Women's career paths in the Construction Industry in

New Zealand

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Abstract

This qualitative study explores women and their career paths to senior management within the construction industry in New Zealand. Construction is a male dominated industry, and currently, women are underrepresented in it. New Zealand is suffering a skill shortage in construction due to environmental, demographic and labour market implications which indicate that there is a need to access a new talent pool. Using a feminist methodology through the perspective of an 'ally' researcher interviews with 11 women in senior management were conducted. This research aims to determine the challenges to women's careers in construction as well as the factors which encourage and enable women to remain in and succeed in the industry. Significant findings of this research relate to challenges such as prejudice, language, work/life balance and the old boy's network that women encounter. These challenges occur across micro, meso and macro levels and hinder women's career progression to senior management in the industry. The feminist methodology in this research focused on the women's experiences. This enabled them to highlight the actions they have taken and make recommendations to further women's success in construction, including: overcoming the barriers through personal approaches, networking and mentoring opportunities for women and changing the industry for other women. This thesis presents practical recommendations, suggested by the women in this study, which can be implemented in the construction industry. This thesis adds depth to the theoretical understanding of the current construction industry in New Zealand and how contributions by women can benefit the construction industry.

Keywords: Women, Construction Industry, Barriers, Success, Career, Progression

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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

Kakala Vainikolo

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Women's career paths in the Construction Industry in New Zealand

Chapter One: Introduction

Construction, which is part of all our buildings, roads and other infrastructure, is an integral aspect of society. The term construction is very complex as it includes a diverse association with buildings and engineers. In a New Zealand context, the Australian New Zealand Standard Industrial Classification (ANZSIC) explains that *"The construction industry includes firms engaged in the construction of buildings and other structures, additions, alterations, reconstruction, installation, maintenance and repairs"* (Ministry of Business, Innovation and Employment, 2013, p.13). This definition explains that the construction industry includes all building construction, heavy and civil engineering and construction services. As mentioned, the construction industry is very diverse in a sense that it has many sub-contractors which are used and are included in this broad term. There are some things that this definition leaves out, which is noted by Ministry of Business, Innovation and Employment (2013) as the wholesalers from which materials are gathered, manufacturing of products and any raw materials such as any fragments which are used to construct roads such as tar, crushed stones and asphaltic concrete (New Zealand Transport Agency, 2017). This is important to understand as it sets the scope of participants for this research who come from these particular areas of expertise. The construction industry includes a vast amount of occupations ranging from builder to concrete layer (Register Master Builders, 2012), to quantity surveyors (Emmitt Consultants, 2017), these all come under the umbrella term 'construction careers'.

This chapter establishes the context of the New Zealand construction industry. The construction industry is a large and complex industry with a significant impact on the New Zealand economy. This is important to understand as it shows the impact this industry has on the country's gross domestic product (GDP). The construction industry in New Zealand is a major contributor to New Zealand's GDP (Gross Domestic Product) averaging at about 6.3% in 2010 (Ministry of Business Innovation and Employment, 2013). Since 2002, this industry has increased in size by 30% and is predicted to continue to increase (Ministry of Business, Innovation and Employment, 2013). In a recent report conducted by the Ministry of Business, Innovation and Employment (2016) the construction industry is now one of the largest sectors of the economy as they generate $30 billion of revenue annually.

Immigration New Zealand (2017) explains that the global construction industry has characteristics that are unique to it, but that is no different in New Zealand. The construction industry has experienced a boom, with the supply of work outweighing the supply of workers, thereby creating a skill shortage (Webb, 2015). Like other countries, the construction industry in New Zealand is a male dominated industry (Pickett, 2016) with women accounting for less than 5% of the demographic working in the construction industry (Statistics New Zealand, 2015). The next section gives explanation of the skill shortage of the construction industry in New Zealand.

'Skill shortages' in New Zealand

Just as it is important to understand the construction industry's place in the economy, another important aspect to understand is the skill shortage that the industry is currently experiencing (Webb, 2015). There are reasons why there is a skill shortage in the construction industry

such as environmental (Stuff, 2016) demographic (Statistics New Zealand, 2013) and labour market trends (Ministry of Business, Innovation and Employment, 2017).

New Zealand has experienced several natural disasters such as the Christchurch earthquakes in 2011 and 2016, the Wellington and Kaikoura earthquake in 2016 (George, 2017; Morton, 2017). Considerable repairs, rebuilds, and renovation have been required in the aftermath of these natural disasters. So, there is a demand for construction after natural disasters but it's evidential in the demographics and the domestic house shortages.

New Zealand is also experiencing population growth. Based on the latest data from Statistics New Zealand (2013) there was a population increase of 5.3% from 2006 to 2013, which means there is an increase of 214,101 people in New Zealand. Some of the population growth is due to immigration with the Ministry of Business, Innovation and Employment (2016) stating that 52,052 people had approved residential visas from 2015 to 2016. Housing supply has not matched population growth. One example is that Davidson (2016) found that homelessness grew by 25% from 2006 to 2013. The demand for housing has contributed to the construction boom and Middlemiss (2017) states that the traditional talent pool of males is not enough to meet the labour demands in the New Zealand construction industry. The industry is unable to get enough people with the skills and expertise that the construction industry needs which indicates a shortage of workers (MBIE, 2013). Furthermore, the Ministry of Business, Innovation and Employment (2013) identify the skill shortage in the construction industry as predominantly in managerial positions.

The proposition to overcome this skill shortage is to access the untapped talent pool of women (Ministry of Women, 2015). Women's skills are underutilised as there is a perception that women are not adequately suited for any role in the construction industry (Agapiou, 2002). In contrast, women can contribute to the construction industry and therefore contribute to the industry's growth (Agapiou, 2002). According to Dougan (2016) women are deemed

to be twice as productive and are also safer as they follow instructions more closely in comparison to men. This suggests that there is a need to understand how women in New Zealand could be attracted to and retained in this male dominated industry in order to fill the skill gap and labour shortages. Middlemiss (2017) suggests utilising training facilities and advice (as mentioned in Table 1) available in New Zealand to take advantage of women's skill set and use it to benefit the construction industry.

Table 1: Implementation of training and support in key industries for women

Johnstone Construction (2016)	This industry provides support for women who are wanting to enter the construction industry. The services they provide such as a scholarship specifically for women help women to gain qualification to enter in to Johnstone Construction.
Maori and Pasifika Trades Training (2017)	This organisation works together with other institutions such as Unitec, Manukau Institute of Technology and Te Wananga o Aotearoa to promote the trades to women (This includes construction). They provide support which help women to gain educational training and to find a job for them as well.
Building and Construction Industry Training Organisation (n.d)	BCITO focuses on apprenticeships which seek to facilitate organisational needs to develop and implement industrial qualifications for people who are interested in entering into a career in the construction industry.

The purpose of this thesis is to determine the challenges to women's careers in construction as well as the factors which encourage and enable women to remain and succeed in this industry. To encapsulate this, women who are in a senior management role in the construction industry are the focus of this research as they have experience of the industry and have succeeded in gaining senior managerial positions as women in construction. Their expertise will be used to understand the motivations and reasons for pursuing a career in this industry which may inspire and encourage more women to enter and remain in the construction industry. Furthermore, this thesis intends to discover what barriers women face that prevent

them from entering the industry as well as factors which enable women to succeed in construction.

Therefore, the research question of this thesis is *'What are the enablers and hindrances in women's career paths to senior managerial roles in the construction industry in New Zealand?'*

Thesis Structure

Chapter two of this thesis critically reviews the key literature on women in construction, focusing on the main barriers that women face as well as avenues for their success. The barriers are obstacles that women face while in the industry whereas the avenues for success indicate possible opportunities that women can take for support. As indicated earlier, the construction industry has experienced similar trends globally, and so the literature review draws on international research.

Chapter three explains the research design for this thesis. The research question and philosophical stance of the researcher have resulted in the use of a feminist methodology . Chapter Three justifies this choice through an overview of feminism and its relevance to this study. It also discusses the role of the researcher conducting the study.

Chapter four presents the analysis of the qualitative data. This chapter uses Braun and Clarke's (2006) thematic analysis approach. The purpose of this chapter is to analyse the raw data collected from women senior managers who are currently involved in the construction industry and how their insights help address the research question.

Chapter five is the discussion of the findings from the Chapter four in relation to the literature found in Chapter two. This chapter highlights both findings from this thesis that are confirmed in the literature and also emerging new perspectives unique to this thesis. The new

perspectives provide information from a New Zealand context and reinforce the appropriateness of feminist methodology for this research.

The final chapter comprises concluding remarks that focus on answering the research question and outlines avenues for future research. Importantly, the final chapter illustrates the significance and contributions of this study to both theory and practice. Furthermore, this chapter explains the gap this research addresses which is the women's career paths to senior management in construction in the New Zealand context.

Chapter Two: Literature Review

This chapter will highlight key aspects of the construction industry with a focus on women's progression and avenues that encourage and support women who are entering or remaining in the construction industry. A justification for tapping into the wider pool of women is presented which includes skill shortages and the need to attract women to the industry. Furthermore, barriers that women encounter in the construction industry will be identified. These barriers include the masculine culture, (Worall, Harris, Thomas, Stewart, Jessop, McDermott & Platten, 2008) gender stereotypes (Wright, 2014a and Watts, 2009a) and work-life balance (Lingard & Lin, 2004). Furthermore, this chapter will present opportunities such as mentoring and networking that contribute to women's success in the construction industry (Adogbo, Ibrahim & Ibrahim, 2015; English & Hay, 2014 and Ness, 2012). Another avenue of success is understanding women's adaptable skills to the changing industry (Jimoh, Oyowobi, Adamu & Bajere, 2016). The following section will introduce the skill shortages that are evident on an international scale of the construction industry.

'Skill shortages' in Construction

Skill shortages in the construction industry are a global phenomenon. Skill shortages as Ho (2016) explains are understood as limited numbers of workers with the right knowledge, skills, and abilities to perform a task. Internationally, there is literature to suggest that these skill shortages are similar in countries such as the United Kingdom (Gurjao, 2006), India (Baruah, 2011), the United States of America (Construction Industry Institute, 2016), China (Ho, 2016) and New Zealand (Research first, 2013; Pacifecon & BRANZ, 2013). This reinforces that the skill shortages are a global phenomenon.

There are similar attributes that these countries have which indicate that skill shortages in the construction industry are an issue within organisations. China, the United States of America and the United Kingdom identified that the construction industry had experienced skill shortages for a long period of time (Ho, 2016; and Mackenzie, Kilpatrick & Akintoye, 2000; Olsen, Tatum & Defnall, 2012). The aging workforce and lack of training contribute to the skill shortages of these countries (Baruah, 2010; Ho, 2016; Mackenzie, Kilpatrick & Atintoye, 2000; Olsen, Tatum & Defnall, 2012).

Ho (2016) and Cappelli (2015) state that there is a lack of training overall in the construction industry. More specifically, Brauah (2010) and Gamble (2013) state that there is a lack of training for women in the industry. The construction industry has specific skill sets that are vital and the construction industry searches for people who have these particular skill sets (Olsen, Tatum & Defnall, 2012). These skill sets contribute to occupations in construction in the United States of America such as carpenters, sheet metal installers, concrete workers, project managers and supervisors (McDonough, 2016).

Another similar attribute that is similarly evident in the United States of America and China is the ageing workforce. The aging workforce is explained as caused by a growing number of older contemplating an exit strategy from the organisation they are affiliated with (Ho, 2016). The ageing workforce is a contributing factor to the skill shortages that these countries have (Ho, 2016; Olsen, Tatum & Defnall, 2012): as a large proportion of the workforce contemplates retirement, vital skills are lost which need to be transferre to the younger generation (Ho, 2016).

There are implications of the skills shortage that are evident in the literature of the United Kingdom and New Zealand (Lobo & Wilkinson, 2008; Mackenzie, Kilpatrick & Akintoye, 2000). Lobo and Wilkinson (2008) state that skill shortages in New Zealand affect those who

are in the industry already as workers may need to work overtime hours, which can increase the cost to the organisation.

The literature states that women are an obvious source to meet these skill gaps (Ho, 2016). Agapiou (2002) states that women can provide a unique set of skills which will help in the construction industry. Fernando, Amaratnga and Haugh (2014) state that women's skills may include but are not limited to adaptability, interpersonal skills and self-motivation. If employers were to invest in the skills of women, this would give the industry a more diversified organisational culture and the competitive advantage based on the skills women bring to the construction industry (Agapiou, 2002).

Research suggests women are the obvious solution, and that we need to understand why there are fewer women in the construction industry, how to attract them, retain them and develop them within the organisation. The skill shortages in the industry has led to the justification of this thesis to widen the talent pool to women as a potential resource to be utilised in the construction industry. The next section will elaborate the need to attract women into the construction industry as a solution to fill the skill shortage.

The need to Attract Women in the Construction Industry

Being able to attract women into the construction industry is quite difficult as the Ministry of Women (2015) and Dainty, Bagilhole et al. (2004) state women have no knowledge of or even consider joining the construction industry. The construction industry needs to find options to facilitate the attraction of women into the industry such as providing excellent working conditions. A safe environment is a factor considered by women if they choose to work in construction. This will enable security to work freely without being hesitant of their surroundings (Munn, 2014; Arslan & Kirvak, 2004).

The literature also states that equalising the gender pay gap will contribute to the attraction of women to the construction industry (Pacheco, Li & Cochrane, 2017). International research states that there is a gender pay gap across various trades including the construction industry (Ceda, 2013; French and Strachen, 2015). In New Zealand, national statistics suggest that in 2015 there was an 11.8 percent pay gap in comparison to a 9.9 percent pay gap in 2014 in construction (Ministry of Women, 2015). The Ministry of Women (2015) further state that there are two main causes of the gender pay-gap figures: gendered stereotypical occupations and women's participation in paid work. From a New Zealand perspective, females' wage distribution is on the lower level as opposed to males' (Pacheco, Li & Cochrane, 2017). To close the pay gap would be an advantage to attracting women, as they will have an equal pay system which could make them feel included in the organisation (Ministry of Women, 2015). Wages can lure people into the construction industry but also attract the right people with a high standard of skills (Ho, 2016; Arslan & Kivrak, 2014 and Ministry of Women Affairs, 2013).

As well as providing the information and support required to attract women into the industry, it is important to recognise the benefits associated with women's entrance into construction. Research has identified the benefits women provide for the construction industry (Wright, 2014b) such as their tendency to follow safety instructions and their knowledge and application of policy.. In New Zealand in 2014, according to the Ministry for Women (2015) 213,200 women were underemployed (working less than 30 hours a week), unemployed (Actively seeking work and are available) or in the potential labour force (not actively seeking work or cannot find employment for the next 4 weeks). Statistics also show that there are more women than men (Statistics New Zealand, 2013) in New Zealand. Therefore, attracting women to construction could be a way of meeting the skill shortages. As the international research indicates (Davis, 2014; Ho, 2016; Munn, 2014) there is a clear need to

attract women into the construction industry, and this could benefit both the construction industry and the women who enter the industry. Furthermore, an attractive industry could influence retention of women who are working for the construction industry (Davis, 2014). Women are needed to fill the skill shortages but international studies have indicated that there are barriers that women encounter in the construction industry which impact their entry and their retention in the industry (Davis, 2014; Lowe & Woodcroft, 2014).

Barriers women encounter in the industry

The previous section discussed the need to attract women into the construction industry. However, studies show that there is a high turnover of women in the construction industry (Davis, 2014). This section discusses the barriers which women face and which make retention of women in construction difficult as women are continuously being treated differently to men. These general barriers include women's lack of understanding of the construction industry (Lowe & Woodcroft, 2014), lack of flexibility in work, (Agapiou, 2002; Arena, Cirillo, Mussolino, Pulcinelli, Saggese & Sarto, 2015) the concept of the 'glass ceiling', (Hoobler, Wayne & Lemmon; 2009) and slow career progression (Menches & Abraham, 2007).

Lowe and Woodcroft (2014) and Kaewsri and Tongthong (2013) argue that women do not have a clear understanding of expectations of working in the construction industry, and once women start work they discover they do not like it and leave. Lowe and Woodcroft (2014) further state that women not only leave their organisation but also exit the construction industry within five years. Furthermore, there is a lack of awareness by women in gaining the appropriate training skills needed for construction. As the literature states best practice in gathering skills in the construction industry is through practice based learning (Boyd, 2013;

Kokken & Alin, 2015). Practice based learning is closely linked to on the job training (Boyd, 2013). Studies conducted by Munn (2014), and CIOB (2006), explain that some of the factors leading to women exiting the industry include the organisational environment, working conditions such as long working hours, safety and other aspects within the workplace. Other reasons as Lowe and Woodcroft (2014) state includes the focus on the short-term plans of the organisation rather than the longevity. An example of this includes utilising resources such as technology that would benefit the worker's longevity in the organisation in comparison to workers manually lifting heavy material to lower cost for the organisation. In construction, one of the leading causes of high turnover among women is due to a lack of flexibility in the organisation (CIOB. 2006).

Research indicates that this could lead to a lack of flexible opportunities for women to advance in their careers (Agapiou, 2002; Arena, Cirillo, Mussolino, Pulcinelli, Saggese & Sarto, 2015; Chandra & Loosemore, 2004; Dainty, Bagilhole et al., 2004; Dainty & Lingard, 2006; Kaewsri & Tongthong, 2013). Flexible in this context refers to accommodating the organisation's needs and opportunity for women's personal gain in relation to benefits to their career (Davis, 2014). This could include flexible working hours and flexible working arrangements for women. A lack of flexibility can impede women's career progress because it limits the ability to balance work and family commitments (Dainty, Bagihole et al., 2004 and Watts, 2009a).

The obstacle of having no flexibility is closely linked to the notion of the glass ceiling. The glass ceiling can be understood as an invisible barrier which limits women in their ability to progress their careers to a management role in organisations (Hoobler, Wayne & Lemmon; 2009; Kolade & Kehinde, 2013; Maxwell, 2007; Mordi, Adedroyin & Ajonbadi, 2011; Wilson, 2014). The glass ceiling is a result of gender discrimination. Meyerson and Fletcher (2000) established that labour market influences regarding the gender pay gap and

stereotypical gendered roles within society are affected by discrimination. The glass ceiling has been entrenched within organisational policies and practice so that, as the metaphor describes, it is invisible and accepted as the norm unless it is highlighted as a problem (Hoobler, Wayne and Lemmon, 2009; Meyson, and Fletcher, 2000). The concept of the glass ceiling can influence the hindrance of women progressing in the industry.

Menches and Abraham (2007) state that slow career progression is something that women often experience in the construction industry. In addition, it is said that women find career progression challenging because of the roles that women traditionally have held in the construction industry (Agapiou, 2002). These are understood in the literature as supporting roles (Kaewsri & Tongthong, 2013). Through these supporting roles, women are invisible and are often overlooked for promotion or progression (Dainty, Bagihole et al, 2013; French & Strachan, 2015). The next sections of the literature review will explore the masculine culture of the construction industry, gender stereotypes and work-life balance as significant barriers that women face in the construction industry. Furthermore, the masculine culture includes different aspects such as gender discrimination, offensive language and long working hours.

