.

How will my privacy be protected?

Your responses remain anonymous to the researcher. Your privacy and the confidentiality of your information will be protected by coding and grouping your information during data analysis.

What are the costs of participating in this research?

Participating in the survey will take 15-20 minutes. There are no other costs associated.

What opportunity do I have to consider this invitation?

You have four weeks to consider this invitation. A reminder email will be sent to you after 2 weeks of this invitation email. This survey is expecting a target number of responses after which the survey will automatically end.

Will I receive feedback on the results of this research?

Due to the survey being anonymous, we will not be able to provide you the findings directly. On

the completion of the research, you can view the summary of the findings requesting a copy of findings from your OHS association. Alternatively, you can contact us on the contact details below citing interest in the findings.

What do I do if I have concerns about this research?

If you have any queries and questions, please direct them to the researcher named below rather than the association or organisation that informed you about this study.

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Associate Professor Dr Felicity Lamm, 64-9-921-9999 ext 5906; or to Dr Danaë Anderson, 64-9-921-9999 ext 5601.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Dr Carina Meares (+649) 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. Please feel free to contact me about any questions or requests for further information: Priyanka Garg on cpw5004@autuni.ac.nz.

Researcher Contact Details:

Priyanka Garg: cpw5004@autuni.ac.nz

Project Supervisor Contact Details:

Associate Professor Dr Felicity Lamm, 64-9-921-9999 ext 5906.
Professor Dr Danaë Anderson (second supervisor), 64-9-921-9999 ext 5601.

Approved by the Auckland University of Technology Ethics Committee on 14 January 2021, AUTEC Reference number 20/354.

End of Block: A. Information Sheet

Start of Block: B. Demographic Details

Q2
Please specify your age.

- 18-24
- 25-30
- 31-35
- 36-40
- 41-50
- 51-60
- 61+

Q3 Please specify your gender.

- Male
- Female
- Other
- Do not wish to disclose

End of Block: B. Demographic Details

Start of Block: C. OHS Role and Experience

Q4

What is your current role in the field of Occupational Health and Safety?

- ○ OHS Officer
- ○ OHS Advisor
- ○ OHS Coordinator
- ○ Graduate OHS Advisor
- ○ OHS Manager
- ○ OHS General Manager
- ○ OHS Group Manager
- ○ OHS Vice President
- ○ OHS Director
- ○ Other (Please specify) _____

Q5
Number of years working in the field of Occupational Health and Safety

- 0-1 year
- 2-3 years
- 4-5 years
- 6-7 years
- 8-9 years
- 10-15 years
- More than 15 years

Q6 In what sector or industry are you employed currently? Please specify.

_____

Q7 What is the number of employees working in your organisation?

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 25
- 26 - 35
- 36-49
- 50+

Q8 What was your role in your previous employment?

_____

End of Block: C. OHS Role and Experience

Start of Block: D. Qualification and Affiliations

Q9
What health and safety qualification do you hold currently?

- ○ Tertiary
- ○ Post Graduate Diploma
- ○ Graduate Diploma
- ○ OHS Certificate Level 1-3
- ○ OHS Certificate Level 4-5
- ○ Diploma Level 6
- ○ None

Q10 Are you currently enrolled in any Health and Safety programme?

- ○ Yes (Please specify the programme)
  _____
- ○ No

Q11 What are your other qualifications?

- ○ PhD
- ○ Master
- ○ Post Graduate Diploma
- ○ Undergraduate Degree
- ○ Graduate Diploma
- ○ Graduate Certificate
- ○ International Qualification
- ○ Other (Please specify) _____

Q12
Do you hold membership/registration in OHS organisations in New Zealand or overseas?

- ○ HASANZ
- ○ NZISM
- ○ NZSC
- ○ IOSH
- ○ SIA
- ○ AIHS
- ○ Other (Please specify)

_____

Q13 Do you hold any certification from OHS organisations in New Zealand or overseas?

- ○ IOSH
- ○ NEBOSH
- ○ Other (Please specify) _____
- ○ None

End of Block: D. Qualification and Affiliations

Start of Block: E. OHS Knowledge

Q14

How will you rate your knowledge in the field of Occupational Health and Safety? Please select a response for each question below.