The masculine culture of construction

Masculine culture is understood as a culture that rejects women from any socialising activities internally within the workplace or externally (Ibanez, 2016). There are several characteristics of the masculine culture. These include recruiting people based on service, rather than skill, and the existence of 'old boys' networks that exclude women (Worall, Harris, Thomas, Stewart, Jessop, McDermott & Platten, 2008). Furthermore, the masculine culture

relates to the notion of gender discrimination (Agapiou, 2002), offensive language (Kolade & Kohinde, 2013) and long working hours (Dainty and Lingard, 2006).

The 'old boys' culture is understood as a masculine culture that is accepting of prioritising a worker's length of service in the organisation over someone who has appropriate qualifications to fill the role (Worall, Harris, Thomas, Stewart, Jessop, McDermott & Platten, 2008). Through this culture, males who predominantly sustain loyalty to the industry have a better chance to progress in the industry. This concept is like the 'old boys' network as McDonald (2011) suggests that women are excluded from social integration and benefits not only socially but also in their careers which also applies to their progression, entry and retention to the industry. Agapiou (2002) suggests that males look down on women due to women's perceived capabilities and the fact they do not 'fit in' to the social construction of the organisational culture. As a result of this, women receive minimal support and opportunities within the industry regarding progression in to senior management (Agapiou, 2002; Dimovski, Skerlavay, & Mok Kim Man, 2010; Liff and Ward, 2001). Dainty and Lingard, (2006) Wright (2014b) and Menches and Abraham (2007) show that women have trouble joining the old boys' networks. Repercussions of women not being able to join networks is that they could feel isolated in the workplace (Dainty and Lingard, 2006; Wright, 2014b, and Watts, 2009a). Watts (2009a) further explains this isolation can lead to 'boundary heightening'. The concept 'boundary heightening' is that when someone first comes to the industry they feel isolated as they are trying to get an understanding of the workplace. If colleagues do not accept the new entrant into informal networks, then the isolation of the new person worsens (Watts, 2009a).

Within the masculine organisational culture, women are discriminated against in the workplace based on gendered stereotypes of their ability to perform (Agapiou, 2002). To

understand gender discrimination, it is best to understand the notion of gender in this context. Ness (2012) and Thayaparan, Amaratunga and Haigh (2014) explain that gender in the construction perspective is understood as a social construct of a gender's ability to perform which determines isolation from or acceptance in to the social circle in the construction. It is evident through various studies that gender discrimination has a key influence on women's decisions to enter, progress and remain in the construction industry especially in managerial positions (Agapiou, 2002; Arditi, Gluch & Holmdahl, 2013; Styhre, 2011; Wright, 2014a). An example of gender discrimination as Agapiou (2002) states is the comments men make about women's appearance and making assumptions about women's skills and abilities based on their appearance. Furthermore, another example is comments being made on their ability to use the tools of the trade (Agapiou, 2002). The masculine culture of the construction industry includes women being isolated due to the assumption that women do not have equal capabilities to their male counterparts (Ibanez, 2016).

Another aspect that this culture enforces isolation is the use of language. The term language is understood through different aspects such as accent in the workplace, or how someone may express themselves, but language from a construction perspective refers to coarse language, foul language and sexual language used in the workplace (Arditi, Gluch et al, 2013; Ibanez, 2016; Kolade & Kohinde, 2013; Ness, 2012). Ibanez (2016) confirms this notion in the literature by reinforcing that misogynous language is a masculine trait. Research on women in construction states that language is an aspect which women take into consideration when thinking about entering or exiting the construction industry (Arditi, Gluch et al, 2013; Kolade & Kohinde, 2013).

According to the research, there are two main outcomes for those who experience misogynous language in their organisation: employees would either leave the organisation to pursue another career (Arditi, Gluch et al., 2013, Arslan & Kivrak, 2004; Watts, 2009a) or

put up with the derision and ridicule ultimately conforming to the masculine culture (Dainty, Bagihole et al, 2013; Dainty & Lingard, 2006). Watts (2009b) introduces the concept of 'remasculinization'. Remasculinization describes how women managers at all levels will only remain in the construction industry if they follow the example of their male counterparts including to how they organise their family and home life in conjunction to their work (Watts, 2009b). An example of this includes women who in part choose to not have children, dress in a work suit attire, working long hours and join in the culture of discrimination against women, to have a successful career in construction (Watts, 2009b). The impact of the masculine culture results in women conforming to male traits in the construction industry; this is also the case of working long hours in the construction industry as this is an aspect that men are seen to thrive in as opposed to women (Dainty & Lingard, 2006).

The masculine culture in the construction industry relies upon a culture of working long hours, which can be a structural constraint for women (Dainty and Lingard, 2006). The structural constraint is that the construction industry was socially constructed to suit males who were traditionally perceived to have no obligations outside of work because it was assumed that they would have a wife who would organise childcare and household chores (Arditi, Gluch et al., 2013. It is assumed that women cannot comply with this because they prioritise their families and their domestic life. Wright (2014a) contests this notion by stating that women can meet the working hours required by the construction industry. This is achieved through the support of their partners (either male or female) to look after domestic life such as their family (Wright, 2014a). Another perspective concerning working hours is that woman could work part time, thus allowing more time for family roles, however Watts (2009b) explains that this is not sustainable and is problematic because parenting is viewed negatively in the construction industry. For example, men and women who try to combine work and parenting are often put down and are relieved of their work

role (Watt, 2009b) This is because managers believe that it is difficult to successfully fulfil both requirements of work and home at the same time (Watts, 2009b). The impact the masculine culture has on women is negative as there is no opportunity to understand and progress in the construction industry another important aspect that influences the hindrance of women is gender stereotyping.

Gender Stereotypes

Gender stereotype is a well-known concept that affects different industries. For example, literature on education suggests that there are gender stereotypes relating to the psychological approach 'leaders' (teachers) make and literature on comparative performance of students in the subject of mathematics (Madden, 2011; Song, Zuo & Yan, 2016). This section will look at the perceptions that males have of women in the construction industry. More specifically, women's ability to work is elaborated through the assumed stereotype of women and the stereotypical roles that males and females have in the construction industry (Francis, 2017) and at a managerial level (Arditi, Gluch & Holmdahl, 2013).

In construction, women are perceived through various ways regarding male's perceptions and female perceptions of themselves (Agapiou, 2002; Chandra & Loosemore, 2004; Ministry of Women Affairs, 2013; Watts, 2009a; Whittock, 2002; Wright, 2014a). Gendered stereotypes have an impact on perception which is evident through male's perceptions of women in the industry. Agapiou (2002) suggests that men are reluctant to accept the different perspectives women bring to the industry, especially male managers (Worall, Harris et al., 2008). Chandra and Loosemore (2004) support this as they suggest that women should conform to the organisational culture to 'fit in' to the organisation.

The literature highlights that male's perception of women include proving their ability to perform within various roles in construction moreover, in managerial positions (Agapiou, 2002; Arditi, Gluch, & Holmdahl, 2013; Denissen, 2010; Levin, 2001). Furthermore, to be recognised and succeed women must perform at higher levels than men (Agapiou, 2002). Within the context of New Zealand, women have similar perspectives of being incapable to meet the workload required by the industry, which is reinforced by social perceptions of construction work and women's suitability for it (Ministry of Women Affairs, 2013). Through these perceptions that males have of women's capabilities in the industry, there are clear influences of gender stereotyped roles. The literature identifies women's roles as clerical, secretarial, supporting roles, nursing, and non-manual (Francis, 2017). These roles are closely linked to society's gender norms that assumes women are nurturing by nature (Chandra & Loosemore, 2004; Kaewsri & Tongthong, 2013; Watts, 2009a; Whittock, 2002; Wright, 2014a). In contrast, males' roles include managerial roles, and practical roles in construction such as heavy lifting and using construction tools (Agapiou, 2002; Ness, 2012). These gendered roles are based from the assumed skills that each gender possess and can be evident in managerial styles.

Arditi, Gluch and Holmdahl (2013) studied the competencies of men and women holding managerial positions in the Swedish construction industry. One of the key findings was that women scored highly through sensitivity (soft skills) as a capability factor for women managerial positions. This means that women can handle problems with discretion and actively listen and discuss people's problems. In comparison to this, Chandra and Loosemore (2004) found that men were perceived to be independent, leaders, and achievement driven. Different norms of managerial styles are typically associated with masculine or feminine attributes. Gender stereotypes differentiate the notion of feminine work and masculine work to which their gender could lead women's decision to enter or

progress in the construction industry (Dainty, Bagihole, Ansari & Jackson, 2004). As a result, Francis (2017) states that women's skills are perceived as not suitable for the construction industry which strengthens their hindrance to the construction industry. Another aspect which requires decision being made by women to enter or progress in the industry is the concept of work- life balance Arditi, Gluch et al, 2013; Lu & Sexton, 2010; Styhre, 2011).

Work-Life Balance

Dainty and Lingard (2006) state that work- life balance is deemed to be a common issue in all workplaces in the construction industry and it can decide women's progression within the industry or commitment towards fulfilling the organisation's mission and vision. Work-life balance has an impact on the organisation but also domestic life (life outside of work). From this notion, arises the concept of work-life conflict (Lingard & Lin, 2004) which leads to the decision- making process (Arditi, Gluch et al, 2013) that women make for the betterment of their family which will be discussed in more depth in this section.

Lingard and Lin (2004) define work- life conflict as conflicting demands of work and domestic life. Such demands result in women trying to prioritise which needs more of their attention. Women may tend to have a dominant focus on domestic work more than focusing on paid work (Arditi, Gluch et al, 2013; Liff & Ward, 2001; Lingard & Lin, 2004; Wright, 2014a). This has serious repercussions in relation to women wanting to progress in the workplace as their decisions will determine their future in not only paid work but also contribution to domestic life (Arditi, Gluch et al, 2013).

Dainty and Lingard (2006) and Davis (2014) state that family plays an influencing role in the decision-making process as women search for ways they can balance child care and work responsibilities. Furthermore, the construction industry would view this as a

fundamental barrier which questions women's capabilities and their commitment to the work they are given (Lingard & Lin, 2004).

Wright (2014) and Liff and Ward (2001) confirm this notion by stating that women who have children in their care would have to decide between their family and their career. Furthermore, Watts (2009a) states that women have a cultural obligation to care for not only children but also people who are in the later stages of their lives. Childbearing is a factor which hinders work- life balance because women are perceived to have unstable working circumstances because of childcare (Arditi, Gluch et al, 2013; Ibanez, 2016; Lingard & Lin, 2004). This perception results in a 'waste' of resources which include the time and money invested in women as loyalty and retention in the construction industry are unpredictable especially in the childbearing stages of women's lives (Ibanez, 2016; Lingard & Lin, 2004). Kaewsri and Tongthong (2013) and Worrall, Harris et al. (2008) strongly suggest that childbearing is one of the major barriers that women deal with in career progression within the construction industry.

The masculine culture, gender stereotypes, work- life balance are hindrances that women face as they seek to enter or remain in the construction industry. There are possible avenues that women can take to sustain their opportunity to stay or progress in the masculine culture of the construction industry. Some ways that can aid women to progress within the masculine culture are networking and mentoring. Furthermore, women have adaptable skills that can contribute to the changing industry which will be discussed in the next section.

Networks and Mentoring

Women have many avenues that they can take that would support them in the construction industry however, two significant methods that have positive results for women are mentors

and networks (Davis, 2014; Yokwana, Ndihokubwayo & Windapo, 2016). In this section, the effects of mentors are identified (Lingard & Lin, 2004; Francis, 2017) and the expectations of a mentor from a mentee is highlighted (Yokwana, Ndihokubwayo & Windapo, 2016). The significance of networking is identified as an avenue for women's success in the industry and the impact it will have on women (Adogobo, Ibrahim & Ibrahim, 2015).

According to English and Hay (2014), mentoring involves a relationship between a knowledgeable person who acts as a role model who provides guidance and motivation to less experienced people wanting an improvement in their career. Lingard and Lin (2004) suggest that the result of mentoring is that women are more committed and show high retention rates in the organisation. Furthermore. Francis (2017) states that mentoring is related to higher compensation and progression. These positive aspects reinforce the fact that women who will seek a mentor will potentially succeed in the construction industry (Davis, 2014; Francis, 2017).

Women have two expectations of a mentor which are to support their career progression and a role model that they could admire and imitate (Yokwana, Ndihokubwayo & Windapo, 2016) which the understanding of mentors stated by English and Hay (2014) fill these desires. Furthermore, female mentors are often more preferred as it will benefit women who are trying to advance in the industry and for their personal growth (English & Hay, 2014). The benefits of having a female mentor is that they are might more likely have similar experiences.

A similar concept relating to mentoring is the notion of networks to support women's career progression in the industry. Networking in this regard is similar to aspects of the 'old boy's' network (McDonald, 2011). The general understanding of networking regards a group of people gathering together to share, encourage and teach others that will benefit from one's

own experiences (McDonald, 2011). Networks are considered as a vital support method that women can benefit from in the construction industry (Adogbo et al., 2015; Chandra & Loosemore, 2004; Davis, 2014; Menches & Abraham, 2007; Wright, 2014b).

Results of women joining networks include improved career progression in the industry due to personal development (Adogobo, Ibrahim & Ibrahim, 2015; Davis, 2014) and longevity in the industry (Jimoh, Oyewobi, Adamu & Bayere, 2016). Furthermore, Davis (2014) and Chandra and Loosemore, (2004) state that networking is a contributing factor to building strong partnerships with other women who share similar attributes, values and beliefs within the construction industry. However, Menches and Abraham (2007) state that networks are slowly changing as society changes. Such evolution will not only sustain but also expand relationships further with the utilisation of technology as a networking tool (Wright, 2014b). People can use technology to see and speak to people across the world and contact through various channels such as texting and E-mails to sustain relationships on a global scale.

Mentoring and Networking provide positive aspects which are supporting factors for women who are wanting to gain an understanding and develop in the industry (Davis, 2014). These supporting factors are the most significant methods of enabling women to succeed and remain in the industry that is stated in the literature. Through these supporting factors of mentoring and networking, women have adaptable skills that are beneficial to the changing construction industry.

Women's Adaptable Skills to the Changing Industry

The industry has changed overtime, and has now focused on technology and health and safety to enhance work abilities in the construction industry (Lee, Tse & Ma, 2016; New

Zealand Parliamentary Counsel Office, 2017; Sacks, Perlman & Barak, 2013). In this section, it will focus on the effects technology and health and safety has on the construction industry. Furthermore, the contribution of women's skills to these changes.

Jimoh, Oyewobi, Adamu and Bayere (2016) state that women's skills include: 1) detailed oriented 2) effective communication and 3) effective decision making. These are the skills that this literature states women excel in (Jimoh, Oyewobi, Adamu & Bayere, 2016). These skills are applicable to the changes that technology affect the construction industry and health and safety.

The construction industry has shifted from conducting manual work as training to virtual training (Lee, Tse & Ma, 2016; Sacks, Perlman & Barak, 2013). Virtual training in accordance to Sacks, Perlman and Barak (2013) requires attention to detail which creates a safe environment to train in until the trainee is able to conduct the work at the required standard. Women's skills are able to adapt to this change in technology, and their attention to detail can contribute to a safer environment with their attention to detail (Jimoh, Oyewobi, Adamu & Bayere, 2016).

Another aspect that is changing is health and safety. New Zealand policies have just implemented the 'Health and Safety at Work Act 2015' (New Zealand Parliamentary Counsel Office, 2017) which brings forth health and safety in construction as a priority. This requires skills of implementing health and safety in construction organisations such as sticking to a plan and adding or removing structures efficiently and safely (New Zealand Parliamentary Counsel Office, 2017). Furthermore, decision making skills to determine the risk of jobs at the construction sites. Women are deemed to obtain these skills which in turn contributes to their success in the industry (Jimoh, Oyewobi, Adamu & Bayere, 2016). Women's skills are deemed applicable to the changing construction industry and as they are given more time to gain opportunities through mentoring and networking (Davis, 2014;

Francis, 2017) women can also contribute to the industry through their adaptable skills (Jimoh, Oyewobi, Adamu & Bayere, 2016).

Conclusion

International and New Zealand statistics show global labour and skill shortages in construction (Baruah, 2011; Construction Industry Institute, 2016; Gurjao, 2006; Ho, 2016; Pacifecon & BRANZ, 2013; Research first, 2013) and research suggests that there is a need to widen the talent pool to include women (Dainty & Lingard, 2006; Wright, 2014a). However, construction has been and remains a male dominated industry with a masculine culture that discriminates against women (Agapiou, 2002; Ibanez, 2016). There are general barriers that women encounter in the construction industry which includes women's' lack of understanding of the construction industry (Lowe & Woodcroft, 2014), lack of flexibility in work requirements (Agapiou, 2002; Arena, Cirillo, Mussolino, Pulcinelli, Saggese & Sarto, 2015), the concept of the 'glass ceiling', (Hoobler, Wayne & Lemmon; 2009) and slow career progression (Menches & Abraham, 2007). Furthermore, other important barriers women encounter in construction include the masculine culture (Worall, Harris, Thomas, Stewart, Jessop, McDermott & Platten, 2008), gender stereotypes (Wright, 2014a and Watts, 2009a) and work-life balance (Lingard & Lin, 2004). Consequently, it is important to understand women's experiences in construction to remove the barriers and change the culture. The literature states that there are two significant avenues that women can access to support their progression in the construction industry which are mentoring and networking (Davis, 2014; Francis, 2017). With this support, women are able to show their capabilities through adapting their skills to the changing construction industry (Jimoh, Oyewobi, Adamu & Bayere, 2016). The aim of this thesis, therefore, is to explore the research question 'What are the enablers and hindrances in women's career paths to senior

managerial roles in the construction industry in New Zealand?' It does this through a feminist methodology that will be further explained in the next chapter.

Chapter Three: Research Design

The purpose of this chapter is to discuss feminist theory as the basis of this research. This chapter establishes the philosophical foundation of the research, the ontological and epistemological background, which contributes to the methodology and the method chosen. Often feminist research has been understood as a research paradigm that should be used by women only (Ramazanoglu & Holland, 2011). However, this has begun to change, and this chapter also outlines why this is an appropriate research approach for a novice, male researcher. This chapter provides an overview of studies that focus on being an 'ally' as part of justifying the feminist standpoint of a male individual conducting feminist research. As mentioned by Hekman (2007) and Reinharz (1992) feminist methodologies and methods have stemmed from feminist theory, so this chapter begins with an overview of some key aspects of feminist theory.

Feminist research: Overview and Background

Historically, feminism is known through feminist waves led by women to gain recognition and be visible in society. Krolokke and Sorensen (2006) explain the three waves of feminism that shapes contemporary feminism today. The first wave occurred in the late 19th century to early 20th century. Its purpose was to give women political equality and access to similar resources male counterparts had access too. This first wave had a focus on concepts of liberalism (Tong, 2009). The second wave of feminism which occurred in the early 1960's highlighted the lack of voice of 'women of colour' and took place in. The second wave asserted that previous waves of feminism had focused largely on white middle-class women. This second wave sparked a radical approach to women's voice and empowerment to produce

a coherent set of political rights such as theoretical activism and posting posters (Krolokke and Sorensen, 2006). The third wave of feminism is commonly understood as to have occurred in the mid-1990s and emphasised diversity, intersectionality and politics. This wave moved towards a social liberal approach which is confidence to do things for themselves and accepts differences between women who are black and white (Krolokke & Sorensen, 2006). Overall, feminist theory takes its focus on eradicating inequality from the feminist movement. Feminist research as stated by Denzen and Lincoln (2005) and Ramazanoglu and Holland (2011) is focused on women's experiences of their lives about gender and power imbalances. It is suggested that the focus of feminist research is to provide a voice for the social existence of women who are overlooked and not given a voice in society (Denzen & Lincoln, 2005). This perspective is closely linked to what Grant and Giddings (2002) suggest as the radical paradigm of research.

Philosophical Stance of Feminist Research

This section discusses the ontology and epistemology of the research. Furthermore, it justifies the use of a feminist ontology and epistemology which this thesis takes. Ontology is a way of understanding our existence on this earth (Grant & Giddings, 2002; Gray, 2014). There are two major ontological views: realism and relativism. Realism, as stated by Costa (2015) and Niiniluoto (1991) is based on an objective worldview that there is a reality out there which is independent from our understanding of the world we live in. In contrast, relativism is the understanding that there are multiple truths, which individuals discover and encapsulate through their study (Niiniluoto, 1991).

Feminist ontology refers to the acceptance of difference in the world and rejects what Stanley and Wise (2002) define as the Western Cartesian ontologies. Cartesian ontology is derived

from Descartes's theory of the existence of God (Sowaal, 2004). This philosophical stance believed in the logic of 'I think therefore I am'. In a feminist ontology, the researcher is a product of interaction and social constructions which mean that individuals' perspectives are formulated through interaction with others and the social structures of their surroundings. Feminist ontology takes a critical approach by challenging norms and dichotomous fundamentals of the Cartesian view (Stanley & Wise, 2002). Norms are related to our own awareness and how we accept society. In contrast, binary consists of two different aspects separated for their purpose for example we have gender roles but we understand them as masculine and feminine roles. Feminist ontology rejects these views and focuses on theorising being (Stanley & Wise, 2002).

The purpose of this thesis is to determine the challenges to women's careers in construction as well as the factors which encourage and enable women to remain and succeed in this industry. Since the construction industry is assumed to be a male dominated industry, this study would be able to accept differences and challenge norms within the construction industry. This study will achieve this by interacting with women currently in the construction industry. As Stanley and Wise (2002) suggest within feminist ontologies best practice is to have human social relationships – in other words qualitative research.

Following the use of a feminist ontology, it would be logical for this research to use a feminist epistemology also. Epistemology is a philosophical in research concerning how the researcher understands knowledge and what is deemed to be legitimate and adequate knowledge for research (Crotty, 1998; Gray, 2014; Tennis, 2008). Crotty (1998) outlines three epistemological aspects of knowledge: objectivism, subjectivism, and constructivism. (As seen in Table 2)

Table 2: Crotty's epistemological stance of knowledge

Objectivism	• Objectivism is understood as an existence of reality to an individual's consciousness. The research builds on a scientific inquiry in which researchers are distant from the acquired knowledge. • This epistemological stance focuses on one truth in which individuals conform to, and researchers are not to intervene with this knowledge to understand the full extent of this knowledge. • This perspective is linked to a positivist theoretical paradigm.
Subjectivism	• Subjectivism interacts with the 'object', but the meaning is not primarily established through the interaction but rather is made through what Gray (2014) state as collective unconsciousness. • Gaining an understanding of our belief systems, interactions with our external environments contribute to establishing meaning which is the basis around the idea of collective unconsciousness. • This concept is closely linked to a postmodern theoretical paradigm.
Constructivism	• Constructivism relies on interactions with the realities of this world and not on the external realities of this world. To understanding meaning, constructivism state that meaning is constructed but not discovered. • From this premise, there are multidimensional truths in the subject/ object which mean that constructivism accepts the complexity and multi-disciplinary of truths in reality even if it is a particular occurrence • This epistemological stance is related to an interpretive theoretical paradigm.

Adapted from Crotty (1998) and Gray (2014)

Constructivism is the main epistemological logic which underpins feminist epistemology (Grant & Giddings, 2002). The women who are participating in this research will share their experiences, and according to the constructivist epistemology, it primarily focuses on the meaning that is constructed through interaction with the interviewees as well as the interviewees' own social interactions in relation to their careers in construction.

A feminist epistemology critically focuses on gender and the complexities that surround this regarding differences and power relations between males and females. (Anderson, 1995; Doucett & Mauther, 2006; Stanley & Wise, 2002). Furthermore, Anderson (1995) identifies feminist epistemology through two key points which are: 1) exposing male-focused

influences on theoretical inquiries and 2) also defending feminist scientific practices in which incorporate a commitment to women and equality of all persons. Based on the literature, feminist epistemology focuses on equality in which this thesis projects this idea as an appropriate justification for this research. The literature reviewed in chapter two put males as the set 'standard' in which individuals would have to reach to be 'seen' in an industry such as construction (Agapiou, 2002). Epistemology is closely linked to our theoretical perspective, the methodology that is deemed appropriate and the adequate methods for the type of research an individual would want to pursue (Crotty, 1998).

Feminist Methodologies

Feminist methodology challenges social norms and promotes social change, social justice and equality (Beckman, 2014; Doucet & Mauthner, 2006; Eriksson & Kovalainen, 2016; Olsen, 2005). The focus of feminist methodology is to bring women to the forefront of research and conduct research in a way that does not cause substantial harm and values women for what they are worth despite gender power imbalances in society (DeVault, 1996). As this methodology is deemed to focus on women (Hekmann, 2007), the underlying principle is that in society, men are believed to be the standard against which those who do not match this standard of performance, mentality, and culture are noted as being 'different' in society. This has clear historical implications of gendered work stereotypes and inequality, which is a key component of feminist methodology which targets understanding and acknowledging historic inequality (Davies, 2012). Davies (2012) notes that inequality within society is based on gendered stereotypes and norms in relation to work and domestic life amongst other aspects

Historically, patriarchy has been understood to be the driver behind gender inequality. The work of Hartmann (1976) and Walby (1989) state that patriarchy is a system in which male

dominance is a norm within some groups in society. To those who do not meet this male dominance are often viewed negatively. Thus, in exploring women's career paths in construction, a male-dominated industry, and the challenges and enablers of their careers, a liberal feminist methodology is appropriate to this research as it focuses on inequality based on gender and rejects the notion of patriarchy (Tong, 2009). Davies (2012) further notes that inequality may include work and domestic life. A feminist methodology is vital for this research as it allows the women who are in senior management to have a voice, be at the forefront and values their experiences and knowledge through the research process in this thesis.

Role of the researcher

An important aspect of feminist qualitative research is that of reflexivity of the researcher. Reflexivity is an important activity that a qualitative researcher does which means that the researcher will have an impact on the research whether it be data collection, the questions asked, or the relationship between the researcher and interviewees (Horsburgh, 2003). It is important because the role of the researcher provides an interpreted view that this research cannot detach from the experiences gathered from the interviewees. The researcher becomes a part of the study as the researcher is often motivated by their existing values and beliefs to conduct the research (Horsburgh, 2003). I am attracted to this study through my own cultural beliefs of equality and diversity.

In this section, reflexivity focuses on the role of a male doing feminist research. The role of a man conducting feminist research is something that is considered 'different' as it is often assumed that women should conduct feminist research with women interviewees I therefore provide appropriate justification in the following paragraphs based in feminist theory and in

the concept of male researchers becoming 'ally's' to women, who are the minority in construction (Brown & Ostrove, 2013).

As mentioned previously, feminist theory is a broad concept that has several subcategories within this theory. One of the philosophical ideas resulting from feminist theory is Liberal Feminism. Liberal Feminism started as far back as the eighteenth century and had evolved as it reaches the twentieth century (Tong, 2013). Liberal Feminism has a primary focus on equality between men and women (Davies, 2012; Tong, 2013). In the concept of liberal feminism, the research is based on a viewpoint that there is inequality, and the research attempts to change the inequality. Feminist theory aims to achieve equality between men and women, it should therefore extend this to the norms of research, in accepting men conducting feminist research. Another reason as to why it is not acceptable for men to conduct feminist research could be men may not put the thoughts of women to the forefront. My beliefs are aligned with liberal feminism which means the aim is to put women's experiences to the forefront of their career paths in the construction industry.

Another concept that could be 'borrowed' in discussing the role of a man doing feminist research is that used among Lesbian, Gay, Bisexual and Transsexual literature is an 'ally' (Brown & Ostrove, 2013). Brown and Ostrove (2013) and Brooks and Edwards (2009) state that an ally is someone who is of the dominant group in society who aids someone who is part of a non- dominant group. Their purpose, as mentioned in Ji (2007), is to facilitate a welcoming and inclusive environment for those who are in the non-dominant groups. These various groups feel comfortable to be open about their uniqueness and accept those of the non-dominant group for who they are or accept this group as an equal. To identify an ally as mentioned by Brown and Ostrove (2013) they must make the intentional choice to stand together for the rights of the non-dominant groups and the other characteristics in which

identifies an ally is offering support which will result in meaningful relationships with those of the non-dominant group.

This logic has a positive connection to this study of the career paths of women in senior management roles in the construction industry and the justification of males conducting feminist research. The characteristics of an ally are closely related to the goals of feminist research and based on the literature of allies: the foundation of an ally is to help the non-dominant group or people. It is about allowing the minority to feel included and not afraid. Furthermore, showing support to the minority is important. As a male researcher conducting feminist research, the knowledge of giving value and taking women's view as the feminist methodology is achievable as male researcher becoming an ally.

Through the feminist theory and notions of being an ally, justification is made that male researchers can pursue feminist research as it allows to provide inclusion of non-dominant people (Brook & Edward, 2009). Working towards equality is the driving force of doing this research as women have not had the opportunity to work in and pursue careers in construction free of inequality.

Feminist Data Collection and Analysis

The lived experiences provided by women in senior management and their career development in the construction industry. This research seeks to obtain particular data, the appropriate method for data collection is in-depth interviews. The interview is based on a verbal exchange of knowledge from the interviewee and the interviewer receiving the information that is vital to the study (Gray, 2014). Cohen, Manion, and Morrison (2000) state that gaining interviewees' experiences, attitudes and behaviour is an essential process facilitated through interviews. This research will use semi-structured in- depth interviews.

In-depth semi-structured interviews are a type of interview that is based on pre-designed questions which elaborate on specific issues and topics that the interviewer wants to discover during the interview (Bryman & Bell, 2011; DiCicco-Bloom & Crabtree, 2006; Eriksson & Kovalainen, 2016; Flick, 2014; Gray, 2014). Semi-Structured interviews allow the interviewer to give the participant guidance and flexibility at the same time to answer questions based on the interviewees understanding, but also to expand upon issues that the participant identifies as essential to the research (Gray, 2014; Eriksson & Kovalainen, 2016). This is suitable for this research as it allows the interviewer to have some consistency across multiple interviews as well as enabling the women in senior management in the construction industry flexibility to express their experiences and understanding, including to raise issues that had not yet been identified by the researcher.

Semi-structured interviews are also appropriate for novice researchers developing their interview skills and are not as time-consuming (Whiting, 2008) as other methods such as open-ended interviews, focus groups, and phenomenological interviews. This is an important consideration in the context of the time constraints of a Master's thesis. However, semi-structured in-depth interviews also enable the depth and complexity of information necessary for research within a critical paradigm (Grant & Giddings, 2002).

A technique used in in-depth interviewing that is helpful to gather the raw data from the interviewees is probing. Probing are following questions that help the interviewer to gain an understanding of what the interviewee is talking about for example in this research, clarification of barriers and enablers are important (Gray, 2014). The use of the probing technique will be vital to gain reassurance and diminish miscommunication concerning understanding the women who will express their stories. With having a clear understanding of the methodology and methods that are suitable for this critical paradigm, it's important to establish the sample of interviewees and the processes of gathering the interviewees.

Interviewees'

The sample type that would be used for this research as mentioned in Gray (2014) is purposive sampling. This specific type of sampling is based on the notion of purposely trying to reach out to a particular group because they possess that knowledge cannot be acquired elsewhere. The selection criteria for participants that this study will follow include 1) participants currently working in a senior management role in the construction industry 2) must obtain a minimum of five year's industry work experience. 3) All participants must also be fluent in spoken English as it is a common denominator for communication. There is no universal definition of 'senior manager' as it differs based on different circumstances. The criteria of senior management for this research is understood through Kinicki, Scott-Ladd, Perry and William's (2015) top and middle levels of management. Primary attributes which apply to understanding the criteria of senior managers for this research is the authority to make decisions in the organisation and the implementation of policies and plans for workers (Kinicki et al., 2015). These attributes determine senior management candidates for this research. Women who have reached this stage in their career in the construction industry have had to work their way from some lower level position either within the industry or from outside of it to arrive at the current position they are in, and so their experience is vital to fulfilling the purpose of this research. The selection process is based on a 'first in' basis of those who are eligible for this research. Further to this, only those residing in Auckland will be interviewed. Auckland is known to be a primary key area for the construction industry (Statistics New Zealand, 2013). It is also the city in which the researcher studies and lives, so is appropriate within the context of Masters Research.

The participants were recruited via an advertisement distributed by the National Association for Women in Construction (NAWIC) to their members. The National Association for

Women in Construction (2017) is a professional association for women which provides a voice and professional support for women who are in the construction industry. As the participants are from this organisation, this provides confirmation that they are women affiliated with the construction industry. From this initial process, the snowball technique will be taken to recruit participants for this thesis. Scott (2015) state that the snowball method starts from a core group, in this case the women from NAWIC, who then provide information on the research to their own contacts and networks.

A total of 11 interviews were conducted with women in senior management positions in the construction industry for this thesis. This research is an acceptable amount as this sample size reaches 'data saturation' for this study (Malterud, Siersma & Guassora, 2016). Marshall (1996) identifies data saturation as *"the number of required subjects usually becomes obvious as the study progresses, like new categories, themes or explanations stop emerging from the data."* (p. 523). With in-depth semi-structured interviews, 11 interviewees can provide sufficient data for this research. Sandelowski (1995) further notes that this sample range is deemed too small to progress to a theory and too large for narrative analysis.

Ethical Consideration

Ethics approval was sought from the AUT Ethics Committee for this project. Approval was granted on 19th September 2016, and the project reference number is 16/321. Key considerations in ethical research are interviewees' privacy, risk assessment, informed consent and confidentiality Patton (2002). Each participant who agreed to participate in the research was provided with a participant information sheet outlining the study and its purpose, how to participate, and how confidentiality of interviewees will be protected.

The women who agreed to participate were all given the option to opt out of the study at any time up to the completion of data collection. All interviewees indicated their consent to participate in the study by filling out a consent form.

Kenyon and Hawker (1999) explain that researcher's safety is also important to consider when doing research. They suggest that a focus on the area of equipment, personal demeanour, knowledge and accountability and avoidance strategies. My safety comprised of having my supervisors number on my phone and emergency contacts in case of any misunderstanding, miscommunication or emergencies in the interviewing process of this research. Personal demeanour includes using appropriate gestures such as smiling and acknowledging instances of barriers that women come across to ensure building rapport with the interviewee.

Data Analysis

This thesis used thematic analysis described by Braun and Clarke (2006) as *"a method for identifying, analysing and reporting patterns (themes) within data."* (p. 79). As Guest, MacQueen and Namey (2014) further suggest thematic analysis is an exploratory qualitative analysis in which the role of the researcher in this instance is to read and reread the content or data with a focus on finding certain keywords, recurring trends and themes which are deemed important to answer the research question. There is an analytical process which this thesis will follow, derived from the work of Braun and Clarke's (2006) six phases of thematic analysis (As shown in Table 3).

Table 3: Doing thematic analysis: A step by step guide

Phase 1	Read your data and familiarise yourself with it
Phase 2	Producing codes which are deemed relevant to the research question.
Phase 3	Look for relevant themes associated with answering the research question
Phase 4	Evaluate the themes
Phase 5	Defining the themes and naming themes based on the essence of data retrieved
Phase 6	Producing a scholarly publication of the analysis

Adapted from Braun and Clarke (2006).

As a researcher, it is suggested by Braun and Clarke (2006) in *phase one* that we must engage ourselves as a novice researcher to the data collected through reading and rereading to understand what has been said. As part of phase 1, I transcribed the raw data myself to enhance my understanding of what is being said by the interviewees.

The *second phase* of analysis involves sorting the familiarised text into codes which reflect recurring ideas and trends as mentioned by Guest, MacQueen and Namey (2014).

The requirements of *phase three* state codes from *phase two* are grouped into common themes. In *phase four*, the researcher evaluates the theme if it meets the standard of being able to answer the question, the extent, the content and how the theme is being depicted towards the content in which the purpose of the study will focus on.

Phase five proposes the themes that researchers developed through their interpretations of the recurring themes that appeared through the initial codes are refined and defined. As a researcher, it is best to refine the theme to the point where it focuses on a position but contributes to the other existing themes and contribute to answering the research question. This leads to the final phase of producing a scholarly publication.

In the final phase, the publication must be as stated in Braun and Clarke (2006) as *"concise, coherent, logical, non-repetitive, and interesting"* (p. 23). This is where it is possible to make links towards different themes to tell the story and how it fits with the study and the body of knowledge. This phase is consistent with the writing of the thesis.

Thematic analysis is deemed appropriate as the interviewees for this study will be expressing their experiences and thematic analysis would be an appropriate way to group the participant's experiences into recurring themes which could create meaning and provide vital information especially for other women who may be affected by New Zealand. The purpose of a feminist methodology is to put women in the forefront for them to be seen and heard (DeVault, 1996) and with the use of thematic analysis is a contributing factor in accomplishing this. In achieving this, the standard of society (the white male) as suggested in feminist theory (Hekman, 2007) is then contested through the themes provided by the interviewees.

Feminism was a movement which allowed women to make a stand for themselves and through time this action had been embedded into philosophical perspectives and research frameworks. Feminist methodology is the foundation of this thesis. A male conducting feminist research can be justified through the principles of liberal feminism and the concept of being an ally (Brown & Ostrove, 2013; Tong, 2013). The use of in-depth semi-structured interviews is deemed appropriate to fulfil the purpose of getting the lived experiences of the women in senior management in the construction industry here in New Zealand.

Chapter Four: Findings

The purpose of this chapter is to present the key themes from the analysis of the semi-structured interviews which are related to the barriers and enablers that women in the construction industry face in a New Zealand context. The aim of this research is to identify the challenges and the success that women experience in the construction industry and to showcase women's knowledge of the industry and how women can be encouraged into and retained in construction.