	Very high knowledge (1)	High knowledge (2)	Moderate knowledge (3)	Slight knowledge (4)	No knowledge at all (5)
Health and Safety at Work Act 2015	○	○	○	○	○
WorkSafe policies, guidelines and procedures	○	○	○	○	○
Accident Compensation Corporation (ACC) procedures	○	○	○	○	○
ACC accreditation process for an organisation	○	○	○	○	○
International health and safety standards	○	○	○	○	○
Health and safety aspects of the industry I am working in	○	○	○	○	○
Work processes and procedures in my organisation	○	○	○	○	○

End of Block: E. OHS Knowledge

Start of Block: F. Technical Competencies

Q15
The tasks mentioned below relate to the technical aspects of general OHS role. How easy/difficult you find performing these tasks as part of your work duties? Please select a response for each question below.

	How easy/difficult you find performing these tasks?
Develop OHS policy in consistency with business strategy in my organisation	▼ Easy (1 ... I do not perform this task (4)
Interpret and apply OHS laws and regulations to my organisation	▼ Easy (1 ... I do not perform this task (4)
Apply Plan-Do-Check-Act framework as part of OHS management	▼ Easy (1 ... I do not perform this task (4)
Design and implement safety audits, inspections and checks	▼ Easy (1 ... I do not perform this task (4)
Evaluate OHS performance by assessing control effectiveness and identifying areas of improvement	▼ Easy (1 ... I do not perform this task (4)

Q16 The tasks mentioned below relate to the technical aspects of general OHS role. How easy/difficult you find performing these tasks as part of your work duties? Please select a response for each question below.

	How easy/difficult you find performing these tasks?

Continuously scan unanticipated and unexpected risks in my industry/sector and assess their potential impact on my organisation	▼ Easy (1 ... I do not perform this task (4)
Identify and define risks and assess the level of risks	▼ Easy (1 ... I do not perform this task (4)
Prioritise risks by influencing risk perception and get necessary support for mitigation plans	▼ Easy (1 ... I do not perform this task (4)
Devise mitigation strategies and allocate resources	▼ Easy (1 ... I do not perform this task (4)
Establish a risk reporting system to send regular risk-related reports and escalate matters related to unexpected and emerging risks	▼ Easy (1 ... I do not perform this task (4)
Understand, evaluate and articulate the interdependencies of OHS risks and business risks and its organisational implications	▼ Easy (1 ... I do not perform this task (4)
Inform crisis management situations to maintain business continuity in event of major incidents	▼ Easy (1 ... I do not perform this task (4)

Q17 The tasks mentioned below relate to the technical aspects of general OHS role. How easy/difficult you find performing these tasks as part of your work duties? Please select a response for each question below.

	How easy/difficult you find performing these tasks?

Apply appropriate procedure to deal with incidents of different severities	▼ Easy (1 ... I do not perform this task (4)
Recognise difference between direct and indirect causes of incident and identify unsafe conditions	▼ Easy (1 ... I do not perform this task (4)
Prepare reports on incidents within professional and legal standards appropriately categorising the incidents	▼ Easy (1 ... I do not perform this task (4)
Identify full documentary evidence to support a legal defence	▼ Easy (1 ... I do not perform this task (4)
Undertake cost analysis to assess impact of an incident on the business	▼ Easy (1 ... I do not perform this task (4)

Q18 The tasks mentioned below relate to the technical aspects of general OHS role. How easy/difficult you find performing these tasks as part of your work duties? Please select a response for each question below.

	How easy/difficult you find performing these tasks?
Identify vulnerable workers and put controls in place to ensure their safety	▼ Easy (1 ... I do not perform this task (4)
Ensure adequate rest and recuperation facilities for workers	▼ Easy (1 ... I do not perform this task (4)
Be trusted OHS advisor to employees and promote worker wellbeing	▼ Easy (1 ... I do not perform this task (4)
Exercise and clearly communicate OHS protocols to contractors, visitors and suppliers	▼ Easy (1 ... I do not perform this task (4)

End of Block: F. Technical Competencies

Start of Block: G. Core Competencies

Q19
How easy/difficult you find performing these tasks as part of your work duties? Please select a response for each question below.