The data was collected using semi-structured interviews with 11 senior managers who are in the construction industry. The National Association for Women in Construction (NAWIC) assisted with the recruitment of the interviewees and then the snowball technique was used to recruit further interviewees. Interviewees came from a range of sectors within the construction industry. (Please see Table 4 for summary).

Table 4: Demographics of the interviewees

Names	Age Range	Sector	Tools pathway/ Professional pathway	Family Status	Qualification
Emma	30-40	Government	Professional pathway	Married with Children	Bachelor of Law Bachelor of Arts
Charlotte	30-40	Sub-Contractor	Tools pathway	Long term relationship Children	Bachelor of Architecture
Abigail	51-60	Sub-Contractor	Professional pathway	Married with Children	Degree in Accounting and Marketing
Sophia	51-60	Government	Professional pathway	Solo mother with children	Diploma in Interior Design Diploma in Surveying small to medium buildings
Olivia	41-50	Government	Tools pathway	Married with Children	National Diploma in Architecture Diploma in Surveying small to medium sized buildings
Madison	61-70	Consultancy	Professional pathway	Married with Children	Master's in English Literature
Dezaray	41-50	Contractor	Tools pathway	Married with Children	Degree in Quantity Surveying
Lily	30-40	Contractor	Professional pathway	Long term relationship, No children	Degree in construction project Management
Riley	30-40	Sub-Contractor	Professional pathway	Married with Children	Bachelor of Business Diploma in Construction Management Diploma in Quantity Surveying
Natalie	51-60	Contractor	Professional pathway	Long term relationship, No children	Masters of Business Administration
Zoe	51-60	Contractor	Professional pathway	Married with Children	Degree in Teaching

As outlined in Table 4, there are two typical pathways for women in the construction industry that emerge from the findings. One is progressing from the 'tools' which means starting a career in construction from the bottom in jobs such as builder, labourer, handyman/ handywomen, painter and so on. The second pathway is to progress through 'professional' roles including administrator, an assistant to a senior manager at their workplace or through their field for example communications, sales, surveyor for example. The women interviewed for this thesis suggested that more often than not women progress through the professional pathway. Of the 11 interviewees two had sales roles, six had professional roles (this includes HR, legal, administration, communication services), and two had come up from the 'tools'. However, the nine interviewees indicated that they would have liked to have advanced through the 'tools' pathway if they were given the opportunity to start again. This is because they thought it would provide more experience which could contribute to their progression in the industry. It is apparent that all women have a tertiary qualification. Out of the 11 interviewees, two have post graduate qualifications while the remaining interviewees hold qualifications ranging from diploma to a bachelor degree. Two interviewees re contractors which means having direct affiliation to the construction sites. In contrast, the three interviewees that are sub-contractors do not work in direct contact with the construction site, but have key skills and knowledge that contribute to the construction sites.

Themes

There are four main themes which emerged from the data. These themes are

1. Barriers in the construction industry for women

2. Overcoming the barriers

3. Support systems in the construction industry

4. Changing the industry

These key themes will be discussed in detail in the following sections of this chapter.

Theme 1: Barriers in the construction industry for women

All 11 interviewees experienced barriers to their career progression in construction. They identified four main barriers that women experienced during their career in the construction industry: prejudice, the 'Old Boys Network', language and work-life balance which is discussed further in this theme.

The interviewees identified prejudice as a significant barrier that women face in their workplace. Out of the 11 women interviewed, seven interviewees experienced prejudice as a barrier during their career in the construction industry. According to the interviewees, prejudice is judgements made of women by men. The interviewees further explained that male co-workers judge them based on the perception that women do not have the skills and abilities to succeed in the construction industry. Dezaray touches on this issue by stating that:

> *"I think the main barrier for me was prejudice umm I still get it from sub-contractors now, 'Oh no can I speak to the boss?' 'You are speaking to the boss', and they are just shocked and go silent on me…"*

Dezaray's experience with sub-contractors is an obvious example of the interviewees' definition of prejudice. Prejudice is based on the misconception males have of female skills and abilities. In Dezaray's case this meant that subcontractors would not believe that she was the boss, which caused her difficulties in getting her work done and in being taken seriously. This prejudice is apparent in Abigail and Sophia's experiences.

Abigail stated that *"I've sat on a lot of industry boards and I've noticed that because I haven't come on through the technical side, there is a presumption that I don't know anything…"*

Whereas Sophia mentions that

> *"when I first started work, a lot of the guys that I was working with, gave me a bit of a hard time, this is a blokes job and funnily enough, the builders and stuff didn't give*

me a hard time at all, it was my colleagues, yup so you know umm yea they thought I should be doing office work not inspection work, so the other sort of battles I guess was understanding construction"

Riley's evidence of perception is that there are

"still crusty old builders who won't trust you because you're a women and certainly in my current role, overseeing the whole department, when my administrators have a problem, it gets escalated to me and there are still people who think that female voice on the end of the line, I would suspect that umm that they would back down more quickly if a man was saying the same thing that I'm saying."

The perceptions mentioned by Abigail, Sophia and Riley are those they've experienced from colleagues, however, Madison states that the perceptions of women are not suited for construction as perpetuated by employers and managers also:

"can be employers themselves I think there's a change going on, there's probably some men out there who like and who wants it to stay as a male domain because they might probably look at it like one of the very last Bastian left so you're probably always have a certain element of that."

Individuals' perception of women's abilities are clear here, however, it is appears that male managers are reacting negatively to the changes that are seeing an increase of women in construction because it threatens how they view the industry as a male domain.

Prejudice is closely connected to the 'Old Boys Network' as the interviewees' identified as been affected by these barriers from their male counterparts. The interviewees interpreted the old boy's network as a space established for male socialisation through internal workplace and external environments. Zoe and Dezaray's experiences suggest that they are not welcomed into this space as it is specifically male-focused for the purpose of networking and socialising. This hinders progression opportunities for the interviewees' careers or the construction industry. From the 11 women interviewed, five women identified the old boy's network as a hindrance in the opportunities to progress their career in construction. Sophia had encountered the 'Old Boys Network' during recruitment and Abigail experienced the 'Old Boys Network' as exclusion from social and networking activities. externally with

colleagues within her workplace. Sophia experienced the old boy's network through the recruitment process into the construction industry. She mentions that *"I applied for a job and I didn't get it, and I thought I should've got it you know, I felt I was the most qualified umm and this was the first time I think of experiencing the 'Old Boys'..."* Sophia explains the foundations of the old boy's network as being excluded based on her gender.

Among the interviewees, those aged from 41 to 60 are the interviewees have predominantly identified the old boy's network as a significant barrier to their career. This aspect is significant as it communicates that those women who have been in the construction industry longer than younger colleagues will have been more exposed to exclusion from the old boys' network. Socialising in a social group can result in formulating a 'common' language only understood by the group members themselves which is deemed acceptable to some and not to others. In the next section, the barrier of language as suggested by the interviewees' is explored.

The barrier of explicit language was identified as an obstacle by the interviewees as some language is not acceptable in their perspective. Two interviewees identify the language as a barrier in the construction industry. This is the least significant of the barriers mentioned by the interviewees. The senior managers defined the type of language used by men in their workplace as offensive language that is not acceptable in a workplace environment. Specifically, for this barrier, the offensive language was seen as disrespectful. Profanity is used often in daily conversations by men in construction which made the interviewees feel uncomfortable or uneasy. The two interviewees agreed that there needs to be an acceptance by women of this as to some extent, it is characteristic of males to use this type of language. Dezaray states that:

> *"You've got to accept the language, I mean I found it quite shocking when I came to New Zealand first because of the language at the level of acceptance, language here is very different to what I'm used to in the UK…"*

Abigail further notes that

> *"Some of the conversations that go on around you umm you have to be careful on how you handle them, and they are as I said a misogynous society the construction industry is…"*

Dezaray and Abigail both mention that there is a level of acceptance of the offensive language that is portrayed in the workplace. Abigail and Dezaray suggest that one way of dealing with it is to speak directly with the person using that language, and make them aware of the issue, but in a discrete manner to reduce negative impact on their workingrelationships. However Abigail further mentions that an alternative would be to take an indirect approach to dealing with the person using offensive language through 'joking' around with them and hinting that the language used is not acceptable to the women. Abigail explains these alternatives by saying that

> *"You ignore it umm and the other is that you let them know that you don't particularly like it but in a particular way because if you go to hard, they would just cut you out or just shut you down, you're no longer relevant to them."*

Dezaray further notes that New Zealand is more accepting of swearing than the United Kingdom. Language is an important aspect of the construction industry as it fosters communication from employee to employee and also employee to management to fully understand plans and consistency. The use of language in an inappropriate manner suggested by Dezaray and Abigail, may lead to relationships being broken and for women it could result in isolation. The next section will elaborate on work-life balance and its importance to women who are progressing in the construction industry.

The interviewees indicated that their families have an impact on their decisions and actions taken in the workplace, and work-life balance is a barrier to progress in the construction organisation from the interviewees' perspective. Four of the 11 interviewees identified childbearing (as a part of work-life balance) is a barrier to their progression in the

organisation. The interviewees suggested that work-life balance is a barrier based on their values in relation to family and childcare. With this perspective in mind, there are two aspects that affect women in relation to work-life balance: external factors influencing career choices and prioritisation; and a lack of flexibility in their work.

The external factors that influence the interviewee's career choices includes their family influence and being able to prioritise what is more important to the individual and the family. An example mentioned by Charlotte is:

> It's really hard for women who want to have kids, it's almost impossible to stay at the same level, some people do it, but they do it at some significant personal cost umm it's probably been a factor as to why I haven't had biological children myself…"

Another example by Dezaray brings a similar approach to prioritisation by providing the example of how her husband left his job to be a full-time father:

> "my husband has given up his job as a policeman in the UK, so he's a full-time parent with care now, so he looks after the kids, he's the house husband, and I come back to work and other women I know are in the same position as me or similar position to me, their partners take main care of the children"

These examples suggest that depending on how family responsibilities are prioritised, there is an associated cost to the personal lives or careers of women in construction. Another example is that Charlotte chose not to pursue having children but rather to focus on work. Dezaray on the other hand acknowledges that her husband sacrificed his career in order for Dezaray to continue to pursue her career.

Turning to the workplace itself, the lack of flexibility is referred to by Madison as women not being able to cater for both work and life commitments due to the demands of working in the construction industry. Madison touches on this by stating

> "I tell you the one area that I think is tricky though as for women is around umm having babies right because most of us so I expect that's the period of time where what does flexibility look like, either that period, I think that's trickier area and I think it's probably; projects are very time driven and time bound and the culture on a site as you know you start at 7 and you finish at X right, that's the time and there's

an expectation everybody's going to be doing that I think one of the shifts that does need to occur and will occur overtime is actually well when women are in that situation or the prime caregiver"

The lack of flexibility in work, hinder women's careers by making it difficult to balance their career and childcare. This section has discussed some of the key barriers to women's careers in construction of prejudice, the old boy's network, offensive language and work- life balance. The following theme addresses how the interviewees overcame or dealt with these barriers.

Theme 2: Overcoming the barriers

Nine of the interviewees identified that their personal characteristics influenced how successful they were in the construction industry. The personal characteristics that are identified were perseverance and dedication.

Five of the nine interviewees expressed that perseverance is about exceeding expectations of not only management but also the unspoken expectations of their male counterparts. However, dedication is based on the interviewees' understanding that in order to progress, they need to persevere over time, not just do the job well on the day, but show commitment and improving skills.

Riley, Dezaray and Sophia express that exceeding expectations is about meeting unspoken performance expectations of male colleagues and managers, which often required women to work to a higher standard in order to prove that they were competent. Riley states that

"I think there's probably unspoken, unwritten expectations umm and I think I will break them but purely because you can't argue with results you know but like I said I'll have to work three times as hard and really prove those results before they would consider me for something that they would probably consider somebody else for more easily"

Sophia expressed something similar:

> *"men don't seem to prove themselves, we strive; women need to work twice as hard if not more and even then, they're still not great, it's like oh yea you know, I still do feel that"*

Dezaray further notes that

> *"I'm not the type of person that would just sit back and I think a lot of women in my position are exactly the same, we are quite hungry for our own success so I pushed myself to put myself out there, say put my hand up and to be a hand up rather than to be a hand out person"*

These expectations that male workers have is deemed the set standard for these women to be accepted into by the male counterparts. If the women meet these invisible standards, then there is a higher chance of progression for them in the workplace and they may be welcomed more into networks.

However, proving yourself requires perseverance over time. Natalie states that

> *"I think it probably took me 2 years, but to be fair, I wanted it to be that time, I didn't want to rush it you know what I mean, I just want to earn my stripes in a way that I learned what I needed to learn"*

Whereas Lily states that

> *"make sure that people could see that they are good at their jobs which is no reason why they wouldn't be, drive, they need to want to do it umm it's no good somebody just doing it because it gets them a pay check at the end of the week, they need to want to progress, I would say, Yea I think so"*

The recognition of abilities and work ethics and taking time to prove themselves are key aspects for perseverance in the company they work in. This is similar to dedication as Abigail and Madison suggest that it is more than just a job but it also highlights what Charlotte and Emma touches on which is consistency in the workplace. Abigail mentions that

> *"well to me I love creating things and so and to me umm the fire protection industry, you're involved in the creation of buildings but it has the other additional tick boxes for me; boxes ticked sorry which actually people look surprised but we do actually help*

people save lives by what we put in and then there's the complexities of the engineering of the systems and the technology as well umm and for me it ticks quite a few boxes"

Furthermore, Madison states that *"I love construction, I think it's a wonderful opportunity for people".*

Charlotte also speaks about perseverance, and making progress over time:

> *"I've been made redundant or when I you know something sad when I've chosen to leave my own work every job I've had has been a jump in responsibility and in faith so I guess having a lot of career changes, it's been difficult, it's resulted in me being very well paid at a very young age"*

Emma further supports this argument by stating that consistency is about "resilience you know the umm just keeping on going, you know when it's getting tough and sticking at it umm you can be too, well you can't be too sensitive…" The concepts of having to build your career and reputation among male colleagues over time, was expressed by interviewees as earning your stripes, which meant as well as working hard, showing loyalty, respect and commitment to the industry. Although, as outlined in the previous section, the women interviewed experienced barriers to their career progression based on their gender, perseverance and dedication are examples that these women use as a contribution to enable them opportunity of success in the industry they work in.

Theme 3: Support systems in the construction industry

Nine out of the 11 interviewees benefited from support systems. Examples of support systems include networking, professional associations and mentoring. These systems are designed to help women improve understanding of the construction sector and share ideas with other women which could benefit their career.

Four interviewees stated that networking is understood as an association of people who share, learn, teach and talk about innovative ideas and share knowledge and insights about individual's experiences. The interviewees identified two aspects to networking, the first

about finding networks and building networks through skills women may have. There were several networks within the construction industry that interviewees knew about and were members of. Clearly, as several of the interviewees were recruited via the National Association for Women in Construction, this was one network that 10 of them belonged to. For example, Sophia mentions that

> *"I belong to the building officials, I was the [position] of the [city] Branch, and I was involved in the National Association for Women in Construction, NIBS building surveyors, institute of building…"*

The National Association for Women in Construction (NAWIC), NIBS: The New Zealand Institute of building surveyors and institute of building refers to New Zealand Institute of Building are networking groups that are available for anyone in the construction industry. This is something that helped Sophia build her reputation and exposed her many people that she affiliates herself with who share common values and beliefs.

Charlotte mentions that through construction

> *"Specifically, I think NAWIC is an amazing organisation. I'm really blown away by how there's an organisation that can be professional and supportive umm networking is crucial without an agenda necessarily I don't know…they're like all my friends, they're not all just construction industry but it's a massive network, and in one way or another it helps."*

From the four interviewees' experience, they state that finding networks start from joining groups that have similar attributes that the interviewees relate to. For example, Zoe mentions in her interview that women can easily get the support if they just attend industry related events in which they can be acquainted with other women who may share their experiences and tips of the trade. This is one method used to find networks is by finding networks through different associations available such as NAWIC, but another way that the interviewees identified of building their networks was through their own expertise. By having skills and capabilities' that is unique to the area they work in, some of the interviewees found that it attracted people to network with them.

Emma touched on this notion by stating that they've *"never had a lawyer in the house so umm it sort of grew from there, and slowly I built relationships with the people that you know were needing my advice and then their apparent need for it became more obvious.*

Hard work and being recognised based on the skills and abilities these women contribute to the industry as key factors that helped build relationships with co-workers.

The interviewees described mentoring as an individual at a higher level providing support for a protégé eager to upskill in preparation for career progression if given the opportunity. The most important aspects of mentoring that the interviewees touched on was the mentor's role in their workplace, the employees' role in mentoring and giving back to the organisation through mentoring.

Mentors are not obligated to take the role and they do not have to be specialised in the role mentee is doing. Furthermore, the mentors are preferably from inside the same workplace as the mentee or outside of the organisation but in the same industry. For example:

Sophia mentions that

> *"You don't have to be technical to be a mentor, just someone to bounce it off from…* A mentor's role is to facilitate and listen to the needs of an interviewee and provide advice wherever applicable."

Lily mentions that

> *"I always had a mentor, a female mentor I had, she was a senior site manager and she was fabulous so any problems I had I would always be able to talk to her."*

Riley further notes

> *"I'll be happy to mentor you so umm it's not something that I've come across before, but I'm interested in fostering those kinds of relationships because umm being able to talk things out with someone who a little bit removed from the situation does give you a lot of clarity."*

It is apparent that the role of the mentors is to listen and facilitate ideas that the mentees' have in a way that would show the benefits and cost to doing that idea, but there is also the factor of always being available for the mentee. There is a sense of reliability that the protégé expects from the mentor and there is the feeling that mentors are dedicated to fulfilling their role towards their protégé. Becoming a mentor is identified through someone who can listen, facilitate ideas to the mentee and be available for the mentee, the interviewees also identified the employees' role in this context is to find someone who meets their needs and who would benefit from the mentor's capabilities and knowledge.

Natalie further explains that

> *"Ultimately I have to say what helped me. I had a fantastic mentor umm through my journey, through management and I learnt a lot umm, but I also think I am the kind of person that umm will seek out a mentor, I will seek out someone who I think is good umm I will seek out someone who I see in the industry who I admire and I might observe that person ahh so those are little things I do…"*

The choice of mentor influences the opportunities for development of a mentee, and so it is important to approach someone who cannot just provide advice, but also opportunities. This notion is closely linked to what Riley mentioned about the leadership theory called the 'law of the lid'. She goes on to say

> *"The law of the lid umm talks about how you can only; a manager can only develop you to their capabilities you know, so I guess any trainer can develop you to the limit of their capabilities and then if you want to grow beyond that then you need a manager who's got greater capabilities…"*

This is a leadership theory that she has learnt that has helped her especially with mentoring. Ultimately, her aspirations drive her to become better and because of this sets goals to work under people she admires and can learn from, including in a senior leadership team:

> *" so, part of the reason why I want to be on the senior leadership team in this company is that we have a very good CEO that I'd like to work under, to be developed more…"*
> *(Riley)*

Mentors and mentoring were identified as important to career progression by some of the interviewees. Interviewees who were more advanced in their career indicated a different set of aspirations which involve giving back to their company by becoming a mentor and sharing their knowledge and skills to protégés who are interested in being mentored. For example, Natalie touches on this aspect by stating that

> *"I want to, but at some point, I would really, really like to give back to the industry so my feeling is that I would like to do some mentoring myself."*

Madison also mentions that

> *"I think for me it's been more about umm probably thinking about; it's that giving back part of it for me, it's actually being part of that change that is necessary"*

Natalie and Madison similarly suggested that they could take a proactive approach to help women to succeed in their area of expertise within the construction industry. This is perhaps a reflection of the women interviewed themselves, several of whom had taken proactive approaches to seek out networks and support themselves.

The interviewees' expectation of a mentor includes looking for someone who has the similar or abilities that exceed their own to build their abilities. A result of this is, the interviewees have contemplated giving back to the organisation by becoming mentors themselves. These are new and practical ways to support the changing industry.

Theme 4: Changing the industry

The senior managers' experience through their workplace gives them time to find out the organisational culture and how they fit into it. Through their experience of overcoming career barriers in construction, they are well placed to make recommendations to what could be changed in the construction industry to encourage women into the industry and then to retain them and provide them good opportunities.

The interviewees identified three aspects that support women to enter construction:

1. Gaining practical experience

2. Women providing adaptable skills to the growing industry

3. Knowledge of what work in the industry is like to the younger generation to further understanding and widen career prospects.

The interviewees explained that gaining firsthand experience in the industry as taking a practical approach by working at the workplace. Abigail explained her own and encouraged other women to follow her approach:

> *"Do it, have fun, don't take anything personally, umm and just because you haven't come through the tools doesn't mean you don't understand or have a good perspective of what's needed, we bring a different perspective, don't underestimate that and follow your instincts because women, every time I go to follow my gut; I wish I had, and don't make others feel that you're not relevant because you are."*

It is apparent that Abigail taking the initial step creates a trial and error experience which resulted in an understanding of the organisation and application or organisational culture to her values and beliefs. Madison notes that experiences play a vital part in the changing industry which could shape not only the industry but also the influence it poses on education. Natalie further mentions that

> *"It's a fantastic industry, umm there's potential to diversify and learn umm it's I think; I actually, me personally have never encountered any negativity to any women in the industry… none at all, umm you don't have to look like a bloke or act like a bloke to come in here, umm and it's exciting, and I think to, now with technology, in particularly plumbing, and electrician, you don't have the physical element; a lot of that physical element has gone, what it actually needs is umm it needs a little bit of pride and good technique for things to actually go"*

The notion of perception plays a part here as Natalie suggests that mentalities and stereotypes of the construction industry have shifted over time. Other women that were interviewed have also implied the shift. These experiences are closely linked to what Madison and Lily

expressed about integrating experience and education as a process to help women understand and learn about the construction industry.

Lily was fortunate enough to experience the integration of education and practical based learning which took her within a ten-year timeframe to complete her professional degree and gain proper experience in the field to excel in her career. Madison further notes that this aspect is what she calls 'Work Awareness'. She states that it is

> " about what experience that you've gained is as important as those of qualifications as well, but I think you need both… it's actually getting more relationships going with businesses whereby there's a work commitment, and there's a learning commitment going on almost side by side…"

Madison states that integrating business practice with theory based learning is a best practice for women who are seeking to enter, understand and learn about the construction industry as it has changed overtime.

Two of the interviewees mention that the construction industry has been transformed with the advancement of technology and an increase in health and safety policies which indicates there is less heavy manual labour involved.

As stated in the interviews conducted, the interviewees explained the unique qualities that they thought women bring to the construction industry. These qualities include women are able to handle direction and also follow procedure very well and have adaptable skills to handle any risk. For example, Emma states that

> "I think women and risk are a good combo, I think women manage risk really well, they tend to see risk and be good and coming up with you know ways to solve it, and it doesn't matter what part of the industry you're in"

An addition to this, Madison state that

> "I think is critical within that is that because of technology and because of health and safety I think they really allow a much wider opening for women in the industry, what was heavy machinery or heavy construction is no longer heavy construction being the big boot that lifts everything."

As stated by the interviewees, women have appear to assess and react to risk better, they following plans and concepts and tend to pay more attention to health and safety. These aptitudes support women in the construction industry as they have adaptable skills which are beneficial to the industry.

Seven out of the 11 women interview suggested building awareness of the construction industry using the education system, particularly high schools. Awareness is understood by the interviewees as women in the younger generation knowing about the changes and benefits they could bring to the industry. The interviewees thought that high schools are the best place to share awareness with women of the younger generation who would then have a clear understanding of what the construction industry is like now. Creating a better understanding of the contemporary construction industry would help breaking the stereotypes that the construction industry is hard physical work and that women are not capable of working in this industry. Olivia recommends this approach:

> *"I don't feel it's been pushed enough in schools and so forth, and that they know that there is that career pathway… I'd love to sort of push it through schools and things like that and go to say hey, think about it umm women are more than capable you know I mean you know they've got a gadget for everything, to lift this, push that you know so they're not back breaking at all…"*

Natalie further notes that to help young women become aware of the career opportunity the construction industry holds is that it is best to:

> *"get into schools early, and you need to get young girls that are in the construction industry right at the coal face and maybe all aspects of it as well you know so get women that are; cause there are women that are in HR, there are women that are in marketing, there are women in supplies, there are women in design, so go through the whole spectrum of it, you know umm so because there are career paths; there business, there's a business element, there's a design element, and there's a construction element you know…"*

Madison has taken a practical approach into raising awareness into the education sector as she uses her cadets she states that her students have

> *"actually gone and spoken to a number of schools, spoken to groups of mothers and so we're trying to actually draw our cadets or young ones and get them to go back to school so they can have that conversation and start to broaden that world, tell their story but at the same time open up what the story of construction can look like."*

This is an example of taking the initiative in showing what the construction industry is like to the younger generation of women is important to understand for the future of the construction industry.

Conclusion

This chapter presented the four distinct themes arising from this research: barriers to women in the construction industry; overcoming the barriers, support systems and changing the industry. The barriers included prejudice, old boy's network, offensive language and work-life balance. Women overcame the barriers through their own perseverance and dedication which contributed to those women having a more successful career in the construction industry. The support systems that interviewees thought were most useful for women in construction are networking and mentoring. Networking consists of sharing ideas and formulating robust partnerships which entail enhancing understanding of work ethics and avenues to success in careers, and direct women's career pathway's in the construction industry.

As mentioned by the interviewees' new technologies are being introduced to the industry which creates a shift in focus from traditional manpower required for a role in the tools to maintenance and function of these technologies and the health and safety of the employees

in the industry. The interviewees recommend trying the industry to gain personal experience in the industry. There is an initiative to raise awareness in educational institutions.

As this chapter focused on the findings provided by the interviewees, the next chapter will discuss these key findings in relation to the academic literature outlined in chapter two.

Chapter Five: Discussion

Munn (2014) and Agapiou (2002) state that the construction industry is a very male dominated industry and this is also the case in New Zealand (Pickett, 2016). This lack of diversity in the industry has contributed to a skill shortage due to its limited pool of workers. This is apparent on an international scale occurring in the United States of America, (Olsen, 2012) India, (Baruah, 2010) and especially in the United Kingdom (Worrall, Harris and Thomas, 2008). It has been proposed that skill shortages could be addressed by encouraging women into the construction industry and providing rewarding career paths for them (Munn, 2014). The aim of this thesis is to determine the challenges and opportunities that women experience in their career path in the construction industry. This chapter discusses the findings of the existing literature on women in construction. It aims to address the research question *'What are the enablers and hindrances in women's career paths to senior managerial roles in the construction industry in New Zealand?'* This chapter begins by reviewing typical career paths for the women interviewed for this thesis. It then discusses the key barriers identified and how those are similar and different to those already established in the literature. Lastly, it then discusses possible avenues for success suggested by this research.

Barriers in the construction industry for women

Academic literature elaborates different obstacles that women face in the construction industry. Some of these barriers include work-life balance (Lingard & Lin, 2004 and Baruah, 2011), gender stereotyping, (Chandra & Loosermore, 2004, Watts, 2009b, Whittock 2002 and Billing, 2011) long hours of work (Dainty & Lingard, 2006, Wright, 2014b and Fielden, Davidson, Gale & Davey, 2000) and the old boys network (Worrall, Harris, Thomas, Stewart,

Jessop, McDermott & Platten, 2008). The women interviewed in this thesis suggest that barriers such as prejudice, the 'old boys' network, language, and childbearing factors are evident in their workplaces. These barriers are hindrances that delay or prevent women's careers in construction which are similar to previous research.

Prejudice is used in this thesis to refer to preconceived perceptions of women's work ethic and ability in the construction industry. These preconceptions of women in construction as stated in Agapiou (2002) are that women are incapable of using tools, women are not designed to work with heavy material such as metal sheets and concrete and, in addition to these women do not understand the organisational culture of construction. For example, Dezaray experienced male subcontractors doubting that she was the boss. Similarly, Abigail had experienced prejudice as her capabilities were questioned as she did not progress through the 'tools'. These prejudices are similar to the gendered stereotypes found in other male-dominated industries such as the gaming industry (Hayes, 2005; Vermeulen & Looy, 2016 and Wan, 2014), mathematics (Song, Zuo & Yan, 2016) and higher education (Madden, 2011). Moreover, Ness (2012) states that it is also evident in skilled building trades (such as plastering, plumbing, joinery).

In construction, Ness (2012) defines gender stereotypes of women as a social construction. This gender stereotype is changed through drawing on external (to the construction industry) social influences on the notion of gender to shape the idea of gender in the construction industry. Other research within the trades and more specifically construction has identified that gender stereotypes consist of the assumption that masculine work is 'outside' and feminine work is 'inside' (Dainty, Bagihole & Neale, 2000). This thesis argues that perceived preconceptions contribute to the segregation of masculine and feminine roles in construction. For example, the jobs that women this thesis held, such as administration and sales, did not involve technical or physical skills and are jobs that are usually expected to be inside.

Furthermore, they are often perceived to be separate from the culture of the 'tools'. The work of Dainty, Bagihole, Ansari and Jackson (2004) confirm this in the literature by stating that women explain that their gender influences their entrance into and also progression within the construction industry.

A second area that was identified by interviewees that are a significant hindrance to women's career advancement in the construction industry and other trade businesses is the 'old boys' network'. The old boy's network is loosely defined as a social network of predominantly high-status men who contribute information, influence and status to increase labour market opportunities (McDonald, 2011). This concept has similar implications to gender discrimination are hindered on career opportunities as they are discriminated from social networking avenues such as the old boy's network (Bowen, Edwards and Lingard, 2013).

The work of Dainty and Lingard (2006) confirm this as they explain women's career pathways in the construction industry are hindered because of gender discrimination. This thesis confirms this aspect but has gone beyond the meso level focus of Dainty and Lingard (2006), and it is evidential through the experience of Sophie.

Sophie experienced the 'old boys' network during the recruitment process of applying for a job within her field of expertise in the construction industry. Sophie's career was already hindered before entrance into the construction industry. Hossain and Kusakabe (2005) state that the underpinning concept of the 'old boys' network is evident on an international scale.

Extensive research shows that women are discriminated against based on gender and that organisational culture is a crucial influence on discrimination. This thesis confirms that organisational culture is important (Dainty & Lingard, 2006), but adds depth to that research to include the impact that offensive language in the workplace has on women.

The organisational culture of the construction industry is predominantly perceived as stated by Ibanez (2016) as a 'pigness' culture. The pigness culture is based on masculine culture

apparent in the industry which includes gendered stereotypes, culture and language hence why these aspects are barriers towards women's career progression. Offensive language is understood as a social or professional aspect of the masculine culture hindering women's presence in the construction industry through males marking their territory in the industry against women (Ibanez, 2016) and serve as humiliation tactic for women (Kolade & Kohinde, 2013). Language is influenced through two aspects which is social and professional (Ness, 2012; Kolade & Kehinde, 2013). The social dimension of offensive language is incorporated through 'jokes' (Ness, 2012). The 'jokes' that men refer to in conversations in the workplace include *"rape, dangerous 'pranks', the sabotaging of work and overt hostility to physical attacks"* (Ness, 2012 p.664). The socialising use of offensive language is similar to offensive language used in a professional setting through the masculine culture which in turn the work conducted by Kolade and Kehinde (2013) Arditi, Gluch and Holmadahl (2013) and Ibanez (2016) suggest the outcomes offensive language may have on women in the industry.

One of the ways that offensive language affects women is that it can cause women to not feel included in the workplace (Kolade & Kohinde, 2013). Offensive language and negative stereotypes of women limit their representation in the industry (Arditi, Gluch & Holmadhal, 2013) and prevents their inclusion in social and professional networks in their organisation (Ibanez, 2016). This is important to understand as even though only two interviewees identified this theme, they explained its significance in connection to the male dominance of the construction industry.

In this thesis, Abigail states that *"Some of the conversations that go on around you umm you have to be careful on how you handle them."* This refers to an acknowledgement being made by the women in this thesis that there is an understanding of this barrier. However, this thesis provides two distinct practical methods of dealing with this barrier Dezaray and Abigail suggest acceptance however Abigail further state that an alternative could be creating an

indirect approach. Acceptance as suggested by Dezaray and Abigail refers to women's perceived obligation to accept offensive language. This perceived obligation to acceptance means that women would have to adapt to the offensive language through disregarding it on purpose. Women accepting offensive language may result in improved or sustained work relationships with their male counterparts in their organisations. Thus, influencing progression for women is a potential outcome if they seek to accept this language. Work within construction is based on a strong team culture, especially among the trade workers. This team culture is needed because of collaborative communication that goes into planning and implementation of projects with the different areas of construction such as sub-contractors, suppliers, builders and planners. Therefore, some women choose to accept and ignore offensive language because it may hinder not only their career but also the idea of team culture in the construction industry. There is a reliance on relationships to contribute to the functionality of this industry hence why language is an influencing factor that hinders this important aspect in the construction industry.

This thesis mentions that the second means of coping with offensive language is to approach men to address the issue discretely. Thus, creates an indirect approach. This indirect method is through women hinting or making humorous remarks to their male counterparts to stop using offensive language. The outcome of this method is that men may accept women's criticism of using offensive language, or they reject women's indirect approach which will hinder future social opportunities for success and progression for women. The practical implications of accepting offensive language or selecting an indirect method to administer to this issue that women in this thesis suggest are distinct in comparison to the literature that focuses on language. The literature states hindering outcomes such as fewer women representation in the industry (Arditi, Gluch & Holmadhal, 2013) and weakened career progression for women (Kolade & Kehinde, 2013) whereas this thesis contributes positive

methods that influence women's retention but more specifically enhance career progression opportunity. The literature identifies that language is an issue but it does not provide solutions. A different obstacle that women face which not only affect their career but family life is work-life balance. The literature on this topic provides a broader aspect of childbearing which is work/life balance (Watts, 2009b). Watts (2009b) elaborates on work/life balance as a concept based on care which is predominantly expected that women will take responsibility for. This care that women undertake is to the older generation, children and themselves (Watts, 2009b). Childbearing is a barrier because as mentioned by Ibanez (2016) of women having unstable careers, to balance childcare with work. One way of dealing with this is to redistribute care through the family. An outcome of women adhering to this cultural expectation (Watts, 2009b) is socially damaged from the workplace if child care is taking priority over their career (Billing, 2011) or loyalty to the workplace will be questioned as a result to prioritising care for children (Lingard & Lin, 2004).

Two most important aspects are apparent in the findings of this thesis includes women's choices may risk hindering career progression, and decisions made by women will affect not only their career but also their family life which is the life they have outside of their career (Dainty, Bagihole, Ansari & Jackson, 2004). Women's choices are based on endeavouring to achieve the best outcome in balancing their career and family life. This is similar to gender stereotypes as women are stuck between unfair gender stereotypes in construction and then stuck with gender stereotypes that expect them to care for children. Charlotte states that it is difficult for women to have children and stay at the same level. She further notes that if women do choose to pursue this method, there is some significant cost. The implications that Charlotte states are that having children from birth may cause hindrance in career progression in the construction industry and Watts (2009) may have presented the motives that other

women have which could confirm reasons which underpin Charlotte's decision about progressing in the construction industry.

Women are choosing to look after their child; it will affect their career through missing out on enhancements that may occur in the workplace such as technology influences, policy changes and other aspects in the organisation that is modified. Furthermore, Billing (2011) state that women would be socially disadvantaged from their workplace because of childbearing. Women in this thesis mentioned state that there is no time to keep themselves updated and continue to be known in the industry. Career progression will also be withheld as connections in the organisation will be discontinued due to childbearing. Childbearing is a barrier as it could hinder women's progress in the industry, but childbearing, as stated in this thesis, may also affect decisions being made for their families.

One impact that is portrayed in this thesis is a member of the household will sacrifice their career opportunities for the priority of their children. The underlying choices that are addressed through this decision-making process are who will benefit socially and economically more in their workplace. Ibanez (2016) further notes that the root issue of childbearing is women's job being unstable for example, Madison explains that the result of this is seeking flexibility to facilitate a good work/life balance. Having a good work/life balance is the best option for women's families. However, this is done within the constraints of prevailing culture in construction such as long hours of work (Fielden et al., 2000).

The barriers discussed above, answer one part of the research question '*What are the enablers and hindrances in women's career paths to senior managerial roles in the construction industry in New Zealand?'* A new perspective that highlights in the one study how barriers operate at multiple levels within the industry: the micro, meso and macro. For example, on an individual level (micro) the barriers of prejudice and language are affiliated with this level. Childbearing correlates at an individual and organisational level (meso level and micro level)

as it is choices that women make which affect not only themselves but their careers and finally the industry or national level (macro) the old boy's network. The women in construction literature does not explicitly identify these different levels and how they interact. However, some explanation could be found outside of the women in construction literature and Acker's (2006) inequality regimes help explain this. Acker (2006) states that inequality regimes are *"interrelated practices, processes, actions and meanings that result in and maintain class gender, and racial inequalities within particular organizations"* (p. 443). Acker (2006) explains that inequality regimes exist not only in organisations but their surrounding society and that these interact across all levels. Action conducted on an individual, organisational or national scale, therefore, contributes to hindrances to women's careers in the construction industry. This thesis presents evidence that obstacles to women's careers in construction occur at multiple levels such as individual and national. As women encounter these barriers in this research, they seek to find avenues which contribute to the success of this industry.

Overcoming the barriers

This section addresses how women can achieve success in construction as identified by the interviewees. Significantly the women not only identified their strategies for a successful career in construction but also how they are trying to improve the industry for other women. This includes how the women in this thesis overcome the barriers, the use of networks and mentors and how they are changing the industry through promoting firsthand experience, skills adaptability and promote it as a career prospect for the next generation of women.