	How easy/difficult you find performing these tasks?
Develop strategy, identify emerging issues and development opportunities	▼ Easy (1 ... I do not perform this task (4)
Influence and manage both internal and external stakeholders and build strong relationships	▼ Easy (1 ... I do not perform this task (4)
Make decisions on strategic and tactical issues and communicate them effectively	▼ Easy (1 ... I do not perform this task (4)
Plan and communicate change and assess impact of change on OHS practice	▼ Easy (1 ... I do not perform this task (4)
Analyse risk related data, correlate it with company/industry data and communicate outcome effectively	▼ Easy (1 ... I do not perform this task (4)

End of Block: G. Core Competencies

Start of Block: H. Behavioural competencies

Q20
The tasks mentioned below relate to the behavioural aspects of general OHS role. How easy/difficult you find performing these tasks as part of your work duties? Please select a response for each question below.

	How easy/difficult you find performing these tasks?

Collaborate and negotiate with different stakeholders	▼ Easy (1 ... I do not perform this task (4)
Actively listen and provide constructive feedback	▼ Easy (1 ... I do not perform this task (4)
Coach and mentor to enhance individuals' abilities towards high-performance	▼ Easy (1 ... I do not perform this task (4)
Exercise empathy and professional integrity in all aspects of business	▼ Easy (1 ... I do not perform this task (4)

End of Block: H. Behavioural competencies

Thank you for completing the survey. By submitting the completed survey, you consent to take part in the study.

Appendix III: Participant Information Sheet for Interviews with Key Stakeholders

Participant Information Sheet for Interview participants

Date Information Sheet Produced:

18/12/2020

Project Title

An Exploration of Occupational Health and Safety (OHS) Competencies Among OHS Professionals in New Zealand

An Invitation

We are conducting a study in the area of occupational health and safety profession and inviting people aged 18 and over amongst the OHS professionals and practitioners, the OHS experts from government OHS associations, OHS academics, recruiters and corporates engaging OHS professionals, to participate in this study. You have received this invitation for being a qualified person to participate in the interview. It is an opportunity for you to share your views, feedback and suggestions on key issues surrounding the OHS profession which will be analysed and studied for informing future practices in the profession. The completion of this research will lead me to gaining master's qualification. Your participation is purely voluntary and there will be no disadvantage to you for not participating in this study.

What is the purpose of this research?

This study aims to know (a.) the current competencies of the OHS professionals in NZ; (b.) the current and the future demand for competent OHS professionals; (c.) the current capacity gaps at different levels of OHS profession; (d.) present and future barriers in developing the profession. The findings of this study may inform the practices and policies concerning the OHS profession in New Zealand and may be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

We have identified you for being an individual of knowledge, experience and expertise in the field of occupational health and safety in your professional capacity as an academic, recruiter, OHS expert or a principal executive in a NZ organisation. We have reached you through your contact information available on the website of your work organisation or other organisations you are affiliated with. It is an opportunity for you to share your views, opinions and suggestions on key issues surrounding the OHS profession which will be analysed and studied for informing future practices in the profession.

How do I agree to participate in this research?

If you are willing to participate in this study, please email the signed consent form back to us on OHS competencies in NZ indicating your preferable mode of interview along with suitable day and time. The Consent Form is attached along with this Information Sheet in the email. Please indicate in your email if you will receive a copy of the interview questions before your interview and we will send one to you. You have four weeks to consider this invitation. If we do not hear from you, a reminder email will be sent to you after 1 week of this invitation email.

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

We anticipate your participation in a single session interview which can take place either online via Zoom/Microsoft Office or in-person at a time and place convenient to you. If you are willing to meet us in-person for an interview, it can happen at a mutually decided convenient public meeting place or at your place of work. You are invited to share your perceptions and opinions on variety of topics related to OHS. You will have the opportunity to ask questions or raise concerns. We would like to record the interview (online or using audio recorder) and take notes with your permission. The recordings will be shared with the AUT approved transcriber for transcription. You will have an opportunity to review and approve your interview transcript within one month from your interview. You will receive a summary of findings on the completion of the research.

What are the discomforts and risks?

Participating in the interview will take 45-60-minutes. There are no likely risks and discomforts due to participation.

How will these discomforts and risks be alleviated?

If you find any questions in the interview uncomfortable to answer, you do not have to answer them. You can ask the recording or audiotaping to be stopped at any time. You can indicate your preferred time for the interview in the email to us. If you want to change the previously decided time or place, simply email us offering an alternate day/time or place. If you want to change the form of the interview (from in-person to online or vice-versa), feel free to indicate your preference in an email.