It is evident through this thesis that women will find avenues to drive their success in the construction industry. These channels may include 1) how the women themselves improved

their careers or overcome barriers, and 2) what they are doing to improve it for other women. In this thesis, these channels are seen as a 'refuge' to support women in their career and also sustain their knowledge of the construction industry especially if women exit the industry. For example, Madison experienced this which resulted in her pursuing self-employment. The work carried out by Madison was still within the construction industry and dealt with industry clients. The context of refuge is related to women developing and sustaining their careers by looking for other opportunities to survive in the industry such as self-employment and personal characteristics that support women in this industry. This would not only help their career but also give examples on survival to other women who may experience an obstacle in their career.

In this thesis, perseverance and dedication are personal characteristics which are vital contributions to the achievement for women's career progression. Women in this thesis see these personal characteristics are a way of surviving in the industry and as a ticket to acceptance by their male counterparts through persevering and dedication to achieve required results of the organisation. Fernando, Amaratunga and Haigh (2014) state that personal characteristics contribute to the success of women in the construction industry. In this thesis, Dezaray mentions that women are hungry for success for the betterment of themselves and to prove acceptance from senior management and gain respect and acknowledgement for work carried out, so they do not sit around, they would do whatever they can to get through. Fernando et al. (2014) further mention women's characteristics may include being *"able to work with different culture and people, the focus of work, willingness to work, working hard, communication skills and individuality"* (p. 61). Agapiou (2002) further explains that women declare their contributions to the construction industry through finding alternative channels from what the industry already have to approach challenges they come across. Through experiencing discrimination, women discover ways of coping which develop skills and

knowledge they need to succeed. Through their networking and mentoring they can share these coping strategies with other women.

Two main perspectives that this thesis touches on which contribute to women's success in the construction industry is finding networks and building networks. Work conducted by Davis (2014) and English and Hay (2015) confirm that finding networks and building networks are vital to support women in the construction industry. In the New Zealand context, there are different opportunities for networking that are available for women as mentioned in the introduction chapter. Some of the network associations are affiliated with the government-industry with the Ministry of Women and in the education industry with Ako Aotearoa and Building and Construction institution of Training Organisation. The National Women in Construction Association (NAWIC) provides opportunities for women to share ideas and socialise with other women in the industry.

Finding networks is important for women as it helps to build reputations and gain exposure in the industry. Building reputations will help with leveraging in the sector which coincides with what Davis (2014) mentions that networking can contribute to enhancing solidarity with other like-minded women in the construction industry. Through these networks, women can create supportive relationships which could improve their retention in the industry (Jimoh, Oyewobi, Adamu & Bayere, 2016). An alternative to finding existing networks in the industry that the women interviewed in this thesis discussed is to build networks.

Research by McGuire (2002) refers to networks as exchanging resources and services to other like-minded people. This is similar to how the old boy's network is defined by McDonald (2011). By saying this, women have adopted the concept of the old boy's networks and adapted the attributes to suit themselves. Industry networks provide supportive relationships and the ability to share information. However, another aspect is that of sharing/teaching practical type skills. For example, Emma explains that because there is a scarcity of people

who acquire her skill set or her role in the workplace, people need her knowledge hence subordinates would build a relationship with her. This is applicable on an organisational level but also on an industry level. The literature provided by Adogobo, Ibraham and Ibraham (2015) state that networks contribute to the progression of women in the construction industry. Progress is made through knowing people who are in a higher position than the individual to which networking can create a relationship where the person in more senior positions can see and hear about the potential the individual has which could result in progression. An alternative support system which provides similar outcomes is mentoring.

Mentoring as mentioned in this thesis is about an individual at a higher level being able to provide support to someone at a lower or similar level which is eager to upskill in preparation for an opportunity to progress in the role they currently have (Davis, 2014). This thesis highlights three main points about mentoring which focus on seeking the right candidate to mentor them, women's perspective of mentoring and women taking the initiative to give back through mentoring.

Support systems in the construction industry

To look for adequate candidates to become mentors, the women in this thesis have identified certain attributes that they acquire from a mentor which is listening, facilitate to the needs of the subordinate and provision of advice wherever applicable. For example, Lily mentioned that she had always had a mentor as she found them useful as a person to talk to about any problems Lily had faced. Such a situation as Lily discusses could well result in reduced turnover and enhance organisational commitment (Lingard & Lin, 2004). The thesis suggests that finding the right candidate to become a mentor will contribute to women progression of their careers. Thus, a women's perspective is considered to find someone who they can benefit from in their career.

The main perspective that women take when they look for a mentor is someone who has a very good career, and they admire based on work they have done in the workplace. Riley mentioned that it is related to the 'law of the lid'. She refers to this concept as managers you can only develop your capabilities based on the mentor's abilities and skills. So, it is important to take into consideration about what they should offer for one's growth in the organisation and as Davis (2014) mentions, mentoring is important as it contributes to the success of women in the construction industry. As women learn and develop in the industry, the women in this thesis suggested as they are in the later stages of their work they feel obligated that they need to give back to the industry.

One perspective they mentioned was being able to utilise mentoring to give their knowledge, skills and abilities to other women who are going through the same path as they have. For example, Natalie elaborates on this notion by saying that she wants to give back to the organisation that she is with and she feels mentoring could be an avenue she could take to give back to the organisation. Adogobo, Ibrahim and Ibrahim (2015) suggest that there is a need for women role models to become mentors. This thesis confirms this and furthermore illustrates how women in the New Zealand construction industry have acted to both seek out and become role models to contribute to the construction industry. Lingard and Lin (2004) argue that mentoring is best practice until there is equality in the construction industry. However, this is an ongoing process as this is how men (and the old boy's network) assist other men towards the progression of their career. This thesis shows women taking their own action, and this can only improve that industry over time.

This thesis has provided three most important aspects that relate to the changing aspect of the construction industry: the encouragement of firsthand experience for women wanting to enter the industry; utilising adaptable skills that women possess for changes in the industry;

and taking a practical approach to increasing awareness of what the construction industry should offer to the younger generations.

Changing the industry

For the future generation of women to gain understanding and learn about the construction industry, women in this thesis have suggested getting the first-hand experience of the organisation. Firsthand experience is best gained through the 'tools' pathway through on the job training rather than a lower level professional role in the construction industry. Madison further mentions that through these experiences young women would gain knowledge of the construction industry through the new perspective of work awareness. Work awareness is an integration of gaining qualifications and utilising on the job experience to gain understanding and development in the construction industry for women. This is an avenue that women can consider gaining firsthand experience in the industry. However, studies conducted by Boyd (2013) and Kokken and Alin (2015) emphasise that practice-based learning is the most appropriate approach to take to learn about the construction industry. In contrast, Madison's perspective of work awareness is different as it demonstrates gaining a theoretical understanding of the industry while encountering first-hand experience. So, this thesis illustrates that, in contrast to previous research, from a women's perspective, work awareness is better suited for them as it will give women job security from the qualifications and experience.

As the industry is changing, there are aspects of the sector where women can thrive. The understanding of the construction industry is that it is a very hard working, heavy lifting organisational culture. Through providing knowledge on what construction is like, young women in schools can get a clear understanding of what the construction industry consists off. Olivia had recommended this by saying *"I don't feel it's been pushed enough in schools*

and so forth, and that they know that there is that career pathway. I'd love to sort of push it through schools…" Literature by Adogobo, Ibrahim and Ibrahim (2015) reinforces this notion by stating that the marketability of the industry, parents and personal interest influence career choices. Young women would get to understand what the construction industry provide as a career and also influence women to join the construction industry if awareness was pushed into schools.

The recent changes in the industry in accordance to this thesis is technology and also health and safety. Through these changes, the idea of heavy lifting and heavy work, which Agapiou (2002) said characterized the construction industry are no longer such a key aspect of the job. The skill sets required have shifted over time, so that the women in this thesis have stated that women do have the applicable skills, following these changes, for the construction industry. Madison reinforces this idea by saying that *" I think what is critical within that is that because of technology and because of health and safety I think they really allow much wider opening for women in the industry…"* Technology provides further opportunity for women to experience key aspects of the industry through technology-related training. This enables women to develop skills required before entering the workplace. A recent example of technology being implemented in the construction sector is virtual training simulator. Goulding, Nadim, Petridus and Alshawi (2011) state that the gaming industry has adopted this technology. Lee, Tse and Ma (2016) and Sacks, Perlman and Barak (2013) explain that the simulation is a construction environment in which people who are undertaking this training experience common problems that they may face in the industry. This provides trainees with a safe environment to learn construction skills and competencies. As these changes occur, part of making young women aware of construction as a potential career path should include providing updated industry information that shows how it has changed through technological advances.

This chapter discussed the key themes that explain the barriers to career advancement and the success that women do experience in the construction industry in comparison to previous research on women in construction. The barriers identified in this thesis are prejudice, the old boy's network, language and childbearing. These barriers operate at the micro, meso and macro levels. The enablers of women's success in the industry are strategies to overcome barriers, networking, mentoring and technological changes in the industry. Unique to this thesis is the practical recommendations suggested by, and often enacted by, the women interviewed in this thesis. These include suggestions for changes to training and education in the industry such as work awareness. Work awareness consists of education combined with practical based training as a way for women in the industry to learn and develop. The significance of these findings for theory and practice are presented in the next chapter, the conclusion.

Chapter Six: Conclusion

This thesis has focused on women who are in senior management and their career pathways in the construction industry. A feminist methodology was used to understand women's experiences to answer the research question *'What are the enablers and hindrances in women's career paths to senior managerial roles in the construction industry in New Zealand?'* In-depth semi-structured interviews were conducted with 11 interviewees. Using thematic analysis (Braun & Clarke, 2006) four important themes emerged from the findings to answer the research question. These themes include barriers in the construction industry, overcoming the barriers, support systems in the construction industry and changing the industry. This chapter seeks to answer the research question through the themes found in this thesis. It will then outline areas for future research which emerged from this thesis and the significance of this study will be presented.

To answer the research question, the results from this thesis identify that the barriers women in the construction industry face are wide-ranging in nature and include prejudice, language, work-life balance and the 'old boy's' network. Prejudice and language affect women on an individual scale. The interviewees identified that these barriers affect them through males' perceptions of women and males' disrespectful manner towards women. Furthermore, some interviewees felt that they needed to learn to accept this behaviour from men as they could feel shocked at the offensive language used in the workplace. The literature confirmed these findings by stating that there is a hindrance created by male negative perceptions of females' abilities to work in construction (Dainty & Lingard, 2004). Furthermore, the literature states that women oppose the use of profanity and offensive language in the workplace (Arditi, Gluch & Holmdahl, 2013) as it is not a trait that women have (Ibanez, 2016). Because of

these barriers, women are not attracted to the construction industry due to the masculine culture of the construction industry (Kolade & Kehinde, 2013 and Dainty, Bagihole, Ansari & Jackson, 2004).

Another barrier that is evident in the findings was work-life balance. Within this broad spectrum, the women of this thesis identified childbearing (an aspect of work-life balance) as a barrier that they had encountered. Women in this thesis suggest that there is a big personal sacrifice that results from having to choose how to allocate time to work and domestic life. Furthermore, the findings suggest that sacrifices are not only personal but also affect their partners and the family as a whole. For example, Dezaray stated that she had to become a sole breadwinner because she would gain more income for the family so her partner would look after their children. Ibanez (2016) confirms that in construction sacrifices are made through the distribution of roles in the home about care for children and the breadwinner for the family. In addition, this is considered a barrier as women's loyalty to the organisation is questioned when they are seen to prioritise family over work (Lingard & Lin, 2004).

The old boy's network, as mentioned in the findings, is apparent in the construction industry. Sophia had experienced the old boy's network through the recruitment process where she felt rejection from the start of the interview by male interviewers. There is not much literature on the old boy's network in the construction industry, but it has similar attributes to gender discrimination under the masculine culture (Bowen, Edwards & Lingard, 2013). Women are not welcomed into this network, and their exclusion hinders their career progression (Dainty & Lingard, 2006). It affects all aspects of their career, including entry into the industry as Sophia explained when she was not offered a job.

In contrast, the enablers of women's progression in construction include how they overcome the barriers, support systems in the construction industry and changing the industry. Women in this thesis overcame barriers through their personal characteristics such as perseverance

and dedication to remain in the construction industry (Agapiou, 2002; Fernando, Amaratunga & Haigh, 2014). Women of this thesis suggested that they are ambitious which increases their self-motivation to overcome the barriers that they experience.

Building relationships with other like-minded people is important for women and networking and mentoring can contribute to their career progression and retention in construction (Davis, 2014; Jimoh, Oyewobi, Adamu & Bayere, 2016; Lingard & Lin, 2004).). Women in this thesis sought people who can listen and facilitate ideas wherever necessary which could contribute to women's success. As these relationships build, new ideas are generated which could help change the industry.

With a strong support system of networking and mentoring, this can influence women to take an approach that would not only benefit them in the industry but contribute to changing the industry which is the next theme identified to answer the research question. The interviewees recommended gaining firsthand experience in a construction environment to understand and learn about construction. Other methods of learning as mentioned in this thesis could include utilising an integration of education and practice based learning. However, the literature states that practice based learning is the preferred method (Boyd, 2013). Because of the changes in technology in construction, this thesis finds that women have adaptable skills to suit changes in this industry especially in technology and in health and safety. Specifically, with technology, there is the use of virtual training (Sacks, Perlman & Berak, 2013). Women have the aptitude to adapt their skill that means they are better placed to use and show leadership in the use of technology for training, and improved health and safety processes. As women in the industry have experienced barriers throughout their career they have also created avenues for success that would benefit women wishing to enter or progress in the industry. The next section of this chapter will focus on areas that this thesis portrays as opportunities for future research.

Areas for future research

Feminist methodology suggests being able to put women at the forefront of the research (Hekmann, 2007). This thesis achieves this through gathering women's experience of their career pathways in the construction industry. However, there are areas for future research that need acknowledgement.

The gap that this thesis investigates is women's experience of the construction industry in a New Zealand context. The geographical approach that this thesis took may be a limitation. This research was conducted only in the Auckland region. However, Auckland accounts for a substantial amount of the population in New Zealand (Statistics New Zealand, 2013) which means that the Auckland region is relatively representative of the whole population in New Zealand. In accordance to the Ministry of Business Innovation and Employment (2013) Auckland has close to 35,000 employees in the construction industry in comparison to the 26,000 employees in Christchurch. This can be taken into consideration for future research which could provide a greater geographical spread of interviewees on a national scale. This could help explore any external factors such as economic, political and social factors that might potentially impact women's experiences of the construction industry within different regions.

The purpose of the research is to understand the barriers and successes that women encounter in the career progression process in the construction industry. Masculine cultures and stereotypes of women that are perpetuated by the behaviour of men in the construction industry hinder women's career opportunities. It also appears that there is generally a lack of support for women from male colleagues in the industry. Due to this, women have acted to make opportunities to advance in the construction industry. One potential limitation of this

research is that the experiences and views of men in relation to women's careers in construction were not sought. An avenue for future research may consist of a male and female perspective of women's abilities to perform in the construction industry. This would contribute multiple perspectives of women in the construction industry (Agapiou, 2002) but specifically in the New Zealand context.

Significance of this study

This thesis contributes in three significant ways: it provides information that could contribute to the industry meeting its skill shortages; theoretical contributions through a male researcher conducting feminist research; and through highlighting practical advice that organisations in construction can benefit from.

The construction industry in New Zealand has had a skill shortage (Webb, 2015) since 2011 with the Christchurch earthquake (Stuff, 2016) and the Auckland housing scheme to facilitate the growing population (Statistics New Zealand, 2013). The New Zealand population comprises more men than women and there are more women who are not currently in paid work and could be seeking work (Statistics New Zealand, 2013). The argument that this research focuses on is to access the untapped resource of women to help to enhance construction organisations through dynamic skills and abilities and fill the skill gap that the construction industry is suffering in New Zealand. As women provide contrasting skills to men (Ministry for Women, 2015), this could be used as an advantage to the construction industry as women themselves have provided authentic and innovative ways to enhance work and are more capable of adapting and facilitate the changing industry.

Another significant aspect of this thesis is male researchers employing feminist research as a research method. Male researchers conducting feminist research is less common than

women conducting feminist research. The role of an ally (adapted from other research fields) can be used to support the concept of men conducting feminist research when the male researcher's aims and philosophy are in alignment with the principles of feminist research. The work of Brown and Ostrove, (2013) Brooke and Edward (2009) and Ji (2007) suggests that an ally can encourage and support the minority and in relation to this thesis, the purpose of the researcher is to facilitate the minority of women in a male-dominated industry. This is a key area where future research can be conducted regarding researcher's perspective on males conducting feminist research.

Similarly, research in both construction and other trades has made recommendations on how to remove or compensate for barriers to women's progression (English & Hays, 2014; Francis, 2017). However, these recommendations have been based on the researchers' analysis of the interviewees' experiences. This thesis presents the women interviewees' own recommendations and actions. This emerging theme is a new perspective in the research made possible by the feminist methodology it employs. This thesis brings the women's experiences to the forefront, and highlights the actions they have taken to improve the industry for other women. There are beneficial attributes which underpin this perspective that organisations can consider.

Practical Implications

As identified, a significant aspect drawn from this thesis are the practical recommendations provided by the interviewees of this thesis which contribute to support women who contemplate a career in the industry or pursue an avenue of progression in their field. These practical implications include gaining practical experience in the industry, having adaptable skills and work awareness. These strategies were suggested by the women in this thesis as

they believe is beneficial for other women wanting to enter or progress in the construction industry.

Gaining practical experience refers to women who look to pursue a career in the construction industry to find opportunities to provide a fair understanding of what the industry is like – especially for women who make it to senior management through their profession, rather than through the 'tools'. This is important to understand as women are able to utilise their skills and abilities but also give the organisations ideas of how to better utilise resources that could benefit growth of the businesses and also meet the skills needed which could also diversify the future of construction. This is similarly apparent as it is recommended that women have adaptable skills that could contribute to the changing industry.

The women of this thesis identified that technology and health and safety are two main recent changes in the construction industry. The findings identified that women have adaptable skills that make them well suited to meeting these changes. Organisations can benefit from this practical approach as they could understand the skills women have and look at how the organisation can benefit from these skills. This could help organisations to match jobs that are available in their organisations to the skills that women possess to best utilise their skills which could enhance performance for the organisation.

A new perspective that women suggested for this thesis was the notion of work awareness. This is closely linked through feminist methodology as it challenges the norms of society and supports social change (Eriksson and Kovalainen, 2016). Work awareness contests the norms of the construction industry as it projects a masculine culture and accepts social change as it gives accreditation through qualification and experience in the field. This concept is an integration of education and practical based learning. Women in this thesis mention that this provides better understanding and is a recommended approach to take to gain experience and also gain certified qualifications that contribute to career advancement in the construction

industry. This is important as it encourages organisations to conduct a collaborative approach with educational institutions to formulate a programme that both meet the needs of what needs to be taught theoretically and experienced practically.

Conclusion

In conclusion, the purpose of this thesis is to understand women's perspectives on and experiences of the challenges and avenues to success in the construction industry. The significance of this study includes information that contributes to the industry meeting the skill shortage, theoretical implications through a male conducting feminist research and practical implications that would benefit organisations within the construction industry. Diversity in such a masculine cultured industry can provide many positive aspects in improving company policies. The recommendations made by the women interviewees from their own experiences may help increase the number of women who enter and stay in the construction industry. These recommendations provide support and encouragement for women to not dwell on socially constructed perceptions of women's ability to succeed in construction and to encourage freedom and equality to enter this career.

References

Abdel-Wahab, M. (2012). Rethinking apprenticeship training in the British construction industry.
Journal of Vocational Educational Training, 64(2), 145-154.
doi: http://dx.doi.org/10.1080/13636820.2011.622450

Adogbo, K. J., Ibrahim, A. D., & Ibrahim, Y. M. (2015). Development of a framework for attracting and retaining women in construction practice. *Journal of Construction in Developing Countries, 20*(1), 99- 115. Retrieved from http://web.usm.my/jcdc/vol20_1_2015/JCDC%2020(1)%202015-Art.%206%20(99-115).pdf

Agapiou, A. (2002). Perceptions of gender roles and attitudes towards work among male and female operatives in the Scottish construction industry. *Construction, Management & Economics., 20*(8), 697-705. doi:10.1080/0144619021000024989

Anderson, E. (1995). Feminist epistemology: An interpretation and a defense. *Hypatia, 10*(3), 50-84.doi:http://dx.doi.org/10.1111/j.1527-2001.1995.tb00737.x

Arditi, D., Gluch, P., Holmdahl, M (2013). Managerial competencies of female and male managers in the Swedish construction industry. *Construction Management and Economics,11*(9),979-990.doi:http://dx.doi/10.1080/01446193.2013.828845

Arena, C., Cirillo, A., Mussolino, D., Pulcinelli, I., Saggese, S., & Sarto, F. (2015). Women on board: evidence from a masculine industry. *Corporate Governance: The International Journal of Effective Board Performance, 15*(3), 339 -356. doi: http://dx.doi.org/10.1108/cg-02-2014-0015

Arslan, G., & Kivrak, S (2004). The lower employment of women in Turkish construction sector. *Building and Environment, 37*(1) 1379-1387. doi: 10.1016/j.buildenv.2004.03.005

Baruah, B. (2010). Gender and Globalization: Opportunities and Constraints Faced by Women in the Construction Industry in India. *Labor Studies Journal. 35*(2), 198- 221. doi:http://dx.doi.org/10.1177/0160449x08326187

Baruah, B. (2011). Building Visibility: Challenges and opportunities facing women construction workers in contemporary India. [Magazine]. *Women & Environments International Magazine* (86/87)*,* 18-23.

Beckman, L. J. (2014). Training in Feminist Research Methodology: Doing Research on the Margins. *Women & Therapy, 37*(1-2), 164- 177. doi:http://dx.doi.org/10.1080/02703149.2014.850347

Bowen, P., Edwards, P., & Lingard, H. (2013). Workplace stress among construction professionals in South Africa: the role of harassment and discrimination. *Engineering, Construction and Architectural Management, 20*(6), 620- 635. doi:10.1108/ECAM-05-2012-0051

Boyd, D. (2013). Using events to connect thinking and doing in knowledge management. *Construction Management and Economics, 31*(11), 1144- 1159. doi:http://dx.doi.org/10.1080/01446193.2013.866260

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

Brooks, A. K., & Edwards, K. (2009). Allies in the workplace: Including LGBT in HRD.

Advances in Developing Human Resources, 2(1), 136- 149. doi:10.1177/1523422308328500

Brown, K. T., & Ostrove, J. M. (2013). What does it mean to be an ally? The perception of allies from the perspective of people of color. *Journal of Applied Social Psychology, 43*(1), 2211–2222. doi:10.1111/jasp.12172

Bryman, A., & Bell, E. (2011). *Business research methods*. Oxford, United Kingdom: Oxford University Press.

Building and Construction Industry Training Organisation. (n.d). About BCITO. Retrieved from http://bcito.org.nz/about-bcito/

Cappelli, P. H. (2015). Skill gaps, skill shortages, and skill mismatches: Evidence and arguments for the United States. *ILR Review, 68*(2), 251- 290. doi:10.1177/0019793914564961

Ceda. (2013). *Women in leadership: Understanding the gender gap*. Melbourne, Australia. Retrieved from http://adminpanel.ceda.com.au/folders/Service/Files/Documents/15355~cedawiljun e%202013final.pdf

Chandra, V., & Loosemore, M. (2004). Women's self-perception: an inter-sector comparison of construction, legal and nursing professionals. *Construction Management & Economics, 22*(9), 947–956. doi:http://doi.org/10.1080/01446190410001673580

Cohen, L., Manion, L., & Morrison, K. (Eds.). (2000). *Research Methods in Education* (5th ed.). London, United Kingdom: Routledge Falmer.

Construction Industry Institute (2016). *The shortage of skilled craft workers in the U.S.* Retrieved from https://www.construction-institute.org/scriptcontent/more/182_1_more.cfm

Costa, P. (2015). Realism, relativism and pluralism: An impossible marriage? *Philosophy and social Criticism, 4*(4-5), 413- 422. doi:10.1177/0191453714565501

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. London, United Kingdom: Sage Publication

Dainty, A. R. J., Bagihole, B. M., Ansari, K. H., & Jackson, J. (2004). Creating Equality in the construction industry: An agenda for change for women and ethnic minorities. *Journal of Construction Research, 5*(1), 75- 86. Retrieved from http://eds.b.ebscohost.com.ezproxy.aut.ac.nz/eds/pdfviewer/pdfviewer?sid=996323b 7-6310-424d-acd1-d0b16da40bd7@sessionmgr107&vid=3&hid=117

Dainty, A. R. J., Bagihole, B. M., & Neale, R. H. (2000). A grounded theory of women's career underachievement in large UK construction companies. *Construction Management and Economics, 18*(2), 239- 250. doi:https://doi.org/10.1080/014461900370861

Dainty, A. R. J., & Lingard, H. (2006). Indirect discrimination in construction orgnaizations and the impact on women's careers. *Journal of Management in Engineering, 22*(3), 108-118. doi:10.1061/!ASCE"0742-597X!2006"22:3!108"

Davidson, I. (2016, 3 June). Homelessness rising in New Zealand. *New Zealand Herald*. Retrieved from http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11650103

Davies, A. (2012). Liberal Feminism. In A. J. Mills., G. Durepos., & E. Weibe. (Eds.), *Encyclopedia of Case Study Research* (pp. 526- 527). Thousand Oaks, United States of America Sage Publications Inc.

Davis, S. (2014). Professional women in construction. In M. Munn (Ed.), *Building the future: women in construction*. London, United Kingdom: The Smith Institute.

Denissen, A. M. (2010). The right tools for the job: constructing gender meanings and identities in the male- dominated building trades. *Human Relations, 63*(7), 1051-1069. doi: http://dx.doi.org.ezproxy.aut.ac.nz/10.1177/0018726709349922

DeVault, M. L. (1996). Talking Back to Sociology: Distinctive Contributions of Feminist Methodology. *Annual Review of Sociology, 22*(1), 29-50. doi: http://dx.doi.org/10.4324/9781315743134

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education, 40*(4), 314-321.

Dimovski, V., Skerlavaj, M., & Mok Kim Man, M. (2010). Is there a 'glass ceiling' for female managers in Singapore. *Management, 5*(4), 307-329. Retrieved from http://www.fm-kp.si/zalozba/ISSN/1854-4231/5_307-329.pdf

Doucet, A., & Mauthner, N. S. (2006). Feminist methodologies and epistemology. In C. D. Bryant. & D. L. Peck. (Eds.), *21st Century Sociology: A reference Handbook*. Thousand Oaks, United States of America: Sage Publications Inc.

Dougan, P. (2016, 15th March). Women 'untapped resource' in tackling construction trades shortage. *New Zealand Herald*. Retrieved from http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11754526

Emmitt Consultants. (2017). *Control your building costs*. Retrieved from http://www.emmittcostmanagement.co.nz/

English, J., & Hay, P. (2015). Black South African women in construction: cues for success. *Journal of Engineering, Design and Technology, 13*(1), 144- 164. doi:http://dx.doi.org/10.1108/JEDT- 06-2013-0043

Eriksson, P., & Kovalainen, A. (Eds.). (2016). *qualitative methods in business research* (2nd ed.). United Kingdom, London: Sage Publications Ltd.

Fernando, N. G., Amaratunga, D., & Haigh, R. (2014). The career advancement of the professional women in the UK industry: the career success factors. *Journal of Engineering, Design and Technology, 12*(1), 53- 70. doi:10.1108/JEDT-04-2012-0018

Fielden, S. L., Davidson, M. J., Gale, A. W., & Davey, C. L. (2000). Women in construction: the untapped resource. *Construction Management and Economics, 18*(1), 113- 121. doi:https://doi.org/10.1080/014461900371004

Flick, U. (2014). *An introduction to qualitative research*. London, United Kingdom: Sage.

Francis, V. (2017). What influences professional women's career advancement in construction?
Construction Management and Economics, 35(5), 254- 275.
doi:10.1080/01446193.2016.1277026

French, E., & Strachan, G. (2015). Women at work! Evaluating equal employment policies and outcomes in construction. *Equality, Diversity and Inclusion: An International Journal, 34*(3) 227-243. doi:10.1108/EDI-11-2013-0098

Gamble, B. (2013). Labor shortage hammers U.S. construction industry. *PM Network, 27*(4), 14- 15. Retrieved from http://eds.b.ebscohost.com.ezproxy.aut.ac.nz/eds/pdfviewer/pdfviewer?vid=1&sid= 80d6deaf-b954-4589-96fd-3bd5d1386b39%40sessionmgr101

George, D. (2017). Major earthquake could split Wellington region into 'seven islands'. *stuff*. Retrieved from http://www.stuff.co.nz/national/nz-earthquake/90790889/major-earthquake-could-split-wellington-region-into-seven-islands

Goulding, J., Nadim, W., Petridis, P., & Alshawi, M. (2012). Construction industry offsite production: a virtual reality interactive training environment prototype. *Advanced engineering Informatics, 26*(1), 103-116. doi:https://doi-org.ezproxy.aut.ac.nz/10.1016/j.aei.2011.09.004

Grant, B. M., & Giddings, L. S. (2002). Making sense of methodologies: A paradigm framework for the novice researcher. *Contemporary Nurse, 13*(1), 10-28. doi:http://dx.doi.org/10.5172/conu.13.1.10

Gray, D. E. (Ed.). (2014). *doing research in the real world* (3rd ed.). United Kingdom, London: Sage Publications Ltd.

Guest, G., MacQueen, K. M., & Namey, E. E. (2014). Introduction to Applied Thematic Analysis. *Applied Thematic Analysis*. Thousand Oaks, United States of America: Sage Publications Inc.

Gurjao, S. (2006). *Inclusivity: the changing role of women in the construction workforce*. United Kingdom. Retrieved from https://www.ciob.org/sites/default/files/CIOB%20research%20-%20The%20Changing%20Role%20of%20Women%20in%20the%20Construction%20Workforce.pdf

Hartmann, H. (1976). Capitalism, patriarchy, and job segregation by sex. *Women and the Workplace: The Implications of Occupational Segregation, 1(*3), 137-169. doi: http://dx.doi.org/10.1086/493283

Hayes, E. (2005). Women, video gaming and learning: Beyond stereotypes. *TechTrends, 49*(5), 23-28. doi:https://doi.org/10.1007/bf02763686

Hekman, S. (2007). Feminist methodology. In W. Outhwaite & S. P. Turner (Eds.), *The Sage Handbook of Social Science Methodology* (pp. 534-547). London, England: Sage Publications.

Ho, P. H. K. (2016). Labour and skill shortages in Hong Kong's construction industry. *Engineering, Construction and Architectural Management, 23*(4), 533- 550. doi:http://dx.doi.org/10.1108/ECAM-12-2014-0165

Hoobler, J. M., Wayne, S. J., & Lemmon, G. (2009). Bosses' perception of family-work conflict and women's promotionability: glass ceiling effects. *Academy of Management Journal, 52*(5), 939-957. doi:10.5465/AMJ.2009.44633700

Horsburgh, D. (2003). Evaluation of qualitative research. *Journal of Clinical Nursing, 12*(2), 307- 312. doi:http://dx.doi.org/10.1046/j.1365-2702.2003.00683.x

Hossain, J. B., & Kusakabe, K. (2005). Sex segregation in construction organizations in Bangladesh and Thailand. *Construction Management and Economics, 23*(6), 609-619. doi:10.1080/01446190500127062

Ibanez, M. (2016). Women in the construction trades: career types and associated barriers. *Women's Studies International Forum, 60*(1), 39- 48. doi:http://dx.doi.org/10.1016/j.wsif.2016.12.001

Immigration New Zealand. (2017). *Working in the New Zealand construction industry* New Zealand New Zealand Government. Retrieved from https://www.newzealandnow.govt.nz/files/documents/Working-in- Construction-English.pdf

Jhabvala, R., & Kanbur, R. (2002). *Globalization and Economic Reform as seen from the ground: SEWA's experience in India*. presented at the meeting of the Indian Economy Conference, New York, United States of America.

Ji, P. (2007). Being a heterosexual ally to the lesbian, gay, bisexual, and transgendered community: Reflections and development. *Journal of Gay & Lesbian Psychotherapy, 11*(3-4), 173- 185. doi:http://dx.doi.org/10.1300/J236v11n03_10

Jimoh, R. A., Oyewobi, L. O., Adamu, A. N., & Bajere, P. A. (2016). Women professionals' participation in the Nigerian construction industry: finding voice for the voiceless. *Organization, Technology and Management in Construction, 8*(1), 1429- 1436. doi:10.1515/otmcj-2016-0005

Johnstone Construction. (2016). *Our team*. Retrieved from http://www.johnstoneconstruction.co.nz/about-us/

Kaewsri, N., & Tongthong, T. (2013). Professional development of female engineers in the Thai construction industry. *Procedia- Social and Behavioral sciences, 88*(1), 291-298. doi:10.1016/j.sbspro.2013.08.508

Kenyon, E., & Hawker, S. (1999). 'Once would be enough': some reflections on the issue of safety for lone researchers. *International Journal of Social Research Methodology, 2*(4), 313- 327. doi:http://dx.doi.org/10.1080/136455799294989

Kinicki, A., Scott-Ladd, B., Perry, M., & Williams, B. (2015). *Management: a practical introduction*. New South Wales: McGraw-Hill Education (Australia) Pty Ltd.

Kokkonen, A., & Alin, P. (2015). Practice-based learning in construction projects: a literature review. *Construction Management and Economics, 33*(7), 513- 530. doi:http://dx.doi.org/10.1080/01446193.2015.1062903

Kolade, O. J., & Kehinde, O. (2013). Glass Ceiling and Women Career Advancement: Evidence from Nigerian Construction Industry. *Iranian Journal of Management Studies, 6*(1), 79–99. Retrieved from https://ijms.ut.ac.ir/article_30125_dfcc031c2e5cf5c2c1d2b94826dc7128.pdf

Krolokke, C., & Sorensen, A. S. (2006). *Gender Communication Theories and Analyses: From Silence to Performance*. Thousand Oaks, California: Sage Publications Ltd.

Lee, W. H., Tse, K. H. D., & Ma, W. K. P. (2016). Applied technologies in minimizing accidents in construction industry. *Procedia Environmental Sciences, 36*(1), 54-56. doi:10.1016/j.proenv.2016.09.010

Levin, P. (2001) Gendering the market: temporality, work, and gender on a national future exchange. *Work & Occupations. 28*(1): 112–130. doi: http://dx.doi.org/10.1177/0730888401028001007

Liff, S., & Ward, K. (2001). Distorted views through the glass ceiling: the construction of women's understandings of promotion and senior management positions. *Gender, Work and Organization, 8*(1), 19-36. doi: http://dx.doi.org/10.1111/1468-0432.00120

Lingard, H., & Lin, J. (2004). Career, family and work environment determinants of organizational commitment among women in the Australian construction industry. *Construction Management and Economics, 22*(4), 409- 420. doi:10.1080/0144619032000122186

Lobo, Y. B., & Wilkinson, S (2008). New approaches to solving the skills shortages in the New Zealand construction industry. *Engineering, Construction and Architectural Management, 15*(1) 42-53. doi: 10.1108/09699980810842052

Lowe, J., & Woodcroft, I. (2014). Women in construction-time to think differently? In M. Munn. (Ed.),   *Building the future: women in construction*. London, United Kingdom: The Smith Institute.

Lu, S., & Sexton, M. (2010). Career journeys and turning points of senior female managers in small construction firms. *Construction Management and Economics, 28*(2), 125-139. doi:10.1080/01446190903280450

Mackenzie, S., Kilpatriick, A. R., & Akintoye, A. (2000). UK construction skills shortage response strategies and an analysis of industry perceptions. *Construction Management and Economics, 18*(7), 853- 862. doi:http://dx.doi.org/10.1080/014461900433131

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research, 26*(13), 1759-1760. doi:10.1177/1049732315617444 qhr.sagepub.com

Maori and Pasifika Trades Training. (2017). *Women in the trades*. Retrieved from http://www.maoripasifikatrades.co.nz/women-in-trades/

Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice, 13*(6), 522-525. doi: https://doi-org.ezproxy.aut.ac.nz/10.1093/fampra/13.6.522

McDonald, S. (2011). What's in the "old boys" network? Accessing social capital in gendered and racialized networks. *Social Networks, 33*(4), 317- 330. doi:10.1016/j.socnet.2011.10.002

McDonough, T. (2016). Facing the skills gap. *Construction Today*. Retrieved from http://www.construction-today.com/sections/columns/2944-facing-the-skills-gap

McGuire, G. M. (2002). Gender, race, and the shadow structure: a study of informal networks and inequality in a work organization. *Gender & Society, 16*(3), 303- 322. doi:https://doi.org/10.1177/0891243202016003003

Menches, C. L., & Abraham, D. M. (2007). Women in construction- Tapping the untapped resource to meet future demands. *Journal of Construction, Engineering and Management, 133*(9), 701- 707. doi:10.1061/ ASCE 0733-9364 2007 133:9 701

Meyerson, D. E., & Fletcher, J. K. (2000). A modest manifesto for shattering the glass ceiling. *Harvard Business Review, 78*(1), 126-136.

Middlemiss, N. (2017). *New funding puts diversity on the agenda*. Retrieved 22 February 2017, from http://www.hrmonline.co.nz/news/new-funding-puts-diversity-on-the-agenda-231655.aspx

Ministry for Women (2015). *Getting it done: Utilising women's skills in the workforce*. Wellington, New Zealand: Ministry for Women.