What are the benefits?

Participating in this interview will provide you an opportunity to express your views, feedback and suggestions on key issues concerning OHS profession. You will also receive a copy of the findings on completion of the research. I will gain master's qualification on the completion of this research.

How will my privacy be protected?

Your privacy and the confidentiality of your information will be protected by coding your identifiable information during data analysis. All care will be taken that you are not identifiable through the findings of the research. Your information like audio recordings and interview transcripts will be kept in AUT's locked facility and destroyed six years after the data is collected. Your information will not be shared with third parties except for the purpose of this research, who, in such case, will be contractually bound to use it only for the purpose of this study and destroy it on its completion.

What are the costs of participating in this research?

Participating in the interview will take 45-60-minutes. You can indicate your preferable day and time for the interview. Reviewing the transcript of your interview will take another 30-45 minutes. There are no other costs associated.

What opportunity do I have to consider this invitation?

You have four weeks to consider this invitation. If we do not hear from you, a reminder email will be sent to you after 1 week of this invitation email.

Will I receive feedback on the results of this research?

You will receive the transcript of your interview recording to review and approve before the analysis begin. On the completion of the research, you will receive the summary of the findings through email from the researcher.

What do I do if I have concerns about this research?

If you have any queries and questions, please direct them to the researcher named below rather than the association or organisation that informed you about this study.

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Associate Professor Dr Felicity Lamm, 64-9-921-9999 ext 5906; or to Dr Danae Anderson, 64-9-921-9999 ext 5601.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Dr Carina Meares (+649) 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. Please feel free to contact me about any questions or requests for further information: Priyanka Garg on cpw5004@autuni.ac.nz.

Researcher Contact Details:

Priyanka Garg: cpw5004@autuni.ac.nz

Project Supervisor Contact Details:

Associate Professor Dr Felicity Lamm, 64-9-921-9999 ext 5906.

Dr. Danae Anderson (second supervisor), Dr Danaë Anderson, 64-9-921-9999 ext 5601.

Approved by the Auckland University of Technology Ethics Committee on 14 January 2021, AUTEC Reference number 20/35

Appendix IV: Consent Form for Interviews with Key Stakeholders

Consent Form

Project title: ***An exploration of OHS competencies among OHS professionals in New Zealand***

Project Supervisor: ***Associate Professor Dr Felicity Lamm***

Researcher: ***Priyanka Garg***

- I have read and understood the information provided about this research project in the Information Sheet dated dd mm yyyy.
- I have had an opportunity to ask questions and to have them answered.
- I understand that the interview will be audiotaped, and notes will be taken during the interview.
- I understand that I can ask to stop recording or audiotaping the interview at any time.
- I understand that the interview will be transcribed by the professional transcriber.
- I understand that I will be given an opportunity to review and approve my interview transcript within one month from the date of interview.
- I understand that my identity and information will be kept private and confidential during the research.
- I understand that my information will not be identifiable in the findings of the research.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that I can refuse to answer any questions or ask to delete any response.
- I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, the removal of my data may not be possible.
- I understand that I will receive a summary of the research findings on the completion of this research.
- I agree to take part in this research.

Participant's signature: .....

Participant's name: .....

Participant's Contact Details (if appropriate):

.....

.....

.....

.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 14 January 2021, AUTEC Reference number 20/354

Note: The Participant should retain a copy of this form.

Appendix V: Indicative Interview Schedule for Key Stakeholders

The question schedule is tentative under semi-structured format and the new areas of discussion may follow under the given broad themes.

Research participants: OHS academics

Part A: Professional experience

1. What has been your experience in terms of deciding content, structure or delivery while preparing the curriculum? What is the impact of Covid 19 on the qualifications?

2. What is the background of the students who join the OHS programs, in terms of their age, gender, and previous qualifications?

Part B: Demand for OHS professionals

3. Have you witnessed any increase in the number of students in recent years for OHS courses?

4. What initiatives can be taken to attract more individuals to take up OHS profession?

Part C. Perceptions about current capacity gaps in OHS profession

5. What are your views on the current OHS qualification framework in NZ with respect to the demand for competent OHS professionals?

6. Despite having INSHPO Capability Framework to guide, what are the problems in developing and delivering qualifications that align with the Framework requirements?

Part D: Barriers in developing OHS profession and suggestions to overcome these barriers

7. What are the impediments in developing OHS profession?

8. How the OHS qualification framework in New Zealand be improved?

9. What should be the considerations while creating OHS qualifications in future? For instance, the level of qualification, purpose of qualification and mode of delivery?

10. How can a career in OHS be made an attractive choice among individuals?

11. How can the existing OHS programs be made more effective in structure/content/delivery?

Research participants: OHS professionals

Part A: Professional experiences

1. What qualities or skills you think, help general OHS professionals in effectively performing their role?

Part B. Current capacity gaps in general OHS profession

2. How developed is general OHS profession in NZ, as compared to other countries?
3. Current accreditation system is voluntary; what are the constraints in making it compulsory like in other professions?
4. How effective are the Continuing Professional Development (CPD) initiatives in NZ? How can they be improved?

Part C. Current competency gaps in general OHS profession

5. What competencies are essential for general OHS professionals at different levels of the profession, say, Manager/Advisor/Officer?
6. What is the unique expertise that general OHS professionals have over specialist OHS professionals?
7. What are the constraints faced by general OHS professionals in performing their duties?

Part D: Barriers in developing general OHS profession and suggestions to overcome these barriers

8. What are the barriers in making general OHS a thriving profession in NZ?
9. Where we should put our immediate attention in terms of developing the profession?
10. What avenues general OHS professionals have in NZ to keep themselves updated and competent in their roles?
11. What best practices can we adopt from other countries in general OHS profession?

Research participants: OHS Recruiters/HR managers

Part A: Professional experience

1. What can be the most promising resource groups to search for the most competent OHS professionals for hiring (for instance, fresh graduates, interns, experienced OHS professionals)? Why?

2. In what ways a competent OHS applicant among all applicants be identified?

3. What are the most common expectations organisations have from the OHS professionals they aim to hire?

Part B. Demand for competent general OHS professionals

4. Can you provide an estimate of the demand for general OHS professionals in next 2/5/10 years based on the frequency of hiring you do for your clients/organisations?

5. Where do you locate most of the demand coming from; in terms of industry/sector or region?

6. What are the specific general OHS roles, lower, mid or senior; that are most in demand currently?

7. In terms of demand for OHS professionals in next few years, how equipped are we to match the demand, based on the profiles of the applicants you receive for these roles?

8. What are the competencies that hiring organisations look for while hiring across all levels of general professionals (like qualifications, job experience, specific industry/sector experience)?

9. Do hiring companies demand similar level of competencies while hiring OHS professionals for varying roles, for instance, hiring while an OHS Officer/Advisor/Manager?

Part C. Competency gaps among general OHS professionals

10. What ways the lack in competencies among the applicants for the OHS roles are determined?

11. Can you identify the specific skills/competencies that you look for in applicants for general OHS professional role, in comparison to the applicants for specialist role in OHS profession?

12. What specific competencies are significant while selecting the applicant for various OHS roles (technical aspects of role, their behaviour or attitude, their qualification, experience)?

13. Do you have to make any suggestions to widen the pool of competent general OHS professionals to hire from?

Research participants: GM executives and CEOs/leaders of OHS stakeholder associations.

Part A: Professional experience (15-20 minutes)

1. Who is a competent general OHS professional from an organisational perspective?
2. How it can be ensured that an organization employs a competent general OHS professional?
3. What are the promising places for New Zealand organisations to source the competent OHS professionals (for instance, posting job ads on recruitment websites, affiliating with organisations to hire as part of intern program, through workshops/job fairs, reference from old employees)?
4. How organisations can put themselves at risk by ignoring or not complying workplace health and safety rules?

Part B. Competency gaps among general OHS professionals (15-20 minutes)

5. What are the critical competencies OHS professionals require in different roles, say, OHS Manager/Advisor/Officer?
6. What sets apart the expertise of general OHS professionals from specialist OHS professionals?
7. What are the constraints general OHS professionals face in performing their duties?
8. What areas do you feel the newly hired general OHS professionals need training in?
9. What are your suggestions for improving the competencies of the OHS professionals?

Part C. Current capacity gaps in OHS profession (10-15 minutes)

10. As we know that in NZ OHS profession is still growing; what aspects of the profession need urgent attention?
11. What are the impediments being faced in developing the profession?
12. Any lessons we can learn from OHS profession and practices in other countries?
13. Anything else that you would like to add to the discussion based on your experience?