Ministry of Business, Innovation and Employment. (2013). *Construction*. Wellington, New Zealand: Ministry of Business, Innovation and Employment. Retrieved from http://www.mbie.govt.nz/info-services/business/business-growth-agenda/sectors-reports-series/pdf-image-library/construction-report/construction-report.pdf

Ministry of Business, Innovation and Employment. (2016). *Migration trends 2015/2016*. Wellington; New Zealand. Retrieved from http://www.mbie.govt.nz/publicationsresearch/research/migrants---monitoring/migration-trends-and-outlook-2015-16.pdf

Ministry of Business, Innovation and Employment. (2017). *Quarterly labour market report*. Wellington; New Zealand. Retrieved from http://www.mbie.govt.nz/info-services/employment-skills/labour-market-reports/labour-market-analysis/labour-market-report/document-image-library/quarterly-labour-market-report-february-2017.pdf

Ministry of Women (2015). *Getting it done: Utilising women's skills in the workforce*. Wellington, New Zealand. Retrieved from http://women.govt.nz/documents/getting-it-done-utilising-womens-skills-workforce-2015

Ministry of Women's Affairs. (2013). *Realising the opportunity: Addressing New Zealand's leadership pipeline by attracting and retaining talented women*. Wellington, New Zealand.

Mordi, C., Adedoyin, H., & Ajonbadi, H. (2011). Impediments to women career advancement: The Nigerian experience. *Petroleum – Gas University of Ploiesti Bulletin, Economic Sciences Series, 63*(2), 11-22. Retrieved from http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=1&sid=18f5a649-8891-45bc-b849-9e84ac6e2a04%40sessionmgr120

Morton, J. (2017). Kaikoura earthquake shake greater than Christchurch. *New Zealand Herald*. Retrieved from http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11835085

Munn, M. (2014). *Building the future: women in construction*. London, United Kingdom: The Smith Institute.

National Association for Women in Construction. (2017). *National Association for Women in Construction*. Retrieved from http://www.nawic.org.nz/

Ness, K. (2012). Constructing masculinity in the building trades: 'most jobs in the construction industry can be done by women *Gender, Work and Organization, 19*(6), 654- 676. doi:10.1111/j.1468-0432.2010.00551.x

New Zealand Parliamentary Counsel Office. (2017). *Health and safety at work act 2015*. Retrieved from http://www.legislation.govt.nz/act/public/2015/0070/latest/DLM5976660.html

New Zealand Transport Agency. (2017). *Road surfacing*. Retrieved from https://www.nzta.govt.nz/roads-and-rail/road-composition/road-surfacing/

Niiniluoto, I. (1991). Realism, relativism, and constructivism. *Synthese, 89*(1), 135-162. doi:http://dx.doi.org/10.1007/bf00413803

Olsen, V. (2005). Early millennial feminist qualitative research: challenges and contours. In N. K. Denzin & Y. S. Lincoln (Eds.), *The sage handbook of qualitative research third edition* (pp. 235- 278). Thousand Oaks, California: Sage Publications.

Olsen, D., Tatum, M., & Defnall, C. (2012). *How industrial contractors are handling skilled labor shortages in the United States*. presented at the meeting of the 48th ASC Annual International Conference Proceedings, Birmingham, United Kingdom.

Pacheco, G., Li, C., & Cochrane, B. (2017). *Emperical evidence of the gender pay gap in New Zealand*. New Zealand: Ministry for Women. Retrieved from http://women.govt.nz/sites/public_files/Empirical%20evidence%20of%20GPG%20 in%20NZ%20-%20Mar2017_0.pdf

Pacifecon and BRANZ (2013). New Zealand Building and Construction Productivity Partnership: National Construction Pipeline. Auckland, New Zealand: Pacifecon (NZ) Ltd.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Newbury Park, CA: Sage

Pickett, B. (2016). More women wanted in construction industry. *Stuff*. Retrieved from http://www.stuff.co.nz/business/79091869/more-women-wanted-in-construction-industry

Registered Master Builder. (2012). *Registered master builders: building excellence*. Retrieved from http://www.masterbuilder.org.nz/

Sacks, R., Perlman, A., & Barak, R. (2013). Construction safety training using immersive virtual reality. *Construction Management and Economics, 31*(9), 1005- 1017. doi:http://dx.doi.org/10.1080/01446193.2013.828844

Sandelowski, M. (1995). Focus on qualitative methods: sample size in qualitative research. *Research in Nursing & Health, 18*(1), 179- 183. Retrieved from http://scholar.google.co.nz/scholar_url?url=http://onlinelibrary.wiley.com/doi/10.1 002/nur.4770180211/abstract&hl=en&sa=X&scisig=AAGBfm1Soa5fiJgkyhHATYq bVXrQeoyn2Q&nossl=1&oi=scholarr&ved=0ahUKEwja3vbGtqrQAhXDi5QKHW NHBLcQgAMIGCgAMAA

Scott, J. (2015). Snowballing technique (snowball sample) In J. Scott (Ed.), *A dictionary of sociology* (4 ed.). doi:10.1093/acref/9780199683581.013.2105.

Song, J., Zuo, B., & Yan, L. (2016). Effects of gender stereotypes on performance in mathematics: a serial multivariable mediation model *Social Behavior and Personality: an international journal, 44*(6), 943-952. doi:http://dx.doi.org/10.2224/sbp.2016.44.6.943

Sowaal, A. (2004). Cartesian bodies. *Canadian Journal of Philosophy, 34*(2), 217- 240. doi:http://dx.doi.org/10.1080/00455091.2004.10716566

Stanley, L., & Wise, S. (2002). *Breaking out again: Feminist ontology and epistemology.* London, United Kingdom: Routledge.

Statistics New Zealand. (2013). *Census QuickStats about national highlights*. Retrieved 23 January 2017, from http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-about-national-highlights

Statistics New Zealand. (2013). *2013 Census QuickStats about work and unpaid activities*. Retrieved 23 January 2017, from http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/quickstats-work-unpaid.aspx

Statistics New Zealand (2013). 2013 Census – Major ethnic groups in New Zealand. Retrieved from http://www.stats.govt.nz/Census/2013-census/profile-and-summary-reports/infographic-culture-identity.aspx

Statistics New Zealand. (2015). *Women at work: 1991- 2013*. Retrieved 20 January 2017, from
http://www.stats.govt.nz/browse_for_stats/people_and_communities/Women/women-occupation.aspx

Styhre, A. (2011). The overworked site manager: gendered ideologies in the construction industry. *Construction Management & Economics, 29*(9), 943- 955. doi:10.1080/01446193.2011.588955

Tennis, J. T. (2008). Epistemology, theory, and methodology in knowledge organization: toward a classification, metatheory, and research framework. *Knowledge Organization, 35*(2-3), 102-112. Retrieved from http://faculty.washington.edu/jtennis/Publications_files/Tennis2008KOEpist.pdf

Thayaparan, M., Amaratanga, D., & Haigh, R. (2014). Contributions of women managers to UK construction industry Symposium conducted at the meeting of the International Conference on Construction in a Changing World Kandalana: Sri Lanka.

Tong, R. (2009). *Feminist thought: A more comprehensive introduction* (3rd ed.). United States of America: Westview Press.

Tong, R. (2013). *Feminist thought: A comprehensive introduction.* Abingdon, Oxon: Routledge.

Vermeulen, L., & Looy, J. V. (2016). "I play so I am?" A gender study into stereotype perception and genre choice of digital game players. *Electronic Media, 60*(2), 286-304. doi:https://doi.org/10.1080/08838151.2016.1164169

Walby, S. (1989). Theorising patriarchy. *Sociology, 23*(2), 213-234. doi: http://dx.doi.org/10.1177/0038038589023002004

Wan, Y. K. P. (2014). Minding the gap in the gaming industry: Perceptions of gender disparity at work among female casino dealers. *Contemporary Hospitality Management, 26*(1), 130-153. doi:http://dx.doi.org/10.1108/IJCHM-10-2012-0186

Watts, J. H. (2009a). Leaders of men: women 'managing' in construction. *Work, Employment and Society, 23*(3), 512-530. doi: 10.1177/0950017009337074

Watts, J. H. (2009b). 'Allowed into a man's world' meanings of work-life balance: Perspectives of women civil engineers as 'minority' workers in construction. *Gender, Work and Organization, 16*(1), 37-57. doi:10.1111/j.1468-0432.2007.00352.

Webb, C. (2015, 17th March). Skill shortage challenges New Zealand Earthquake Rebuild. *Engineering News- Record,* pp. 1-2.

Whittock, M. (2002). Women's experiences of non-traditional employment: is greater equality in this area a possibility? *Construction Management and Economics, 20*(5). 449-456. doi: 10.1080/01446190210140197

WIEGO. (2016). *Women in India's Construction Industry.* Retrieved from http://wiego.org/informal-economy/women-india%E2%80%99s-construction-industry

Wilson, E. (2014). Diversity, Culture and the Glass Ceiling. *Journal of Cultural Diversity, 21*(3), 83- 89. Retrieved from http://eds.b.ebscohost.com.ezproxy.aut.ac.nz/eds/pdfviewer/pdfviewer?vid=1&sid=93646219-9c78-43d5-b444-d39f47275c10%40sessionmgr120

Worrall, L., Harris, K., Thomas, A., Stewart, R., Jessop, S., McDermott, P., & Platten, A (2008). Organisational cultures: progression and retention barriers to women in UK construction industry. *The International Journal of Diversity in Organisations, Communities and Nations, 8*(3), 31-39. Retrieved from http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?sid=86cc342c-5554-40a3-aa4e-751a771d6b5d%40sessionmgr106&vid=1&hid=108

Wright, T. (2014a). Gender, sexuality and male-dominated work: the intersection of long-hours working and domestic life. *Work, employment and society, 28*(6), 985-1002. doi:10.1177/0950017013512713

Wright, T. (2014b). *The Women into Construction Project: an assessment of a model for increasing women's participation in construction.* London, United Kingdom: Queen Mary University of London, Centre for Research in Equality and Diversity.

Yokwana, N. R. A., Ndihokubwayo, R., & Windapo, A. O. (2016). The influence of mentors' gender on the psychological and career mentoring of women in the South African construction industry. *Journal of Construction Project Management and Innovation, 6*(2), 1392- 1412. Retrieved from http://digitalknowledge.cput.ac.za/xmlui/bitstream/handle/11189/5811/Yokwana_NRA_Ndihokubwayo_R_Windapo_AO_The%20influence%20of%20mentors%27%20gender%20on%20[th]e%20psychosocial%20_pdf?sequence=3&isAllowed=y

Appendices

1. Advertisement to potential interviewees
2. Participant Information Sheet
3. Consent Form
4. Ethics Approval Letter
5. Interview Questions
6. Samples of interview style

SENIOR MANAGERS WE NEED YOU!!

Auckland University of Technology is known for many things in the field of research but one thing that we pride ourselves in is diversity and inclusion of student and staff diversity communities in this university.

My name is Kakala, I am a master's thesis student. My topic is based on Women who are senior managers in the construction industry and it is part of a bigger project led by Dr Nicola Naismith with Drs Katherine Ravenswood and Lynette Reid. The aim of this research is to determine the challenges to women's careers in construction as well as the factors which encourage and enable women to remain and succeed in this industry. We hope that this research will help women who currently work in construction, those who want to work in construction, as well as provide useful recommendations and guidelines to policy makers and employers on how best to attract, retain and develop women in construction.

If you are interested contact us on:

Kakala Vainikolo, ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮
▮▮▮▮▮▮▮▮

Dr Nicola Naismith, nicola.naismith@aut.ac.nz.

Dr Katherine Ravenswood,
katherine.raveswood@aut.ac.nz

AUT
UNIVERSITY
AUCKLAND, NEW ZEALAND

Appendix 2- Participant Information Sheet

Date Information Sheet Produced:
18th July 2016

Project Title
Women's career paths in the Construction Industry in New Zealand

An Invitation
We are Doctors Nicola Naismith, Katherine Ravenswood, Lynnette Reid and Masters Student Kakala Vainikolo at AUT. We would like to invite you to participate in our research on women's career paths in the construction industry in New Zealand. This will contribute to Kakala's thesis and to our project overall. Please note that this is voluntary and may withdraw at any before completing the data collection. If there is any conflict of interest at any point of time, you are able to choose whether to proceed with the research or not, your decision will neither advantage you nor disadvantage you.

What is the purpose of this research?
The aim of this research is to determine the challenges to women's careers in construction as well as the factors which encourage and enable women to remain and succeed in the construction industry. This research will result in Kakala successfully completing his thesis. It will also contribute to academic publications and it is hoped that it will result in useful guidelines and recommendations for policy makers and women in construction.

How was I identified and why am I being invited to participate in this research?
You will have responded to the email sent by NAWIC or through one of your colleagues in your professional network. You are identified through your interest in the advertisement that was displayed on the NAWIC website. You have been identified as you fit the criteria of the research which is a women working at a senior management level in a construction industry for at least 5 years

How do I agree to participate in this research?
If you choose to participate in the study, then you would need to sign a consent form stating that you have accepted to participate. You will be sent a consent form at the same time as we send you this information sheet. You will have the opportunity to ask any further questions before you sign the consent form and commence the interview.

Your participation in this research is voluntary 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 before data collection is completed. 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 and 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?
This project involves a researcher conducting a face to face interview with you (the participant) if you are in Auckland. Interviews can be in a mutually agreed public place, your work office or an office at AUT. If you are outside of Auckland we will interview you by phone. It is expected that interviews will last between 30 and 60 minutes and we will record the interviews.

What are the discomforts and risks?
It's very unlikely that you will experience any discomfort. If you do not feel comfortable answering a question you are not obliged to answer it.

How will these discomforts and risks be alleviated?
Interviewees have the right to refuse answering any question they feel that they do not feel comfortable answering. They also have the option of withdrawing from the interview at any time within the data collection process.

What are the benefits?
The researchers will benefit from the project through completion of a Master's thesis, and academic journal article publication. Interviewee they are able to get a chance to be able to contribute to the body of knowledge with your experience in your career development in the construction industry and may benefit from the resulting guidelines.

How will my privacy be protected?
The main issue that needs to be addressed is confidentiality. The research team can assure you that your identity will only be used to give you information on our project and to arrange a time for interview if you agree. This information will only accessible to the researchers. The research findings will not disclose any personal information that could identify the participant or their organisation.

What are the costs of participating in this research?
Interviewees will contribute their time in partaking in this research.

What opportunity do I have to consider this invitation?
You will be given two weeks to consider this invitation.

Will I receive feedback on the results of this research?
You are able to get feedback on the results of this research and this will be obtained in the journal article upon your request of this document to which you can get an electronic copy of the journal article.

What do I do if I have concerns about this research?
Any concerns regarding the nature of this project should be notified in the first instance to the

Project Supervisor: *Nicola Naismith, nicola.naismith@aut.ac.nz, +64 9 921 9999*

Thesis supervisor: *Katherine Ravenswood, katherine.ravenswood@aut.ac.nz , +64 9 921 9999*

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Kate O'Connor, *ethics@aut.ac.nz* , 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. You are also able to contact the research team as follows:

Researchers Contact Details

Kakala Vainikolo, ███████████████████████

Dr Nicola Naismith, nicola.naismith@aut.ac.nz, +64 9 921 9999

Dr Katherine Ravenswood, katherine.ravenswood@aut.ac.nz, + 64 9 921 9999

Dr Lynette Reid, lynette.reid@aut.ac.nz, +64 9 921 9999

Project Contact Details:

Dr Nicola Naismith, nicola.naismith@aut.ac.nz, +64 9 921 9999 ext 7949

Dr Katherine Ravenswood, katherine.ravenswood@aut.ac.nz, + 64 9 921 9999 ext 5064

Appendix 3: Consent Form

Project title: **Women's career paths in the Construction Industry in New Zealand**

Project Supervisor: Dr Nicola Naismith

Researchers: **Kakala Vainikolo, Dr Katherine Ravenswood, Dr Lynette Reid**

O   I have read and understood the information provided about this research project in the Information Sheet dated 19/11/16.

O   I have had an opportunity to ask questions and to have them answered.

O   I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.

O   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.

O   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, removal of my data may not be possible.

O   I agree to take part in this research.

O   I wish to receive a summary of the research findings (please tick one): YesO   NoO

Participant's signature:
....…………………………………………………………

Participant's name:
....…………………………………………………………

Participant's Contact Details (if appropriate):
…………………………………………………………………………………..
…………………………………………………………………………………..
…………………………………………………………………………………..
…………………………………………………………………………………

Date:

Approved by the Auckland University of Technology Ethics Committee on 19 September 2016 AUTEC Reference number 16/321
Note: The Participant should retain a copy of this form.

Appendix 4- Ethics Approval Letter

19 September 2016

Nicola Naismith
Faculty of Design and Creative Technologies

Dear Nicola

Ethics Application: 16/321 **Women's career paths in the Construction Industry in New Zealand**
Thank you for submitting your application for ethical review. I am pleased to confirm that the Auckland University of Technology Ethics Committee (AUTEC) has approved your ethics application for three years until 12 September 2019.

> *AUTEC wishes to commend the researchers on the thoroughness of their application.*
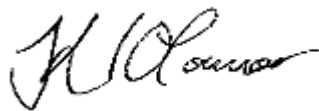> As part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through http://www.aut.ac.nz/researchethics. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 12 September 2019;

- A brief report on the status of the project using form EA3, which is available online through http://www.aut.ac.nz/researchethics. This report is to be submitted either when the approval expires on 12 September 2019 or on completion of the project;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this. If your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply there.

To enable us to provide you with efficient service, we ask that you use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at ethics@aut.ac.nz.

All the very best with your research,

Kate O'Connor
Executive Secretary
Auckland University of Technology Ethics Committee

Cc: ███████████████; Kakala Vainikolo

Appendix 5: Interview Questions

Hi there, thank you for having me here today, so my name is Kakala and I am a Masters student doing a thesis on women's career progression in the construction industry.
So, before we start I would just like to please confirm that you have read the information sheet sent to you? Okay, do you have any other questions about the information or this research?
So just to remind you it is about women in senior management in the construction industry and their experiences that they've been through in terms of their career development. So the purpose of this research it to understand the strengths and weaknesses of women progressing in the construction industry.

Can I please get you to fill this consent form out please just we have a record that you agree to participate. While you do that I want to just also remind you that this is completely voluntary and that you can withdraw up to the analysis point of this research.

So, I do have questions here but I just really want to know about your experiences so please feel free to share your thoughts.

1. So, could you please tell me about yourself, in terms of your demographic profile?
   a. Probe: Wanting to know marital & family status, age and qualification
2. So, can you tell me a bit about your role and how it relates to construction?
3. I'm interested to hear about why you chose a part of the construction industry as a career? Can you tell me a bit about that?
4. Have you thought about leaving this industry?
5. How did you get to a senior management level?
6. What has helped you to progress in the construction industry?
7. So, by saying that, in your opinion, what are ways you think could help women to succeed in this industry?
8. Were there any barriers to your career progression in the construction industry?
   a. Do you think being a women would have some sort of influence to these barriers you have mentioned?
9. So, in terms of career progression, do you think it is different for women and men?
10. From your own experience, would you do anything differently?
11. Where do you see your career from here?
12. What advice/ recommendations would you give to any woman who wants to enter into this industry?
13. Before we finish, is there anything else you think is relevant to mention or that you would like to comment on?