Appendix VI: Invitation to Participate in Research Interview for Key Stakeholders

Hello Ma'am/Sir,

This email is to solicit your participation in the Study on Occupational Health and Safety (OHS) Competencies Among OHS Professionals in New Zealand. This study entails surveying the general OHS professionals and practitioners across New Zealand and interviewing professionals working as OHS academics, OHS recruiters, OHS leaders and principal executives in diverse organisations.

You have been invited to participate in this study for being engaged in the field of OHS as an academic, expert OHS leader, principal executive or recruiter. Through this interview, we aim to explore diverse issues in the field of OHS and anticipate that you will share your views, perceptions, opinions and suggestions based on your expertise, experience and exclusive knowledge in this field.

The interview will be recorded or audiotaped for transcription. You will have the opportunity to review and approve your interview transcript before it is considered for analysis. Your interview recordings and transcripts will be kept private and confidential in AUT's locked facility. These will be accessible only to the research team and shared only with university approved professional transcriber and not to any other individual or organization. Your information will be de-identified during the stage of analysis.

The information that you provide will be used only for the stated research aim and not for any other purpose. Your participation in this survey is completely voluntary and you are free to not answer any question or ask to discontinue the recording at any time. You and/or organization will not be identifiable in the findings of the published report. You will receive a summary of findings on the completion of the research through email.

This interview is being conducted towards a research thesis, the completion of which will lead to a master's degree for the researcher enrolled in Auckland University of Technology (AUT). You have four weeks to consider this invitation. Please find attached Information Sheet for a detailed information. To show your interest in the participation, please sign the Consent Form attached with this email and send as a reply to this email.

Thank you in advance for your consideration towards participation.

Note: **Approved by the Auckland University of Technology Ethics Committee on 14 January 2021, AUTEC Reference number 20/354.**

Sincerely,

Priyanka Garg
Master of Business
Auckland University of Technology

Appendix VII: Invitation to Participate in an Online Survey for General OHS Professionals

This invitation is to solicit your participation in the Study on Occupational Health and Safety (OHS) Competencies Among generalist OHS Professionals in New Zealand. This study entails surveying the generalist OHS professionals and practitioners across New Zealand and interviewing professionals working as OHS academics, OHS recruiters, OHS leaders and principal executives in diverse organisations.

You have been invited to participate in the survey for being engaged in the field of OHS as a professional or a practitioner. Through this survey, we aim to understand the current profile and current competencies within the general OHS profession in New Zealand. This information will help us inform future policies aimed to developing the profession.

To this aim, this survey is designed to include questions on your work experience, qualifications, accreditation/certifications apart from the duties you perform in your current role and the level of ease or difficulty experienced during such performance. The questions seek to understand the correlation between your role and qualifications, and your competencies in performing the duties.

You can take this survey using an anonymous link provided in this email. The confidentiality of your information will be maintained during research. You will not be identifiable to the research team and in the findings of the published report. Your information will be coded and grouped together with the information of other participants for the purpose of analysis.

This survey is being conducted towards a research thesis, the completion of which will lead to a master's degree for the researcher, Priyanka Garg, enrolled in Auckland University of Technology (AUT). Your completed questionnaire will be accessible only to the research team and not to any organization you are associated with in your personal or professional capacity. The responses that you provide will be used only for the stated research aim and not for any other purpose.

The cumulative responses received will be statistically analyzed to understand the current status of OHS profession and the level of current competencies and the findings will help towards building a competent general OHS workforce. The findings will be shared with the OHS association you are member of. You can request them to share a copy with you. Alternatively, you can contact us for a copy of findings on the contact details given.

Your participation in this survey is completely voluntary and all of your responses are anonymous. None of the responses will ask for identifying information. The survey will take 15-20 minutes to complete. You are free to not answer any question. However, we recommend you answer as many questions possible, for the fully answered questionnaires will result in accurate findings.

To participate in the survey, please click on the following link:

https://aut.au1.qualtrics.com/jfe/form/SV_74D1rILMN7kTxzf

or scan the QR Code below:

We thank you in advance for your consideration towards participation.

Note: **Approved by the Auckland University of Technology Ethics Committee on 14 January 2021, AUTEC Reference number 20/354.** *The survey is being conducted using Qualtrics, a cloud-based software that stores data on secure servers in Ireland.*